Measuring and Modelling Brand Equity in the

Hong Kong Continuing Education Industry

By

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Abstract

The concept of "brand equity" has received widespread recognition and research attention among marketing scholars and practitioners in recent years. Strong brand equity can confer a number of important competitive advantages to a business. Brand equity is a complex, broad and multidimensional concept, but there is still a lack of consensus on how brand equity should be measured. Furthermore, the causal interrelationships among dimensions of the brand equity construct remain unclear, and few studies have empirically examined the interrelationships among the dimensions of brand equity and their impacts on consumers' responses. There is, however, general agreement that the construct of brand equity can be broadly viewed from two perspectives: consumer-based brand equity or financial-based brand equity.

Despite the significance of brand equity to businesses, no model is currently publicly available which has widespread acceptance and which can examine the interrelationships among the dimensions of brand equity, and predict their impacts on consumers' responses as well enable the calculation of the value of a brand, particularly in the continuing education (CE) sector. Branding is increasingly recognised as one of the important sources of sustainable competitive advantage in higher education. Thus, the study proposed, firstly, a financial brand equity model, adapted from the Moran (1993, 1994) model which was used to measure the financial brand equity of the Hong Kong CE industry and of the major CE institutions (the final outcome of customer-based brand equity) (Keller and Lehmann 2003). Secondly, adapted from Aaker (1991) and Keller's (1993, 2003) consumer-based brand equity models, a customer-based brand equity model of the Hong Kong CE industry was proposed to test and measure the causal interrelationships among the "antecedents" or "sources" of customer-based brand equity and predict the "consequences" or "outcomes"

of customer-based brand equity in terms of customers' behavioural intentions (the first outcome of customer-based brand equity) (Keller and Lehmann 2003). This study represents the first published attempt to adapt and operationalise two models: firstly, the Moran (1993, 1994) model of brand equity valuation in the Hong Kong continuing education industry. Secondly, Aaker (1991) and Keller's (1993, 2003) customer-based brand equity models were adapted to test the causal interrelationships among the four dimensions of consumer-based brand equity and their relationships to customers' willingness to enrol in a CE programme, to recommend a CE institution to others and pay a higher fee.

The financial brand equity model of the study provided brand equity calculations of the Hong Kong CE industry and of its major institutions, and the calculations were further validated by cross-referencing with available secondary data researched and drawn from different local publications to ensure the broad accuracy of the brand equity valuation of individual institutions and of Hong Kong CE industry.

The results of customer-based brand equity model of the study indicated the model exhibited good fit and predictive performance in examining the causal interrelationships among the dimensions of brand equity and identifying which dimensions of customer-based brand equity have significant impacts on consumers' behavioural intentions and customers' willingness to pay a higher fee. The results support the conclusion that brand equity exists, and is important, in the Hong Kong CE industry. Some dimensions, including brand loyalty, brand associations and perceived quality were proven to exhibit causal ordering and interrelationships and to significantly influence customers' behavioural intentions and willingness to pay a premium price.

The models can be used by marketers to understand the brand values of their institutions' brands, the causal interrelationships among the four dimensions of customer-based brand equity and how the different dimensions of brand equity help to predict customers' behaviour. These measures can help practitioners analyse the value of their brands as well as their competitors', develop their marketing strategies and marketing communications plans, and in building and managing their brands more effectively. The measures can also be used for longitudinal brand health checks and to evaluate the effectiveness of advertising and branding campaigns and events.

Certification

I certify that the work in this thesis entitled "Measuring and Modelling Brand Equity in the Hong Kong Continuing Education Industry" has not previously been submitted for a degree to any other university or institution other than Macquarie University.

I also certify that this thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged. In addition, I certify that all information sources and literature used are appropriately cited in the thesis.

The research presented in this thesis was approved by Macquarie University Ethics Review Committee, reference number 5201000693(D), dated 15 June 2010.

Signed

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Chapter 1 Introduction

1.1 Introduction

The concept of "brand equity" has received widespread recognition and significant research attention among marketing scholars and practitioners over the last several decades. Nowadays, technological advances have accelerated competitiveness among businesses and companies are becoming more aware of the increasing difficulty of differentiating their competitive position and, as a response are striving to build strong brands in the minds of their customers to differentiate their competitive offerings in the marketplace. This imperative has achieved widespread acceptance as the need to create strong brand equity. A number of studies have shown that building and managing strong brand equity undoubtedly helps a company to differentiate its marketing position and increase its competitive advantage. A strategy of building strong brand equity, when successful, creates an extensive array of marketing advantages. These include enhancing the likelihood of greater customer loyalty, creating barriers to competitive entry, reducing the company's vulnerability to competition, facilitating a larger profit margin, enabling the company to charge a price premium and generating a greater volume of sales, strengthening relationships with distribution partners, increasing the effectiveness of marketing communication and opportunities for better licensing and possible brand extensions, enhancing the likelihood of a larger market share and subsequently increasing the financial value of both the brand and the company (Farquhar 1989; Aaker 1991; Cobb-Walgren et al. 1995; Lassar et al. 1995; Cooper 1998; Keller 2001, 2003; Campbell 2002; Ambler 2003; Hoeffler and Keller 2003; Leone et al. 2006). The importance of brand equity to a company's competitive advantage has led some scholars to suggest that creating and enhancing brand equity should be part of corporate level strategic planning.

Notwithstanding, some scholars, such as Ehrenberg and his followers hold somewhat contrary views on the importance of brand equity.

Within the literature and contemporary business discourse, there is a degree of confusion in the terms "brand" and "brand equity". They are two separate concepts with related but different meanings. The definition of "brand" to date has not reached any widespread agreement, and different experts and scholars have their own definitions of a brand. The concept of brand equity, similarly, has been defined in a number of ways and there is still no consensus on the meaning of brand equity or, more essentially, what constitutes brand equity and it measurement. Scholars and practitioners generally agree that brand equity is a complex, broad and multi-dimensional concept, but one which essentially refers to the market power or value which attaches to, or accrues from, a brand. Brand equity and its measurements can be broadly viewed from two perspectives: namely, consumer-based or financial (Keller 1993; Cobb-Walgren et al. 1995; Lassar et al. 1995; Biel 1997; Ailawadi et al. 2003; Pappu et al. 2005; Christodoulides and de Chernatony 2010; Ruževičiūtė and Ruževičius 2010). Taking Keller and Lehmann's (2003) Brand Value Chain (BVC) model as the framework, a consumer-based perspective, or consumer-based brand equity (CBBE), emphasises the value of a brand to the consumer, from the perspective of the customer mindset. The Customer Mindset stage in the BVC model, is the source of brand equity and the relating measures include awareness, associations, attitudes, attachment and activity, and, eventually the potential increase in market share which is attributable to the brand. It focuses on the impact of the brand on consumers' behavioural intentions, willingness to pay a premium price and the resultant profitability of a brand. In this sense, the value (or equity) of a brand is indicated by its ability to materially influence the choice behaviour of buyers or consumers. These behavioural terms are the first outcome of CBBE and correspond to the Brand Performance stage in Keller and Lehmann's (2003) BVC model

(the strength of the brand on the market place). A financial perspective or firm-based brand equity (FBBE), on the other hand, emphasises the value of a brand to a firm in measurable, financial terms, or the financial value of the brand equity generated for the firm (Christodoulides and de Chernatony 2010). This is the final outcome of CBBE which is the resulting strength of the brand in the market place (the Brand Performance stage in the BVC model) and corresponds to the Shareholder Values stage in Keller and Lehnmann's (2003) BVC model. Scholars and researchers typically tend to focus on just one of these two dimensions. Similar to Keller and Lehmann's (2003) views on CBBE and FBBE, Ailawadi et al. (2003) consider that the consumer- and firm-based constructs of brand equity are linked, because the firm-based outcomes are the result of consumer-based brand effects. In other words, a brand can only be considered to have financial equity if it contributes significantly to consumers' choice, and subsequent buying behaviours. That is, the strength of brand equity lies in the consumers' mind (Keller 2003). In reality, both CBBE and FBBE are simply different lenses of brand equity, and a variety of studies indicate that they are linked and should be treated as complementary and equally important. This is the position adopted in this study.

Scholars have conceptualised brand equity models and suggested measures for further research in order to provide management and practitioners with a better understanding of how to manage the brand and brand equity as well as devise marketing strategies more effectively. Aaker (1991) and Keller (1993) first conceptualised brand equity and are regarded as the most influential scholars in the field (Campbell 2002; Washburn and Plank 2002; Anselmsson et al. 2007). Subsequent theoretical and empirical studies drawing on their arguments have enriched our understanding of the different dimensions and measurements of brand equity. Notwithstanding, while conceptually and empirically extensive research has been conducted on brand equity in the last several decades, to date,

the available literature on the topic is arguably fragmented and inconclusive (Buil et al. 2013). Thus there is yet no consensus on what and how the subject should be measured (Tolba and Hassan 2009) and the relationships among the dimensions of brand equity remain unclear (Aaker 1991), while only few empirical studies have examined the interrelationships of the brand equity dimensions (Buil et al. 2013).

In addition, while it is claimed that the conceptualised brand equity models can be equally applied to both consumer products and services, some scholars have argued that branding is more important for services than for goods (Onkvisit and Shaw 1989; Bharadwaj et al. 1993; Dibb and Simkin 1993; Turley and Moore 1995; Berry 2000; Mourad et al. 2011). Notwithstanding, a review of the extant literature reveals that the lion's share of brand equity research has been conducted in the consumer goods context and that there is a relative paucity of published empirical research in the services sector, which is even more limited in the higher education sub-sector. In view of the fact that, around the world, higher education has been facing an increasingly competitive environment in the recent years, there is a growing recognition of, and support from, researchers for the application of branding concepts to higher education (Chapleo 2005, 2007, 2010, 2011; Temple 2006, 2011; Hemsley-Brown and Goonawardana 2007; Judson et al. 2009; Wæraas and Solbakk 2009; Durkin et al 2012; Natale and Doran 2012; Mourad 2013; Williams and Omar 2013). However, the suitability of the application of branding or brand equity from the business sector to the context of higher education remains unclear and debated (Jevons 2006; Temple 2006; Wæraas & Solbakk 2009; Chapleo 2011). A further issue in measuring brand equity in higher education is that brand equity measures as suggested by various researchers typically require financial and marketing data which are commonly not readily available to higher education providers, as is the case in the Hong Kong continuing education (CE hereafter) industry (the locus of the current study).

The importance of building a strong brand with positive brand equity has been widely recognised and supported by many scholars and practitioners, however, the importance of brand equity in higher education, and in particular in the Hong Kong CE industry, has not been empirically studied to date. Furthermore, there is a general lack of empirical studies exploring the interrelationships among the key dimensions of brand equity, such as brand awareness, brand associations, perceived quality and brand loyalty as well as their impacts on customers' behavioural intentions and willingness to pay a premium price.

Against this background, it is important to examine empirically if brand equity exists in the CE industry, how the dimensions of brand equity are interrelated and the causal ordering of these relationships, and which dimensions of brand equity have significant impacts on consumers' behavioural intentions. It is generally recognised that consumers' behavioural intentions have positive impacts on a company's financial performance, such as market share, price premiums and profitability (Keller 2003; Keller and Lehmann 2003). To address the above knowledge gaps, the conceptualisation of this study adopted two broad objectives. The first was to measure the financially-based brand equity of the continuing education service industry in Hong Kong. This objective reflects the financial perspective of brand equity. The second objective was to develop a customer-based brand equity model to examine and measure the causal interrelationships among the dimensions of consumer-based brand equity and predict their impacts on customers' behavioural intentions and willingness to pay a premium price. This broadly reflects the marketing perspective of brand equity.

1.2   Research problem

Following from the widespread recognition of the importance and potential contributions of brand equity, both behavioural and financial, the literature further indicates that firms need to measure brand equity in order to improve their marketing credibility and productivity for stakeholders, and to justify their marketing expenditures. Yet understanding and measuring only the financial metrics of brand equity is inadequate; it is equally important to understand the causal interrelationships among brand equity dimensions and their impacts on customers' behaviour in order to make sensible and effective suggestions on marketing and branding strategies. Thus, brands only have equity if they influence, or change the behaviour of buyers or consumers.

Scholars and researchers, whether their focus is primarily on CBBE or FBBE, have suggested various brand equity measures to help understand these two constructs. Several measures of brand equity have been proposed, but there is still no consensus on how it should be measured; nor a single comprehensive measure of brand equity. Indeed, many scholars suggest that no single measure can adequately account for the multidimensional nature of brand equity (Keller 1993; Cobb-Walgren et al. 1995; Feldwick 1996; Christodoulides and de Chernatony 2010). Furthermore, the causal interrelationships among the dimensions of brand equity and their impacts on customers' behavioural intentions remain unclear and few empirical studies have examined this subject (Buil et al. 2013). Understanding the relationships between brand equity and its impact on customers' behavioural intentions will ultimately contribute to improved market share and profitability of CE institutions.

While much discussion of brand equity in the public media focuses on the financial value of global brands, it is argued that many brand equity measures with an FBBE focus do not

assist the firm to understand the customer mindset, the fundamental source of brand equity. This mindset influences the outcome of brand equity, which is the brand's value. Moreover, many FBBE measures employ complex financial and statistical techniques that are difficult for marketers and non-accountants to comprehend. Many FBBE measures also require commercial-in-confidence financial and marketing data, such as scanner data, consumer reports and share prices. Furthermore, acquiring such data is often not technically feasible, such as is the case in the Hong Kong CE industry. Hong Kong CE institutions generally have limited resources and are unable to hire consultancy firms, such as Interbrand or Young and Rubicam, to value their brand equity. Furthermore, there is often very little publicly available financial and marketing data that would be needed in order to undertake brand equity valuation (Simon and Sullivan 1993). On the other hand, measuring only CBBE is unlikely to produce a rigorous and objective financial value of a brand.

It is further argued that the concept of brand equity can be equally applied in both goods and services contexts, however, there is a relative paucity of published empirical research in the services sector, and this is even more limited in the higher education sub-sector. With the rapid pace of technological and social changes in recent decades, CE institutions are today facing more severe competition than the traditional universities which have long profited from a "captive" market of school leavers, regulated fees and Government funding. Further, most of the CE institutions in Hong Kong are self-financing and have offered comparatively homogeneous, consumer-oriented programs and services with little meaningful differentiation. As a result, severe competition is increasingly evident in the industry and thus there is an urgent search for effective branding management strategies which might increase differentiation and consequent competitive advantages.

1.3 Research objectives and research questions

In response to the above issues and the knowledge gaps identified in the literature, the purpose of this study involves two principal issues, firstly, to measure the financially-based brand equity of the CE industry in Hong Kong, and secondly, to develop an integrated model to examine and measure the causal interrelationships among the "antecedents" or "sources" of consumer-based brand equity and the "consequences" of customer brand equity in terms of customers' behavioural intentions and willingness to pay a premium price. Thus the broad objectives of the study could be summarised as focusing on, firstly, the measurement and, secondly, the modelling of brand equity, as suggested by the title of this thesis.

The results of the study should provide important information in advancing our understanding of brand equity in the higher education services context and helping the management and practitioners of Hong Kong CE institutions in their brand management strategies. More broadly, the study should provide important insights into the management of brand equity in higher education, service industries generally, and beyond.

The objectives of the study outlined above are important because they respond to identified knowledge gap in the literature and that they will contribute to developing a methodology to measure the value of brand equity and to examine the interrelationships among the brand equity dimensions and measure their impacts on customers' behavioural intentions, a topic area that has been recognised as increasingly important. The following are the specific research questions:

Q1. What is the brand equity value for the Hong Kong CE industry and how can it be estimated/ calculated?

Q2. For the market leader of the Hong Kong CE industry, how can its BE be calculated and how much is its BE value?

Q3. Using the market leader of the Hong Kong CE industry as an example, what are the significant causal interrelationships among the constituent dimensions of brand equity?

Q4. For the market leader of the Hong Kong continuing education industry, what are the significant relationships among the dimensions of brand equity to consumers' behavioural intentions and willingness to pay a premium price?

1.4   Conceptual framework

The study aims to fill the previously discussed knowledge gaps by proposing a brand equity model to capture and measure both consumer and financial constructs, and thus provide a more comprehensive understanding about brand equity, its antecedents and consequences, as well the financial value of brand equity, in which both financial and marketing professionals are interested. The study draws on Longman-Moran's brand valuation model, which originates from Moran (1993, 1994), (hereinafter cited as the Moran model), in calculating the value of brand equity and the model of the causal links between the "sources" and 'consequences" of brand equity is adapted from the work of Aaker (1991) and Keller's (1993, 2003) CBBE framework. The study is predicated on the use of survey data and readily available internal financial and marketing data, where comprehensive marketing and financial data on competitors are commonly lacking. The brand equity in the study is measured at the corporate brand level.

1.5   Contributions of study

The study is a thesis submitted for the degree of Doctor of Business Administration, for which the study is expected to make a distinctive contribution to the improvement of

professional practice or policy. This study aims to provide a worthwhile contribution to marketing practice and the literature in branding in the services context of continuing education in several ways. First, the study was a first attempt to propose and operationalise a model, developed by Moran (1993, 1994), to measure financial-based brand equity of the Hong Kong continuing education industry, and of individual CE institutions, that can be operationalised by the institutions, at modest cost, in a local context by using a single survey and the organisation's internal data. The Moran (1993, 1994) brand equity model has not been empirically tested in the literature and the current study was the first attempt, of which the author is aware, to operationalise their model of brand equity valuation in the context of the Hong Kong CE industry.

Second, while various brand equity valuations methods available in the literature have been discussed, there exists a continuing knowledge gap in that measurement of brand equity cannot be easily applied or aggregated for an industry, as a whole, especially when the necessary raw data and information required for calculating/ measuring of a brand are not readily available at the organisation or industry level. The study was the first attempt to develop a financial brand equity model for the Hong Kong CE industry to estimate the revenue streams of the industry and of individual firms' brand equity, which can be attributed to an industry and each of its key competitor organisations. In addition, the results of the financial brand equity calculations of the study can be easily understood by management and accounting and marketing professionals.

Third, the review of the extant literature revealed a paucity of empirical research on brand equity in the services sector, and this is even more limited in the higher education sub-sector. Information concerning brand equity in the Hong Kong continuing education context is nearly non-existent, to be best of the author's knowledge, this is the only study

that has attempted to contribute to our understanding of the existence of brand equity in the CE services context. The study aims to provide a worthwhile contribution to the marketing practice and literature in branding in the services context of continuing education.

Fourth, the study represents a first attempt to adapt Aaker (1991) and Keller's (1993, 2003) conceptualised brand equity models to develop a multi-dimensional model of customer-based brand equity for the Hong Kong continuing education industry. The results of the study should provide a customer-based brand equity model with high levels of reliability and validity, as well as overall model fit with good predictive performance. The results support a four-dimensional customer-based brand equity model with statistically significant power in predicting customers' willingness to enrol a CE programme, to recommend a CE institution to others and to pay a premium price. Additionally, the results were to provide further insights into Aaker (1991) and Keller's (2009) suggestions that a causal ordering and interrelationships exist among the dimensions of brand equity. The results demonstrate causal relationships among the dimensions or "sources" of brand equity and its behavioural consequences. As a consequence, based on the research findings, practitioners should be able to devise strategies to enhance brand equity and to allocate marketing resources and investments more effectively and efficiently to capitalise on their brand equity.

In conclusion, the results of the study can help practitioners not only to analyse the value of their brands as well as their competitors, but also to develop their marketing strategies and marketing communications plans, and in building and managing their brands more effectively and profitably. The measures developed in the current study can also be used for longitudinal brand health checks and to evaluate the effectiveness of advertising and

branding campaigns and events. In this way, the current study can be seen to make a worthwhile advance in marketing management and practice in the CE industry.

1.6   Thesis structure

The thesis consists of six chapters. This chapter has presented the background of the research topic, outlined the research problem, objectives and questions, and the conceptual framework, and discussed the study's contributions. Chapter 2 reviews the extant brand equity literature, including definitions of brand and brand equity, and the conceptualisations of brand equity and brand equity measures, criticisms of brand equity concept, accounting views on brand valuation, and branding in higher education. Following the review of financial brand valuation methods and accounting views on brand valuation, the proposed financial brand equity model for the study is discussed. Chapter 3 discusses the gaps in current knowledge, identifies the research objectives, discusses the rationale for studying Hong Kong continuing education industry, and formulates the research model, research questions and hypotheses of the customer-based brand equity model for the study. Chapter 4 presents the research methodology. The results of the study, including the proposed financial brand equity and customer-based brand equity models, are presented in Chapter 5. Finally, Chapter 6 discusses the results and contributions of the study, implications for practitioners, together with the limitations of the study, directions for future research, and conclusions from this research.

Chapter 2 Literature review

This chapter reviews the concept and definitions of brand equity, then discusses the major perspectives and conceptualisations of brand equity and brand equity valuation. Current available brand valuation methods and accounting views on brand valuation will be discussed next. The gap in knowledge of brand equity valuation and financial brand valuation for industries which lack comprehensive publically available market and competitive data is identified and addressed by a proposed brand equity research model that covers both consumer behaviour and financial perspectives.

2.1 Brand equity and brand valuation

2.1.1 The importance of brand equity and brand valuation

The study of brand management has attracted great interest from not only marketing managers and academics, but also scholars from a wide variety of disciplines, such as psychology, sociology, anthropology, economics and strategy. While the first published theory of brands was presented by Gardner and Levy in 1955 (de Chernatony 1998), the concept of brand equity emerged and has drawn research attention only since the 1980s due, in part, to the large increase in the numbers of company acquisitions and takeovers. The branding literature has increased markedly since the mid-1980s and brand equity became an important marketing issue in the 1990s (Farquhar 1989; Aaker 1991; Aaker and Biel 1993; Keller 1993; Cobb-Walgren et al. 1995; de Chernatony 1998; Ambler 2003; Myers 2003). The volume of published research indicates that the concept of brand equity has played a central role in marketing discourse, research and practice from the 1990s up to the present time (Farquhar 1989; Aaker 1991, 1996a, 2003, 2004; Low and Fullerton 1994; Feldwick 1996; de Chernatony 1998; Keller 2001, 2008; Bedbury 2002; Washburn and

Plank 2002; Ailawadi et al. 2003; Ataman and Ü lengin 2003; Hoeffler and Keller 2003; Tolba and Hassan, 2009; Christodoulides and de Chernatony 2010; Balaji 2011; Mourad et al. 2011), with companies seeking a competitive advantage by increased investment in brand development and better management of brand equity (del R ío et al. 2001). Today, the importance of brand equity is arguably almost universally recognised among marketing practitioners and scholars.

Recent technological advances have led to rapid changes in the marketing environment, and successful brand building is recognised as an effective way to cope with a changing business environment (Aaker 1991; Keller 1993; Pappu et al. 2005; Balaji 2011). It is regarded as an important topic in both academic research and in marketing practice because it is widely recognised that building a strong brand can create a competitive advantage for consumer products and services (Lassar et al. 1995, Balaji 2011). However, brand equity management is not straightforward. Companies are now becoming more aware that it is quite difficult to differentiate their products or services in the market simply through setting a pricing strategy that they believe their competitors cannot follow. Rather, positive brand equity is seen as the key to differentiating one's market position (Temporal 2002). Porter's (1985) famous competitive strategic model recommends that companies should use either a low-cost or a differentiation strategy to achieve a sustainable competitive advantage. Building and managing strong brand equity undoubtedly creates differentiation (Aaker 1991; de Chernatony 1991; Keller 1993, 2003; de Chernatony and McDonald 2003; Hoeffler and Keller 2003) and it can be a powerful approach (Pappu et al. 2005). A brand with strong brand equity can create a number of competitive advantages for the company (Farquhar 1989; Aaker 1991; Cooper 1998; Srivastava et al. 1998; Keller 2001; Campbell 2002; Ambler 2003; Hoeffler and Keller 2003; Leone et al. 2006). Such advantages include: greater customer loyalty; less vulnerability to competitive marketing

actions or marketing crises; a larger profit margin or price premium; greater price insensitivity; greater trade leverage; increase marketing communication effectiveness or reduced promotion expenses; licensing and brand extension opportunities; and significant financial value to its owners.

Having established the undoubted and substantial benefits of high brand equity, it follows that brand equity needs to be, firstly, measured and, secondly, actively managed. These issues are the focus of the current research. A number of advantages or benefits can accrue to organisations that undertake to value their brands and to manage their brand equity (Murphy 1990a; Aaker 1991; Guilding and Pike 1991; Keller 1993, 2008; Yoo and Donthu 2001; Ambler 2003). For example, it assists in planning the marketing strategy and tactical decisions; to enable brand extension; to evaluate the effectiveness of marketing communication; to track a brand's health compared with that of competitors; to give a financial value to the brand in the firm's balance sheet; to calculate a financial value for the purposes of mergers and acquisitions; to attract investment and fund raising; to enhance the possibility of brand licensing; to assist companies as a management tool; to be (potentially) logically and legitimately reported as an item in the balance sheet for taxation purposes; and lastly, to provide information to potential stakeholders, such as analysts, bankers, insurers, government bodies, current and potential employees, current and potential customers, suppliers, distributors and retailers. Ambler (2003) noted the growing importance of measuring brand equity in the United States, citing surveys of blue-chip marketing companies conducted by the Washington-based Marketing Leadership Council. The proportion of companies measuring brand equity rose from 43% in 1994 to 48% in 2001.

The increasing recognition of the importance of brand equity among both the academic and business communities is reflected in the increasing numbers of public discussions which debate how to conduct brand and/or brand equity valuation. While there has been considerable public discussion of the topic, nevertheless, the debate continues as to how to allocate a financial value to brand. Reflecting a practitioner's perspective, Schultz (2006) has suggested that it is not wise "to use backward-looking accounting methods to determine the value of forward-looking brand returns…..Balance sheets, no matter how it is sophisticated, tell you nothing about the value of the business" (Schultz 2006, p.7). However, to date, marketers and finance people have yet to agree on a common language or methodology of brand valuation, and Schultz (2006) advocated that marketers should aim to understand how finance people view brands and branding, including important issues like ROA and ROI, because brand valuation requires both marketing and financial perspectives.

In contrast to the marketing view of brand valuation, and reflecting on the findings of Brand Finance's Global Intangible Study 2006, David Haigh of Brand Finance views brand as one of the key intangibles in today's businesses, as it represents an average of 20% of the intangible value of the listed companies on the world's 25 major stock markets (Simms 2006). Furthermore, the Business Week/Interbrand 2006 survey of best global brands found that 66% of Coca-Cola Company's share market value comes from the Coca-Cola brand, (based on their measurement methodology), and that the corresponding figure for McDonald's is 67% (Simms 2006). Ambler (2000) (cited from Jones (2005) article) found that brand value accounts for an average of 50% of market value for major fast-moving consumer goods and multi-brand firms and even accounts for 81 % for Nestlé. Jones (2005) quotes a survey noted in Fortune magazine of the top 3,500 companies in the USA, which found that intangible assets represented 72% of market value compared with

only 5% in 1978. From the above examples, it is evident that the importance of brand value to the overall company value has been increasing. Concurrently, the ratio of intangible to tangible assets has increased dramatically in the past 50 years (Simms 2006), and so managing brands and brand equity is undoubtedly becoming a growing and legitimate concern for both the academic and business communities in today's changing business environment.

The importance of building and managing brand equity in order to sustain a company's comparative advantage has led some scholars to suggest that brand equity management should be part of corporate level strategic planning and that today's companies should take a more active role in developing and managing brand equity (Temporal 2002). Indeed, Aaker (2004) argues that better brand portfolio management could support and enable better business strategy. In this vein, many companies are now recognising the importance of brands and brand equity by replacing corporate visions and missions with brand visions and missions (Temporal 2002).

The importance of brand equity and brand valuation has been discussed and the definitions of brand and brand equity will be presented in the next section.

2.1.2   Definitions of brand and brand equity

Given the widespread recognition of the importance of brand equity, it is important to clarify issues of definition. Many academics are seemingly confused when using the terms "brand" or "brand equity", and some add to the ambiguity by describing the two different, but closely related, concepts simply as "brand" and the same construct (Ambler 2003; Raggio and Leone 2007). The two concepts have distinct meanings; for example,

consumers buy the brand and not its company's intangible asset, the brand equity (Ambler 2003).

Though the concept of brand evolved in the eighteenth century, the definitions of "(the) brand" proposed in the literature by scholars and experts, however, have not reached any agreement. As might be expected, different experts have their own definitions of a brand (Kapferer 2008). The American Marketing Association definition of a brand is one of the most cited. A brand is a "name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers" (AMA online dictionary, AMA 2012). Perhaps one of the earliest definitions on brand and also one of the most cited and widely accepted (Krishnan and Hartline 2001) is that of Farquhar (1989) who defined a brand "is a name, symbol, design, or mark that enhances the value of a product beyond its functional purpose" (Farquhar 1989, p.25); he defined brand equity as the "added value with which a brand endows a product (Farquhar 1989, p.24). He stressed that the brand can provide added value to the consumer, the trade and the firm (Farquhar 1989). His definitions of brand and brand equity have had an impact on many authors' definitions on brand equity (Myers 2003; Pappu et al. 2005).

The concept of brand equity, similarly, has been described or defined in various ways, and there is still no consensus as to the meaning of brand equity in the literature (Park and Srinivasan 1994, Pappu et al. 2002). Importantly, from the perspective of this study, this has led to different sets of brand equity measurements (Park and Srinivasan 1994; Yoo and Donthu 2001; de Chernatony and McDonlad 2003; Jones 2005; Kapferer 2008; Christodoulides and de Chernatony 2010; Srivastava 2012). Nevertheless, Park and Srinivasan (1994), Myers (2003), and Pappu et al. (2005) noted that some researchers' definitions of brand equity are fairly consistent with Farquhar's (1989) definition,

including Srinivasan (1979), Leuthesser (1988), Aaker (1991), Srivastava and Shocker (1991), Kamakura and Russell (1993), Keller (1993), Simon and Sullivan (1993) and Yoo and Donthu (2001).

On the other hand, de Chernatony and McDonald (2003) argue that the concept of brand equity has numerous interpretations and different experts have adopted contrasting perspectives in defining brand equity. For example, similar to Farquhar (1989), Simon and Sullivan (1993) have defined brand equity from a financial perspective. They define brand equity as "the incremental cash flows which accrue to branded products over and above the cash flows which would result from the sale of unbranded products" (Simon and Sullivan 1993, p.29). In contrast, Aaker and Biel (1993) adopted a consumer-oriented value-added perspective in defining brand equity thus: "a consumer perceives a brand's equity as the value added to the functional product or service by associating it with the brand name. A company may view it as the future discounted value of the profit stream that can be attributed to the price premium or enhanced loyalty generated by the brand name. From a managerial perspective, it is "a set of assets including brand awareness, brand loyalty, perceived quality and brand associations that are attached to a brand name or symbol" (Aaker and Biel 1993, p.2) and these are the four most important dimensions of consumer-based brand equity (Pappu et al.2005). Keller (1993) has defined brand equity from a consumer behavioural perspective (see Keller's (1993) brand equity definition below), whereas Srivastava and Shocker (1991) have defined brand equity from a managerial perspective. De Chernatony and McDonald (2003) endorse the latter definition of brand equity in that it is a widely applied definition and also note that it was endorsed by the Marketing Science Institute. Srivastava and Shocker (1991) define brand equity as "a set of associations and behaviours on the part of a brand's consumers, channel members and parent corporation that enables a brand to earn greater volume or greater margins than it

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could without a brand name, and in addition, provides a strong, sustainable and differential advantage" (as cited in de Chernatony and McDonald (2003), p.437).

Two of the most influential scholars in the study of the brand equity concept are David Aaker and Kevin Lane Keller (Campbell 2002; Washburn and Plank 2002; Anselmsson et al. 2007; Balaji 2011). Their oft-quoted models have their foundations in cognitive psychology and focus on consumers' cognitive processes (Aaker 1991; Keller 1993; del Río et al. 2001; Christodoulides and de Chernatony 2010), and provide conceptual frameworks for defining and understanding the concept of brand equity from a consumer perspective. Their models and perspectives of brand equity continue to exert a very strong influence on current research and publications. Recent published research adopting the conceptualised brand equity frameworks proposed by Aaker (1991) and Keller (1993) includes the work of Cobb-Walgren et al. (1995), Sinha and Lesczyzc (2000), Yoo et al. (2000), Gladden et al. (2001), Yoo and Donthu (2001, 2002), Washburn and Plank (2002), Pappu et al. (2005), Pappu and Quester (2006), Balaji (2011) and Buil et al. (2013).

Aaker (1991) has defined brand equity as "a set of brand assets and liabilities linked to a brand, its name and symbol, that add to or subtract from the value provided by a product or service to a firm and or to that firm's customers" (Aaker 1991, p.15), referring to a brand's elements – both positive and negative – that consumers associate with a product or service (Campbell 2002). Aaker (1991) proposed a brand equity model with four major consumer-related constructs or components of brand equity: brand awareness, brand associations, perceived quality and brand loyalty. In addition, other proprietary brand assets, such as patents and trademarks, make up a fifth dimension of the model. Thus, companies are responsible for managing brand assets (and liabilities) to increase the value of the product or service for the firm and the customer. Aaker's (1991) definition of brand equity covers

both organisational and consumer perspectives. On closer examination, however, the four major dimensions of his brand equity model, namely, brand awareness, brand associations, perceived quality and brand loyalty (except the proprietary brand assets) are considered from the consumer perspective. While Aaker's (1991) definition of brand equity is the most comprehensive (Motameni and Shakrokhi 1998; Pappu et al. 2005), his conceptualised brand equity model is therefore focussed primarily on consumer perceptions and, as such, lacks any reference to the accounting or financial perspectives of brand equity (Motameni and Shahrokhi 1998).

Keller viewed brand equity from the consumer perspective and he defined it as "the differential effect of brand knowledge on consumer response to the marketing of the brand" (Keller 1993, p.8). In Keller's consumer-based brand equity (CBBE) framework, positive brand equity occurs only when the consumer has favourable, strong and unique brand associations in memory in response to the marketing effects attributed to a brand (Keller 1993). Individual consumers perceive that value is added to (or subtracted from) the brand when they associate more (or less) favourably with an element of the marketing mix than they do with the same marketing mix element when it refers to a fictitious product or service (Keller 1993, p.17; Campbell 2002). Keller's consumer-based brand equity model provides a framework in understanding brand equity strictly from a consumer psychology perspective (Christodoulides and de Chernatony 2010). In Keller's CBBE model, brand equity is based on a consumer's knowledge of the brand that is conceptualised in the consumer's memory by a variety of associations. In turn, the two major constructs of brand knowledge are brand awareness and brand image or associations (Keller 1993, 2008). Since different consumers will have different levels of brand knowledge; brand awareness and brand associations, and will react differently to the marketing mix elements of a brand,

it is fundamentally important to understand the sources of brand equity for devising branding strategies and managing branding.

According to Christodoulides and de Chernatony (2010), the conceptualisation of CBBE encompasses two research streams: cognitive psychology and information economics. As described above, Aaker and Keller are representatives of the first stream of CBBE. Erdem and Swait (1998) can be regarded as representing the second stream. Their model is grounded in signalling theory, which suggests that the brand name can act as a signal to consumers about the value of a brand's past and present marketing activities in which the market information is imperfect and asymmetrical (Erdem and Swait 1998).

Although brand equity has drawn considerable attention and has been widely discussed in the marketing literature, there is still no clear consensus on the meaning and definition of brand equity thus no clear consensus on its measurement. However, it has been viewed and generally accepted that brand equity can be broadly viewed from two major perspectives, as discussed in the next section. In addition to these two major perspectives, other interpretations of the meaning and classifications of brand equity will be discussed in the next section.

2.1.3   Major perspectives of brand equity

From the previous discussion, it is evident that the definitions of brand equity vary considerably in the literature. When examining the range of definitions, there are, however, two distinct perspectives; namely, financial and consumer-based (Srivastava and Shocker 1991; Keller 1993; Cobb-Walgren et al. 1995; Lassar et al. 1995; Biel 1997; Ailawadi et al. 2003; Jones 2005; Pappu et al. 2005; Raggio and Leone 2007; Kapferer 2008; Tolba and Hassan 2009; Christodoulides and de Chernatony 2010; Ruževičiūtė and Ruževičius 2010,

Balaji 2011; Buil et al. 2013). Financial-based brand equity (FBBE) views brands as financial assets and emphasises the value of a brand to a firm or the financial value of the brand equity generated for the firm (Christodoulides and de Chernatony 2010). At the same time, however, the financial value of the brand equity is driven by the value to consumers (Christodoulides and de Chernatony 2010; Buil et al. 2013). Consumer-based brand equity (CBBE) emphasises the value of a brand to the consumer and, consequently, the potential increase in sales revenue, market share and profitability attributable to the brand (Christodoulides and de Chernatony 2010).

The interrelationship between the financial and consumer-based views of brand equity has been examined by Raggio and Leone (2007) who developed a conceptualised model of brand equity in which they view brand equity as a construct that represents what the brand means to the consumer. Brand value, on the other hand, is a distinct construct that represents what the brand means to the company. Indeed, they view brand equity as only one of the factors/ drivers contributing to brand value. Thus, brand value is a wider construct which subsumes brand equity. Clearly, they view the concept of brand equity differently from the previously discussed scholars. (Their model will be discussed in detail in Section 2.2.5.)

Other classifications of brand equity can be seen as broadly consistent with either of these two FBBE and CBBE perspectives. For example, Farquhar (1989) has discussed brand equity from three perspectives of added value. He suggests the brand can provide added value to the firm, the trade or the consumer. From the firm's perspective, brand equity can be viewed as the additional cash flow which results from associating a brand with the underlying product or service. This reflects an FBBE perspective. From the trade's perspective, it can be considered to provide a platform for brand extension in that the

company can leverage the existing brand awareness and distribution. It also helps to lower the cost of advertising and the perceived risk and to gain easier acceptance from the consumer. In this sense, it covers both FBBE and CBBE approaches. From the consumer's perspective, it can help to increase the consumer's attitude strength to a product associated with a brand.

Similarly, Feldwick (1996) has suggested a threefold classification of brand equity. Feldwick's first category – a brand's value to a firm as a separable asset – adopts an FBBE perspective; similarly, his second and third categories – a measure of the strength of consumers' attachment to a brand, and consumers' associations with and beliefs about a brand – clearly fall under a CBBE perspective (Christodoulides and de Chernatony 2010).

Furthermore, Jones (2005) suggests the existing brand equity literature can be broadly classified into three types. Firstly, mental brand equity is related to the impact of a brand on the consumers' mind. Secondly, behavioural brand equity is the behavioural response of the consumers toward a brand and finally, financial brand equity is the financial impact of a brand in relation to profit, price-to-earnings ratio, etc. From Jones's (2005) brand equity classifications, the first two categories are related to consumers' mental and behavioural responses toward a brand, clearly reflecting a consumer based approach.

Keller (1993) has argued that both the financial and consumer-based perspectives are the key to understanding brand equity. A financial perspective can help with estimating the value of a brand for accounting purposes, while a consumer-based perspective can improve a brand's marketing productivity. (This is the perspective adopted in the current study). In his further writing on the subject, it is clear that he pays more attention to the latter. He argues that a firm's most important means for improving marketing productivity is to

understand both the sources of brand equity and brand knowledge (or brand awareness and brand image in Keller's terms) that have been created in consumers' minds through previous marketing campaigns, rather than simply knowing a brand's value. In today's highly competitive market environment, he argues that firms need to maximise the efficiency of their marketing expenditure and devise profitable marketing strategies (Keller 1993), and managing brand equity is crucial to that task. Similarly, other scholars, such as Cobb-Walgren and his co-authors argue in favour of the importance of consumer-based brand equity. They argue that brands can create value to the investor, the manufacturer, the retailer and the consumer. However, brand equity is meaningful only if there is value to the consumer (Cobb-Walgren et al. 1995, p.26).

Ailawadi et al. (2003) have argued that both the consumer and firm-based constructs of brand equity are inextricably linked because firm-based outcomes, for instance revenue, profit, market share, premium prices and incremental volume, are outcomes of consumer-based brand effects, for instance positive image, brand awareness, brand knowledge and loyalty (Ailawadi et al. 2003, p.1). Similarly, Kapferer (2008) takes a similar position to Feldwick's (1996) view who suggests it is important to end the confusion in using the phrase "brand equity" which leads to a number of definitions, conceptualisations, and measurement tools developed by various experts. By clearly separating the usage of the phrase "brand equity" (that includes the brand assets, brand strength and brand value) and using these terms with clear boundaries, the confusion can be eliminated. He states: "brand assets are learnt mental associations and affects. Brand strength is a measure of the present status of the brand: it is mostly behavioural (market share, leadership, loyalty, price premium). Brand value is a projection into the future" (Kapferer 2008, p.15). He argues that the consumer and financial approaches to brand equity are in fact, connected, but from "brand assets" to "brand strength" then to "brand value" is not a direct but a conditional

consequence. He views brand assets as the source of brand equity. Brand strength, in turn, is a brand equity outcome to brand assets. Here Kapferer (2008) takes a similar position to that of Ailawadi et al. (2003) in seeing brand value as reflecting the capacity of brands to generate profits. That is, customer brand equity is an antecedent of financial equity. Lassar et al. (1995) also take a similar position in that they view brand equity from the two major perspectives of financial and customer based. Financial based brand equity measures the outcome of customer-based brand equity and CBBE is the antecedent of FBBE. However, Lassar et al. (1995) view consumer-based brand equity as brand strength. (That is, they define brand strength as meaning brand associations held in the mind of customers.) This corresponds with the meaning of brand assets (and not the brand strength) as defined by Kapferer (2008) above. This apparent disagreement further illustrates Feldwick (1996) and Kapferer's (2008) arguments that different scholars/experts interpret the concept/phrase of brand equity differently which leads to confusion with a number of definitions, concepts and measurement tools. Further, Lassar et al. (1995) consider financial-based brand equity as the brand value which means the ability of a brand to generate future profits, which is in line with Kapferer's (2008) view of FBBE. In order to have a financial value of a brand, a brand has already created assets or value in the consumers' minds (Kapferer 2008).

Consistent with other scholars'/ practitioners' views on the two major perspectives of brand equity, Raggio and Leone (2007) argue that brand equity can be classified into consumer and financial-based perspectives. They propose a framework, which will be discussed in detail in Section 2.2.5, in which they distinguish between brand equity (a consumer-based focus) and brand value (a financial-based focus). However, their suggested relationship between brand equity (consumer based) and brand value (financial-based) is different from the positions suggested by other researchers such as Ailawadi et al. (2003), and Kapferer (2008). Raggio and Leone view brand value as a broader construct

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which subsumes brand equity. In this sense, brand equity is one of the many factors contributing to the brand value (Raggio and Leone 2007).

From the above discussion and also the earlier discussion of the definition of brand equity in Section 2.1.2, it is evident that different scholars and authors have proposed different definitions and interpretations of brand equity, which has also led to different sets of measurements which will be discussed in Sections 2.2 and 2.4. Regardless of whether the above researchers classify brand equity into two- or three-fold perspectives; it is clear that brand equity can be broadly viewed from two major perspectives: consumer-based and financial-based brand equity. In addition, Kapferer's (2008) views help to explain why the concept of brand equity has been recognised for decades yet there is still no consensus on the definitions, concepts and the measurements of the constructs. Kapferer also supports the view that there are two paradigms, or perspectives, in understanding the concept of brand equity and that they are equally important. This study will adopt the prevailing view of two major perspectives of brand equity which are interrelated and equally important, and therefore the present study will propose an integrated methodology which examines both consumer-based brand equity and financial brand valuation.

In short, the concept of brand equity has undoubtedly drawn considerable attention in marketing since it emerged in the late 1980s. Although there are various definitions of brand equity as well as different approaches to brand equity valuation which will be discussed later in the chapter, there is still no broad consensus on the meaning and definition of the construct, as well as how and what it should be measured (Tolba and Hassan 2009). It is perceived by some scholars, such as Feldwick (1996), Raggio and Leone (2007), and Kapferer (2008) that there is confusion in the usage of the phrase brand equity among the scholars/ experts who adopt different perspectives when viewing and in

understanding the concept. From the literature, at least it is generally agreed that brand equity and its measurement can be viewed and examined from two major perspectives, namely consumer and financial-based perspectives, and that they are complementary and causally linked. Thus, consumer-based brand equity is viewed by most authors to lead to financial brand value. Therefore, the proposed brand equity model in this study will incorporate both consumer and financial constructs in proposing a method for calculating brand value and for identifying the drivers of consumer brand equity.

The next section will discuss brand equity conceptualisations.

2.2   Brand equity conceptualisations

Most research into brand equity is based on either or both of the conceptualised models proposed by Aaker (1991) and Keller (1993) (Campbell 2002; Washburn and Plank 2002; Anselmsson et al. 2007; Balaji 2011). This section firstly discusses the components of these two models and their suggested brand equity measures. These models are focused primarily on consumer-based brand equity. Other approaches, such as Keller and Lehmann's (2003) brand value chain model, Jones's (2005) stakeholder model of brand equity; and Raggio and Leone's (2007) model separating brand equity and brand value will be discussed next.

2.2.1   Aaker's (1991) brand equity model

Section 2.1.2 outlined Aaker's (1991) definition of brand equity and the five dimensions of his brand equity model. His conceptualised brand equity model consists of four major consumer-related constructs of brand equity: namely, brand awareness, brand associations, perceived quality and brand loyalty, together with other proprietary brand assets, such as patents and trademarks, as the fifth dimension of his brand equity model. Aaker (1991)

argues that brand equity can provide value to the consumers by enhancing their interpretation and processing of information about a brand, and confidence in their purchase decision. Positive brand equity also provides value for the company by increasing the efficiency and effectiveness of marketing programs and brand extensions, and enhancing premium price and profit, trade leverage, competitive advantages and loyalty (Aaker 1991).

As proposed by Aaker (1996a), the different dimensions of brand equity can be evaluated by the "Brand Equity Ten" measures (Aaker 1996a, p.105):

Loyalty measures

- Price premium

- Satisfaction/loyalty

Perceived quality/leadership measures

- Perceived quality

- Leadership

Associations/differentiation measures

- Perceived value

- Brand personality

- Organisational associations

Awareness measures

- Brand awareness

Market behaviour measures

- Market share

- (Relative) Price and distribution indices

In examining this list, it is evident that data for the first eight measures are based on customer perceptions and therefore can be best collected by a survey, which can be expensive, inconvenient and time consuming (Aaker 1996), while Aaker has suggested that data for the last two measures can be easily obtained from internal records. This may be true for consumer products which are frequently purchased and for which market share and performance data are readily available. However, this is not necessarily the case for many organisations, who might need to also use the survey method for these latter two measures as well (as is also the case in the current study).

The following section outlines Keller's (1993) consumer-based brand equity model and suggested brand equity measures. Since both Aaker's (1991) and Keller's (1993) models are the most cited and researched in the literature, comparison of both brand equity models will be discussed later in Section 2.2.2.1. Finally, the discussion of the chosen constructs in the proposed brand equity model of the current study, which draws on Aaker's and Keller's models, will be presented in Section 4.4.1.

2.2.2 Keller's (1993) consumer-based brand equity model

In Keller's (1993) brand equity model (Figure 2–1), the consumer's brand knowledge is seen as the key outcome of the marketing program and the key measure of brand equity. Brand knowledge, in turn, can be partitioned into two components: brand awareness and brand image.
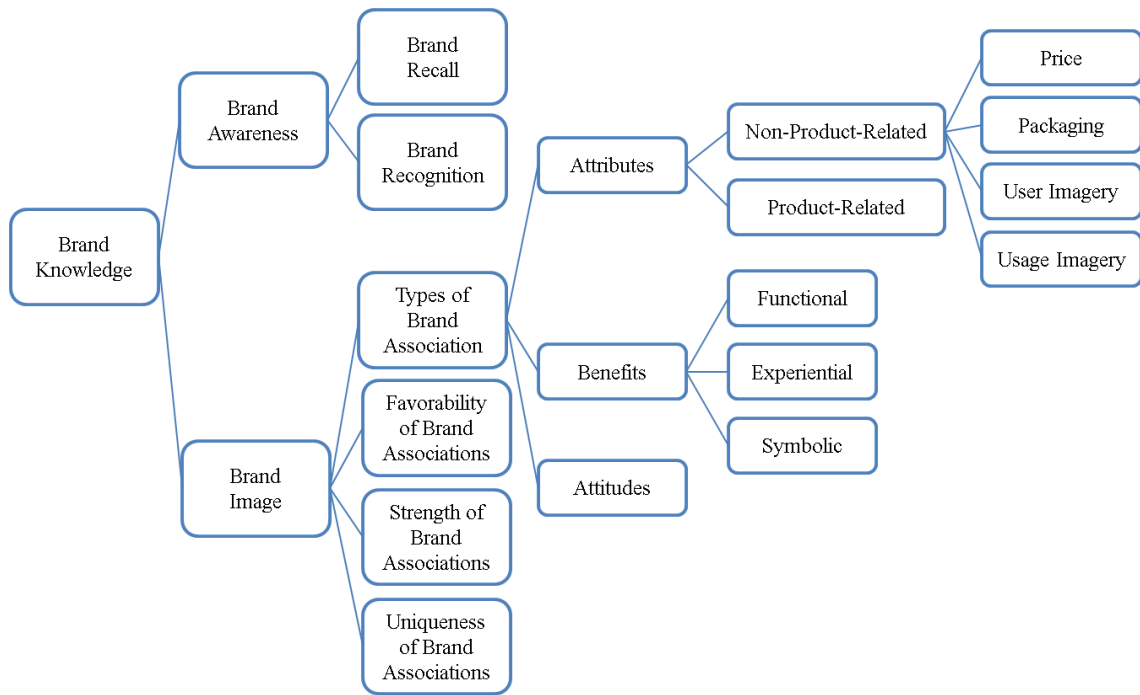
Figure 2-1. Keller's (1993) consumer-based brand equity model
Source: Keller (1993, p.7)

Brand awareness

Brand awareness includes aided or unaided brand recall and recognition. It is a very important component of brand equity as it is a key driver in enhancing the likelihood of a consumer's purchase decision, especially in low-involvement categories (Keller 1993).

Brand image

Keller (1993, p.3) defined brand image as "perceptions about a brand as reflected by the brand associations held in consumer memory". "Brand associations" are seen, in turn, as "the other informational nodes linked to the brand node in memory and contain the meaning of the brand for consumers". Brand attributes, benefits and attitudes are the three major types of brand associations. Positive brand equity means that the consumer's response to the marketing program must be strong, unique and in favour of the brand.

Brand attributes can be either product related or non-product related. Product-related attributes are "the ingredients necessary for performing the product or service function sought by consumers", while non-product-related attributes are "external aspects of the product of service that relate to its purchase or consumption" (Keller 1993, p.4). Price, packaging, user imagery and usage imagery are the four main types of non-product-related attributes.

Benefits fall into three major categories: functional, experiential and symbolic. Functional benefits are the intrinsic advantages of product or service consumption, and are often associated with product-related attributes. Experiential benefits refer to how the consumer feels about using the product or service, and they are also often linked with product-related attributes. Symbolic benefits refer to the extrinsic advantages when buying a product or service, and they are more frequently associated with non-product-related attributes (Keller 1993, p.4).

The third type of brand association, brand attitude, refers to the overall consumer satisfaction with the brand, which, in turn, can be derived from beliefs about product-related attributes, as well as the functional and experiential benefits and non-product-related attributes and symbolic benefits. Brand attitude often has a strong impact on consumer behaviour (Keller 1993).

Measures for Keller's (1993) CBBE model

Keller (2003) has suggested different measures for measuring the sources (the customer mindset) and outcomes (market performance) of brand equity. Both qualitative and quantitative research techniques are applicable to measuring the customer mindset. Qualitative methods include free association, projective techniques, brand personality and

values (measured by open-ended questions). Keller notes, however, that these methods have limitations in that the samples are usually small – so that findings often cannot be generalised to the total population (Keller 1993) – and subjective data examination by different researchers could lead to different interpretations (Keller 2003). Thus, these qualitative methods would not be employed in the current study.

Keller (2003), therefore, has instead advocated the use of quantitative research techniques to measure the customer mindset, because these techniques can better assess the strength, favourability and uniqueness of brand associations. Brand awareness measures include both brand recall (aided and unaided) and recognition. Keller (1993) has suggested that unaided recall more powerfully indicates the strength, favourability and uniqueness of brand awareness. As illustrated in Figure 2–1, brand image is reflected in brand associations, which, in turn, can be classified into performance-related attributes and benefits, such as price, product or service effectiveness and efficiency, and imagery-related attributes and benefits, such as brand personality and value, and user and usage imagery. Free choice, scaling or rating, and ranking can all be used as measurement scales, and brand attitude questions such as purchase intentions (action, target, context, and time) and brand relationships (behavioural loyalty, brand substitutability and brand resonance) should be asked as customer mindset measures (Keller 2003). A range of these measures (or "proxies") was incorporated in the present study, with local adaptation, for measuring the sources (or "drivers") of brand equity and will be further discussed in Chapter 4 (Methodology) and discussed in Section 2.9, in the proposed BE model.

Finally, Keller (2003) suggested ways of measuring the outcome – that is, market performance – of brand equity. These methods can be comparative, such as brand-based comparative approaches, marketing-based comparative approaches and conjoint analysis,

or holistic measures such as residual approaches and valuation approaches – Interbrand's brand valuation method, for example. These measures were not generally available or applicable to measuring brand equity among higher education and continuing education institutions in Hong Kong and so could not be used in this study.

Having discussed the two most prominent and recognised approaches to measuring the consumer behaviour perspective of brand equity (CBBE), namely those of Aaker and Keller, the following section discusses the comparison between Aaker (1991) and Keller's (1993) models and their measurements.

2.2.2.1   Comparison between Aaker (1991) and Keller's (1993) models

As mentioned previously, both David Aaker and Kevin Lane Keller are viewed by some scholars as two of the most influential scholars in the study of the brand equity concept (Campbell 2002; Washburn and Plank 2002; Anselmsson et al. 2007; Balaji 2011). Their oft-quoted conceptualised brand equity models have similarities and differences.

Both Aaker (1991) and Keller (2003) view brand equity as the value that can be added to or subtracted from the brand by consumers and/ or a firm (Aaker only). Whereas Aaker refers to a set of brand assets and liabilities linked to a brand, Keller describes it as the differential effect of brand knowledge on consumers' responses to the same marketing mix element compared with the response to a fictitious product or service. Both Aaker (1991) and Keller (1993) view brand equity from a cognitive psychology perspective and they focus on consumers' cognitive processes. Their models cover both brand awareness and brand associations, while Aaker's (1991) other two brand equity dimensions, that is perceived quality and brand loyalty are also interpreted similarly under Keller's (1993) two of three types of brand association (that is attributes and attitude). Moreover, Aaker (1996b)

and Keller (1993) have different classifications for brand associations. Aaker (1996b) identified four brand association dimensions (product, organisation, person and symbol) and Keller (1993) identified three (attributes, benefits and attitudes) dimensions. However, Aaker's (1991) fifth dimension of brand equity, that is proprietary brand assets, such as patents and trademarks, is not included in Keller's (1993) model. Lastly, Aaker (1991) has defined brand equity by adopting both organisational and consumer perspectives; whereas Keller (1993) employs a consumer behaviour perspective. Both Aaker (1991) and Keller (2003) argue that the brand equity dimensions are interrelated. However, it has been noted that only few studies have empirically examined how the dimensions of brand equity are inter-related (Buil et al. 2013), and thus, this is one of the major objectives of the study.

Regarding the proposed brand equity measurements of the models, most of Aaker's (1996) "brand equity ten" measures as discussed in Section 2.2.1 (with exception of "leadership", "market share", "relative price" and "distribution indices") are similar to the quantitative CBBE measures suggested by Keller (2003) to capture the sources of brand equity, as discussed in the above Section 2.2.2. Aaker's components of "price premium" and "satisfaction/loyalty" resemble Keller's behavioural loyalty measures; Aaker's brand awareness resembles Keller's brand awareness measures; Aaker's "perceived quality" and "perceived value" resemble Keller's "brand association – performance-related attributes"; and Aaker's "brand personality" and "organisational associations" resemble Keller's "brand association – imagery-related attributes". Aaker's component of "leadership" is not a specific component of Keller's suggested CBBE measures.

One of the objectives of the current study is to propose a customer-based brand equity model for the Hong Kong Continuing Education industry to test the causal interrelationships of the dimensions of brand equity and their impacts on customers'

loyalty, behavioural intentions and willingness to pay a higher price. Following the discussion of Donthu and Yoo (2001) and Pappu et al. (2005), Aaker (1991) and Keller's (1993) consumer-based brand equity models commonly consist of four dimensions: brand awareness, brand associations, perceived quality and brand loyalty, which are crucial in driving customers' behavioural intentions (Aaker 1991; Keller 1993, 2003; Donthu and Yoo 2001). The operationalisation of constructs in the proposed customer-based brand equity model of the current study reflects a customer-based brand equity perspective. This is detailed in Chapter 4.4.1, is adapted primarily from Aaker (1991) and Keller's (2003) suggested measures. In particular, two of Aaker's brand equity measures (market share and price premium) were two of the three major components of the brand equity model proposed by Moran (1993, 1994), and will be used in this study as discussed later in Section 2.9.

In the following discussion, a further brand equity model developed by Keller and Lehmann, (2003) who suggest a framework for understanding different meanings and measures of brand equity, is discussed.

2.2.3 Keller and Lehmann's (2003) brand value chain model

Keller and Lehmann's (2003) model of brand equity value incorporates three different stages of brand value creation after the initial marketing program: namely, customer mindset, brand performance and shareholder value (Figure 2–2). As indicated by Keller and Lehmann (2003), there are various stages of brand value development, and different people (such as scholars, practitioners and other stakeholders of the company) are likely to be interested in different aspects of brand value creation throughout the three different stages of the customer mindset, the product market and the financial market stages. For example, the customer mindset stage will primarily interest brand/product managers,

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whereas Chief Marketing Officers (CMOs) and Chief Operating Officers (COOs) and brand/product managers will be more concerned at the product market stage. Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs) will conceivably be more concerned at the financial market stage (Keller and Lehmann 2003). In this sense, the brand value chain can be seen as a longitudinal process. This contrasts with the two previously discussed models of Aaker (1991) and Keller (1993) which were primarily concerned with brand equity as an asset in time; rather than as a dynamic process. Therefore, different brand equity constructs have been developed by various scholars in measuring different dimensions and different stages of the brand (equity) value chain. Clearly, which of these approaches is more relevant will depend on the perspective of the observer/researcher.

Value Stages

Marketing Program Investment	Customer Mindset	Brand Performance	Shareholder Value
• Product	• Awareness	• Price premiums	• Stock price
• Communications	• Associations	• Price elasticities	• P/E ratio
• Trade	• Attitudes	• Market share	• Market cap
• Employee	• Attachment	• Expansion success	
• Other	• Activity	• Cost structure	
		• Profitability	

Multipliers

Program Quality	Marketplace Conditions	Investor Sentiment
• Clarity	• Competitive reactions	• Market dynamics
• Relevance	• Channel support	• Growth potential
• Distinctiveness	• Customer size & profile	• Risk profile
• Consistency		• Brand contributions

Figure 2-2. Keller and Lehmann's (2003) brand value chain measurement
Source: Keller and Lehmann (2003, p.29)

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In Keller and Lehman's (2003) model, brand value creation commences with the firm's marketing activity and communication, which, in turn, affect the customer's mindset and brand knowledge. The customer mindset is a multi-dimensional construct and can be measured by brand awareness, brand associations, brand attitudes, brand attachment and brand activity. This customer mindset about the brand will be transferred to the next stage of the brand value chain, that of brand performance, which can be measured by price premiums, price elasticity, market share, expansion success, cost structure and profitability. The final stage of brand value development is shareholder value, which includes the stock price, price/earnings ratio and overall market capitalisation of the firm (Keller and Lehmann 2003, p.29).

The model also incorporates three different multipliers that affect the progress through these three stages: the (marketing) program quality multiplier, the marketplace conditions multiplier and the investor sentiment multiplier, respectively. The (marketing) program quality multiplier reflects consumers' judgment of a marketing program's quality in terms of clarity, relevance, distinctiveness and consistency. For instance, is the marketing program relevant to consumers? Is it consistent and distinctive? Do consumers clearly understand the marketing program's message? The second multiplier, the marketplace conditions multiplier, will affect or moderate the ability of the customer mindset to provide brand value in the second stage (brand performance). This marketplace multiplier includes competitive reactions, channel support and customer size and profile. For instance, how many customers and what types of customer have been attracted to the brand through the effectiveness of the marketing program? Finally, the investor sentiment multiplier, which includes market dynamics, growth potential, risk profile and brand contributions, affects or moderates how well the brand performance transfers value to the final stage of the brand

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value chain, the shareholder value (Keller and Lehmann 2003). Since these three stages of brand value development have different dimensions and constituent constructs, different brand equity measures should be used to measure each stage of the constructs, as illustrated and discussed below.

Customer mindset measures

The first stage, customer mindset, includes "everything that exists in the minds of customer with respect to a brand" (Keller and Lehmann 2003, p.28). Depending on its quality, the marketing program might produce different outcomes in consumers. Keller and Lehmann (2003) suggest the customer mindset and the marketing program quality can be measured by a customer survey. They have defined five important dimensions when measuring customer mindset:

- Brand awareness – measures consumers' ability to recognise or recall a brand of products or services either with or without a cue. This includes aided or unaided brand recall and brand recognition (Keller 1993, 2003; Keller and Lehmann 2003);

- Brand associations – measures the strength, favourability and uniqueness of the attributes, benefits and attitudes of a brand. Brand attributes, benefits and attitudes are the three major types of brand associations (Keller 1993; Keller and Lehmann 2003);

- Brand attitudes – represent overall consumer satisfaction with the brand (Keller and Lehmann 2003) and this construct is important because it has a strong impact on consumer behaviour. According to Keller (1993), it is one of three major types of brand association (the other two being attributes and benefits). Brand attitudes, are, in turn, derived from the beliefs of product-related attributes as well as the functional and experiential benefits and non-product-related attributes and symbolic benefits;

- Brand attachment – represents customers' loyalty towards the brand and their resistance to switching to another brand (Keller 1993, 2003; Keller and Lehmann 2003); and

- Brand activity –reflects customers' willingness to buy the brand, recommend it to others and seek information about the brand (Keller 1993, 2003; Keller and Lehmann 2003).

Various researchers have measured different dimensions of the customer mindset. For example, Park and Srinivasan (1994) proposed a new survey-based method for measuring CBBE at the level of the individual consumer. Through a survey, they collect each individual's overall brand preference and their multi-attributed brand preference based on objectively measured attribute levels. These objectively measured attribute values are derived from consumer reports and expert opinion, and both preference measures are then converted to a dollar value. After that, they calculate the difference between overall brand preference and the multi-attributed brand preference (based on objectively measured attribute levels) in order to estimate the individual level of brand equity (Park and Srinivasan 1994, p.272). They argue that brand equity has two components, attribute-based and non-attribute based. As a result, Park and Srinivasan (1994, p.272) estimate the attribute based equity, which is "derived from the difference between subjectively perceived and objectively measured attribute levels. The non-attribute-based component of brand equity captures brand association unrelated to product attributes". The survey examined two consumer products, toothpaste and mouthwash, and resulted in providing both market share premium and price premium measures of brand equity.

Lassar et al. (1995) have also explored the range of components of the customer mindset. They have argued that CBBE can be measured in five dimensions (perceived performance,

perceived value, social image, trustworthiness and attachment), which are similar to the dimensions of the customer mindset stage of Keller and Lehmann's (2003) brand value chain model. Lassar et al. (1995) examined two consumer products, televisions and watches, and focused on measuring perceptual rather than behavioural dimensions of brand equity.

Similarly, Yoo and Donthu (2001) have also developed and validated a multidimensional scale to measure four dimensions (brand loyalty, perceived quality, brand awareness and brand associations) of CBBE. These four dimensions were actually adopted from four of the five brand equity dimensions of Aaker's (1991) model and also some suggested customer mindset measures. The findings suggested that perceived quality, brand loyalty, brand awareness and brand associations (combined into one dimension) are three distinct dimensions of CBBE. However, due to inadequate discriminant validity, brand awareness and brand association were combined into one dimension of brand equity in their model (Yoo and Donthu 2001).

Washburn and Plank (2002) have also conducted research to validate Yoo and Donthu's (2001) developed CBBE scale within a context of co-branding research to measure four dimensions (brand loyalty, perceived quality, brand awareness and brand associations) of CBBE. A list of various consumer product categories with low involvement levels of decision making was studied, such as facial tissue, cold cream, cookies with chocolate. The findings suggested brand loyalty should be an outcome rather than a dimension of CBBE and they advocated future research to further refine the scales to make a clearer differentiation between brand awareness and brand association (Washburn and Plank 2002).

Finally, Pappu et al. (2005) conducted research to measure brand equity on the four dimensions: brand awareness, brand associations, perceived quality and brand loyalty. Following the previous studies of brand equity measures by Washburn and Plank (2002) and Yoo and Donthu (2001) using American university students, American and Korean consumer samples, respectively, Pappu et al. (2005) surveyed Australian consumers, and using confirmatory factor analysis, supported the four-dimensional structure of CBBE.

Other consultancy firms have also sought to measure brand equity based on the customer mindset. The so-called Brand Asset Valuator of the advertising agency Young and Rubicam is another example of brand equity measurement based on the customer mindset (Keller and Lehmann 2003). Since 1993, the Brand Asset Valuator (BAV) has measured the brand equity for 19,000 global and local brands in 40 countries. A detailed questionnaire is employed in a consumer survey with a large sample size. The model consists of four factors in its measurement: differentiation, relevance, esteem and knowledge. Scores derived from the first and second factors (differentiation, relevance) are multiplied together to produce a component called 'Brand Strength'. The scores derived from the third and fourth factors (esteem and knowledge) are multiplied together to become a second component called 'Brand Stature'. These two components will be plotted on a two-dimensional 'Power Grid' similar to the Boston Matrix. The "power grid" is designed to diagnose the brand equity components and divides each of them into one of the four quadrants: New, Dynamic Brands, Niche Brands and Tired Brands (Keller 2008). Similar to Equitrend (discussed below in "product market measure" of Section 2.2.3), this model is designed mainly to focus on consumer responses to prominent international brands and therefore it is less suitable for adoption in this research.

Another example of brand equity measurement from the perspective of the customer mindset was developed by Millward Brown International, one of the world's leading brand valuation companies. They have devised a "Brand Dynamics^{TM}" pyramid model to help managers to assess their brand equity with their competitors. The pyramid model consists of five levels: Presence, Relevance, Performance, Advantage and Bonded. The first level is presence, which means a brand has to be present (both physically available in the market and psychologically in the mind of consumers) in order to allow the consumers to purchase. The next level is the relevance; the brand promise should be relevant to the consumers' particular needs. Then, consumers are willing to buy this brand and evaluate its functional and emotional performance. When compared with other competing brands, the consumers will have their views on its relative advantages and decide if these are strong enough to keep them buying the brand thus leading to a bonded relationship over time. By interviewing consumers about their perceptions and views towards their brands and the competing brands, the strengths and weaknesses can be identified for their brands. The consultants and the management can then devise strategies to cope with the situations and move forward to the highest level of pyramid model (de Chernatony and McDonald 2003).

As stated previously, this study proposes to study both financial and consumer aspects of brand equity using a single quantitative survey instrument. To address the marketing perspective, a survey was used to collect respondents' views and attitudes and thus to measure the four dimensions of customer-based brand equity as suggested by Aaker (1991) and Keller's (1993, 2003) brand equity models. These five (awareness, associations, attitudes, attachment and activity) dimensions of customer mindset measures are similar to the consumer-based components of Aaker's (1991) and Keller's (Keller 1993, 2003) brand equity frameworks. The literature supporting the proposed financial model is discussed below in Section 2.7.2, in relation to the Moran (1993, 1994) brand equity model. The

details of both financial and customer-based research models will be presented in Section 2.9.

Product market measures

The second stage in the Keller and Lehman Brand Value Chain model, discussed in the previous section, the "customer mindset", causally affects how customers react to a brand in the marketplace, which is the next stage of the brand value chain, brand performance. A brand's market performance (or product market measures) consists of six major dimensions (Keller and Lehmann 2003):

- Price premium – reflecting customers' willingness to pay more for a brand than other brands offering similar benefits and attributes;

- Price elasticity – measuring customers' sensitivity to price change;

- Market share – indicating the brand's sales performance in the market in relation to marketing program;

- Expansion success – reflecting the success of the brand in delivering product extension and increased revenue for the company; and

- Cost structure – indicating the ability to reduce the cost of the marketing program.

If these five dimensions are collectively positive, the brand will achieve strong brand profitability, the last dimension of brand performance (Keller and Lehmann 2003; Keller 2008).

There is broad consensus among brand equity researchers that a price premium measure is the most useful measure of brand equity and that it reflects the brand's ultimate performance in the market place (Aaker 1996; Anselmsson et al. 2007). Price premium is defined as the ability of a brand to command a higher price than a private or an unbranded

product or service (Ailawadi et al. 2003), or the ability of a brand to charge a higher price than its competitors offering similar benefits (Aaker 1996; de Chernatony and McDonald 2003). Anselmsson et al. (2007) have developed a brand equity model for measuring the price premium in grocery products. An attraction of a price premium and other product market measures to senior management and accountants is that they can be given either by a dollar value estimate or percentages which are more measurable. The shortcomings of product market outcomes such as the price premium measures include that they are commonly based on customers' subjective judgments in hypothetical situations. In addition, in some markets, high market share may result from severe price cuts and, further, strong brands might not necessarily charge premium prices (for example, Wal-Mart) (Ailawadi et al. 2003). In Wal-Mart's case, premium prices are traded off against market share volumes.

Another example of measuring brand equity value at the brand performance stage is Equitrend's research approach, mentioned previously, which measures brand equity based directly on consumer perceptions. Their approach involves an annual survey of 2000 respondents and covers 700 brands world-wide. The model consists of three measured factors: salience, perceived quality and user satisfaction, and scores derived from each factor are combined to form a total score. Factors like premium pricing, low price elasticity and higher usage of the brand are all correlated with higher Equitrend scores (Haigh 1997). Like many other financial brand equity measures, this model reflects only the recent past or the present performance of the brands and does not examine any future potential. Moreover, the model is focused primarily on consumer attitudes, rather than market performance, and also requires a large number of respondents and focuses more on multi-national brands. For these reasons this model was not considered appropriate for this study.

A third example which examines brand equity and its correlation with market share and relative price is the Moran (1993, 1994) brand equity measures which will be discussed in detail in Section 2.7.2.

Ailawadi et al. (2003) have commented that product market measures are focused on outcomes but not the sources of brand equity and thus they lack diagnostic ability. This may also explain why many scholars and marketers prefer customer mindset (attitudinal and perceptual) measures rather than any other outcomes measures, especially when seeking to understand the value of the brand to consumers, to devise branding strategies and planning of the firm, or to understand its competitive advantages in the marketplace. The current study proposes a brand equity model to test and measure the causal interrelationships among the "antecedents" or "sources" of customer-based brand equity and predict the "consequences" of customer brand equity in terms of behavioural intentions, and the study also enables the calculation of the financial value of brand equity of a company.

In considering market conditions, Keller and Lehmann (2003) have suggested that the brand performance and marketplace conditions multiplier can be measured by market scans (such as scanner data) and internal accounting records. Due to the nature of many local industries however, the financial and market data such as scanner data, are often unavailable. It is therefore also difficult for this study to measure these constructs in the absence of publically-available detailed and reliable market data. In order to overcome this shortcoming, following Keller and Lehmann (2003), data such as market share, respondents' price sensitivity and price premium within an industry can be calculated using survey data. Although the data might not be as comprehensive as the publicly available financial and marketing data which is preferable in measuring brand equity (Simon and

Sullivan 1993), the present study, at least, explicitly incorporates these two important components of price premium and market share in the proposed model for calculating the financial value of brand equity of the company. Further, the present study also demonstrates how such industry information can be obtained from survey data when such data would not be available publicly. In this context, and on the other hand, variables such as brand extension success, cost structure, and the profitability of the brand market performance including revenue premium measures and marketing mix elasticity, if they are available, are usually regarded as internal and confidential information of many companies. Such measures not normally available, publicly or commercially, or cannot be easily estimated using survey research, and thus were not included in the scope of the present study.

Financial market measures

The third stage of Keller and Lehmann's (2003) brand value chain model is the shareholder value (also known as financial market measures) (Keller and Lehmann 2003). How much the value of the brand performance (second stage) is translated into shareholder value depends on the investor sentiment multiplier. For instance, what is the growth potential of a brand in the product category? What are the interest rates and the supply of capital? What is the brand's risk profile? Based on the factors considered in, and the information available to, the investor sentiment multiplier, the financial marketplace consolidates various assessments about a brand's financial value to the share market. The key indicators of the financial market measures of a brand are the share price, the price/earnings ratio and the overall market capitalisation of the company (Keller and Lehmann 2003). In the last stage of the brand value chain model, Keller and Lehmann (2003) suggest that the shareholder value and the investor sentiment multiplier can be assessed by the share price, the price earnings ratio, or the value of a brand if sold, investor analysis and/or interviews

with analysts. (It should be recognised, of course, that this assumes that such information exists and is readily available and that the company's, and the brand's, shares are publicly quoted and traded. Clearly, these assumptions would not hold for unlisted companies or for most higher education providers). Contemporary examples in the vastly inflated share prices of consumer technology companies such as Apple, Google and Twitter illustrate the multiplier effects of consumer sentiment. At the same time, it raises the issue of a possible "disconnect" between brand equity and market capitalisation, especially in the case of "under-" or "over-valued" brands. In particular, in circumstances where brands are not valued in the balance sheet, it is likely that their "true" brand equity will be typically understated.

In the context of this issue, the Interbrand brand equity valuation model, discussed below in Section 2.5.4, is one further example of a financial market measure, but one which is only loosely tied to conventional accounting measures and methodologies. Simon and Sullivan (1993) have also developed a financial brand equity measurement. They define brand equity as "the incremental cash flows which accrue to branded products over and above the cash flows which would result from the sale of unbranded products" (Simon and Sullivan 1993, p. 29). Their technique is based on regression models and publicly available data, such as information on a firm's assets and stock prices, advertising activities, R&D expenditures, patents, sales and lines of business, to estimate the firm's brand equity. Simon and Sullivan (1993) suggest a financial approach to measuring brand equity, by estimating a firm's brand equity derived from deducting the value of a firm's other (non-brand) assets from the market value of the firm, measured by its market capitalisation. Simon and Sullivan's (1993) model has several advantages:

- In using financial market data, it is an objective and unbiased estimate of a company's future cash flows (although it assumes that the current market value the firm is an accurate reflection of its future value) ;

- Brand equity is treated as an asset; and

- The model is using a forward-looking approach as it incorporates the expected value of a firm's future cash flows (as reflected in the share price and market value).

Their model thus treats brand equity as a "residual" value, after calculating all other assets, but this approach would not easily distinguish brand equity from other intangible assets, such as "knowledge capital" or intellectual property.

Ailawadi et al. (2003) have also commented on the disadvantages of financial market measures. In considering the Interbrand brand valuation model, they observe that the future potential (as reflected in the multiples in the Interbrand model) is derived from subjective judgment of experts. In similar vein, other financial market measures like Simon and Sullivan's (1993) model require data on share market valuations which has relatively less relevance to marketers, and which may simply be unavailable for many unlisted organisations and/or local industries (or for most higher education institutions, as in this study).

For these reasons, neither Simon and Sullivan's (1993) brand equity valuation model nor other financial market measures, such as the shareholder value in the third stage of Keller and Lehmann's (2003) brand value chain model, were considered suitable for this study. The target industry of the study, (namely, the Hong Kong Continuing Education industry), like many other industries in Hong Kong, is generally comprised of public institutions, public not-for-profit organisations or privately owned unincorporated businesses and/or

with limited financial resources, and generally unable to hire brand valuation consultants to calculate the value of a brand, or to hire consultants and experts to give opinion in confirming the objectively measured attribute values of a brand, as proposed by Park and Srinivasan (1994). In addition, for such organisations, there are usually no publicly available financial and marketing data (such as stock price, consumer reports, scanner data, price premiums or often even market share) to enable them to conduct the analysis of brand equity valuation advocated by Simon and Sullivan (1993).

In summary, Keller and Lehmann's (2003) brand value chain model, to a great extent, explains clearly the formation of the two major perspectives (marketing and financial) of brand equity and brand equity valuation during the process of brand value chain development. In the following discussion, another brand equity model which adopts a holistic approach, the "Stakeholder Model of Brand Equity" proposed by Jones (2005) is discussed.

2.2.4   Jones's (2005) stakeholder model of brand equity

Similar to Ambler's (2003) views, Jones (2005) considers brand value creation is a complex process by which the brand can create value for a range of stakeholders. According to Jones, the current available literature focuses more on the consumer orientation and he argues that it is necessary to have a holistic approach to identify other stakeholders that contribute different sources of brand value. He has developed a "stakeholder model of brand equity" to give a more comprehensive understanding of the sources of brand value. His stakeholder model of brand equity is, in fact, a model related to the understanding of the sources of brand value creation (rather than brand equity *per se*) from multiple stakeholders. In this sense, the model is conceptual and, as such, intended to provide a framework for further research of the evaluation of total brand equity. Jones

(2005) suggests that brand value is co-created through interactions with a range of different stakeholders. His model suggests a way of understanding and prioritising how the multiple stakeholders contribute to brand value co-creation. He argues that there is a need for a more holistic approach to brand valuation measurement; that is, it should not just only focus on the cash flow amount projected in brand valuation and it is equally important to identify the sources of that brand's value.

The sources of brand equity should be identified and examined from the multiple stakeholder relations. Jones (2005) illustrated these relationships as a daisy-wheel model of stakeholder equities as shown in Figure 2–3. In the Figure 2–3, possible stakeholders of the brand are suggested and their relationships are inter-related. He argues specific measure of brand equity should be identified and suggested for each stakeholder group. Thus, for example, a brand can have very strong supplier and customer equities but the total brand equity will be affected if it has adverse media coverage. Jones also suggests that primary and secondary stakeholders should be identified; that is to say, which group of stakeholder(s) contribute(s) to brand value constantly, or only occasionally, in relation to specific issues or events. It is also necessary to prioritise the stakeholders' contributions to brand value. In relation to stakeholder prioritisation, four variables: dependency, strategic significance, actuality and attractiveness should be examined. Dependency here refers the resource dependency of the firm to both internal and external stakeholders. Strategic significance affects the relationship with stakeholders and is determined by strategic thrust of the firm. Actuality means that the relationship with stakeholders varies over time. It should be evaluated by identifying if the relationship is latent, current or critical. Attractiveness suggests a more qualitative approach in assessing the relationship between the brand and stakeholders. Based on the above evaluation, the management will identify the importance of each stakeholder group to the creation of brand value.
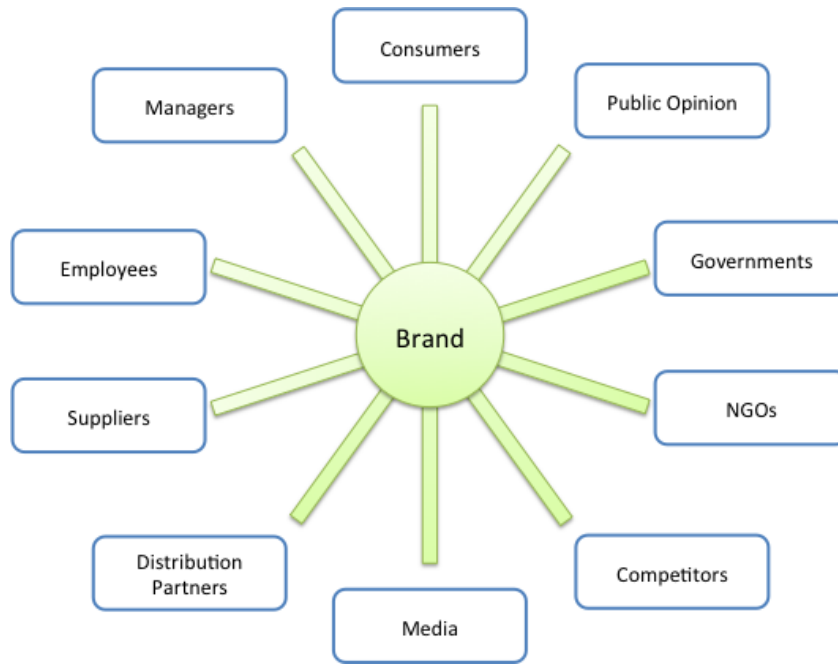
Figure 2-3. Jones's (2005) daisy-wheel model of brand equities
Source: Jones (2005, p.18)

Finally, the management of the company needs to understand how brand value is created

through the exchange process. Jones (2005) suggests three types of exchange in this

process: functional, symbolic and hedonic. Functional exchange "refers to the exchange of

utilitarian value between the brand and its relationship partners." (Jones 2005, p.22)

Symbolic exchange refers to the brand image and reputational issues in impacting the

relationship between the brand and the multiple stakeholders. Hedonic exchange requires

examining hedonic responses of the consumers as well as other stakeholders of the brand.

Identifying the nature of these exchanges will result in knowing the expectations of the

stakeholders. Figure 2–4 illustrates the identification of key stakeholder expectations after

completing the three steps above suggested by the model. The model helps to identify the

potential brand value creation from the firm's and the stakeholders' perspectives. It

provides an overview of the factors that affect brand value creation through the interaction

between the brand and the stakeholders. Brand value is created if the brand can meet the

stakeholders' expectations. The three steps in the model mentioned above are continual processes which contribute to brand value. During the processes, relationship performance will be determined by the total communication context. The total communication of the firm as shown in Figure 2–5 refers to leadership and company performance, company-controlled forms of communication and third-party communication. The overall assessment of the brand performance is evaluated by the stakeholders through the communication context which will become the source of brand's value. After this, relationship performance outcomes are developed and reflected either as profitability, reputation, loyalty, synergy and/or political influence. These relationship performance outcomes, coupled with a range of environmental factors, will impact on the overall brand value in the stakeholder-brand relationship.
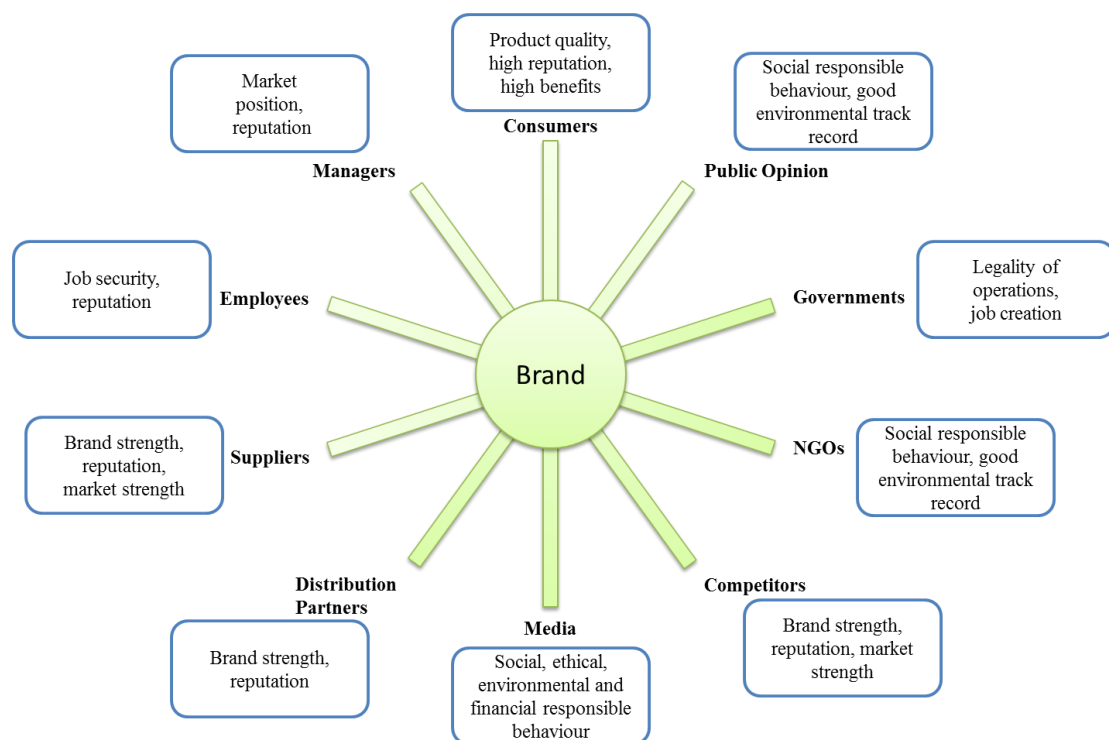
Figure 2-4. Jones's (2005) identification of key stakeholder expectations
Source: Jones (2005, p.18)

Prioritisation:
- Dependency
- Strategic
- Salience
- Actually

Total communication
- Leadership and performance
- Controlled communication
- Third party communication

Environmental factors
- Salient issues
- Macro-economic factors
- Political climate legislation

Primary stakeholders

Second stakeholders

Identity relevant stakeholders

Identity the value of the relationship

Identity the nature of the exchange

Functional

Symbolic

Hedonic

Relationship performance

Brand value

Outcomes:
- Profitability
- Reputation
- Loyalty
- Synergy
- Political Influence

Figure 2-5. Jones's (2005) stakeholder-brand value model
Source: Jones (2005, p.18)

Jones' conceptual stakeholder model of brand equity helps to identify the major stakeholders' relationships in the brand value creation process and to understand the sources of brand value from a more holistic and comprehensive approach. Jones (2005) claimed he is a pioneer in providing an overall framework for conceptualising the multiple stakeholder relationships in the brand value creation and linking various streams of thought in the literature. He suggests brand value is co-created by multiple stakeholders, apart from the customers and each stakeholder group relationship should be examined separately. Brand value is not the aggregate of the value of each stakeholder relationship and each relationship has its own relationship performance outcome to be measured. However, despite the ambitious scope of the model, it does not suggest the ways by which brand value is created or how to measure it in either qualitative or quantitative approaches and these issues need to be further researched.

In short, Jones's (2005) stakeholder model of brand equity provides a holistic approach (when compared with the over-riding consumer orientation in the marketing literature) in

understanding stakeholder relationships in brand value creation. (In fact it is focused on understanding the sources of brand value creation from the perspective of multiple stakeholders, rather than just brand equity). However, Jones did not suggest or develop any measurements in assessing the brand value among the multiple stakeholder relationships and their interrelationships with the brand. Thus, there is, to date, a lack of empirical research in developing or testing the measures of brand value of his model. Due to the complexity and uncertainty in identifying all the stakeholders of each brand, the model does not suggest any measurement tools in brand equity valuation. Since brand equity and brand valuation are the main themes of the study, the Jones model was not considered applicable to the current study.

In the following discussion, another brand equity model which separates brand equity and brand value into two distinct constructs, developed by Raggio and Leone (2007) is discussed.

2.2.5   Raggio and Leone's (2007) brand equity and brand value model

Raggio and Leone (2007) have developed a conceptual model which aims to distinguish two distinct constructs: brand equity and brand value (Figure 2–6). They argue that brand equity fundamentally reflects consumers' responses to the marketing activities and is thus a consumer-based perspective. They view brand equity as one of the various factors or drivers in contributing brand value. Brand value, in contrast, represents a company-based perspective. They argue that people commonly confuse the terms brand equity and brand value, and that these two terms have been usually treated as the same construct and thus further raising the confusion. Therefore, they developed a conceptual model which aims to provide a true understanding of the two distinct concepts of brand equity and brand value (Raggio and Leone 2007).

In order to better understand their arguments that brand equity and brand value are two distinct constructs, it is necessary to note how they define these terms. Raggio and Leone (2007) define brand equity as "the perception or desire that a brand will meet a promise of benefits", and brand value as "the sale or replacement value of a brand" (Raggio and Leone 2007, p.385 and p.387). According to Raggio and Leone's (2007, 2009) interpretations, the environmental inputs (whether related to marketing activities/ communications or not) affect the brand knowledge of an individual which contributes to the consumer-based brand equity. Thus it impacts the individual-level outcomes (such as, purchases, word of mouth, loyalty, etc.). All the individual-level outcomes are aggregated and then these become the brand-level (market-level) outcomes which directly contribute to brand value. The brand value will finally impact the shareholder value (Raggio and Leone 2007). From the Figure 2–6, it shows that brand value is not wholly and directly related to consumer based brand equity. Managerial decisions (such as pricing, positioning, profitability, brand scope, channel relationships, etc.), and brand assets management (such as patents, trademarks, etc.) also contribute to brand value and these are not directly derived from consumers and thus they are not related to the components of brand equity.
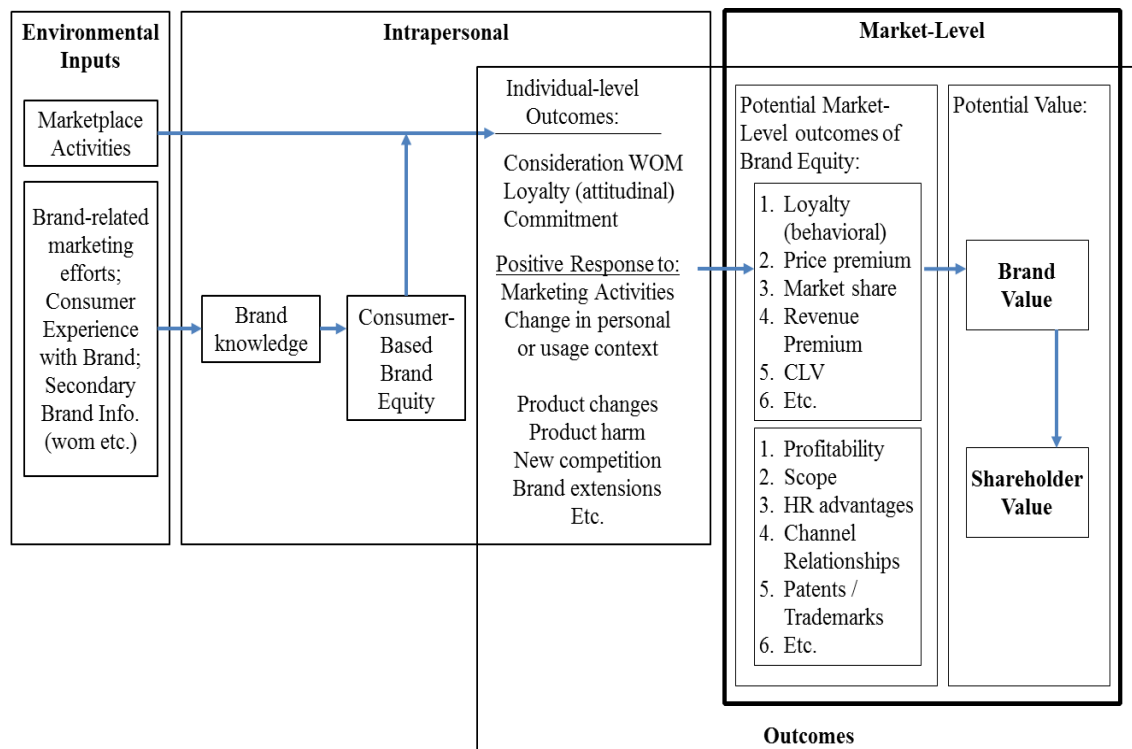
Figure 2-6. Raggio and Leone's (2007) brand equity/ brand value conceptual framework
Source: Raggio and Leone (2007, p.390)

Raggio and Leone (2007) use examples to further illustrate their arguments: assuming two companies want to purchase a brand from a third company by using the same objective measure of brand equity, however, their offer price (representing brand value) would not be the same as their brand valuations are based on their own capabilities and resources as well as their estimated ability to leverage that brand equity to become brand value. Likewise, if the purchasing firm perceives itself to be more capable of leveraging the current level, and of building new brand equity, it will assess a higher brand value than the other. If the brand equity is fully leveraged by the ability of a firm, Raggio and Leone called this brand value as the "appropriable" level of brand value (Figure 2–7). Both the current and appropriable levels of brand value refer to the net present value of all future brand profits. The current level of brand value is the projected profits generated by the current owner with the existing capabilities and resources. The appropriable level of brand value refers to the projected profits that can be generated by a company which can fully

leverage the brand equity. A contemporary example is assuming Lee Jeans sells its product at Wal-Mart, which will increase sales volume and revenues as well as brand value; however, it might not increase the brand equity for Lee Jeans through this new strategic thrust. Again, these examples illustrate that brand equity and brand value are two separate constructs and not necessarily directly related (Raggio and Leone 2007).

At a particular point in time, for a particular firm:
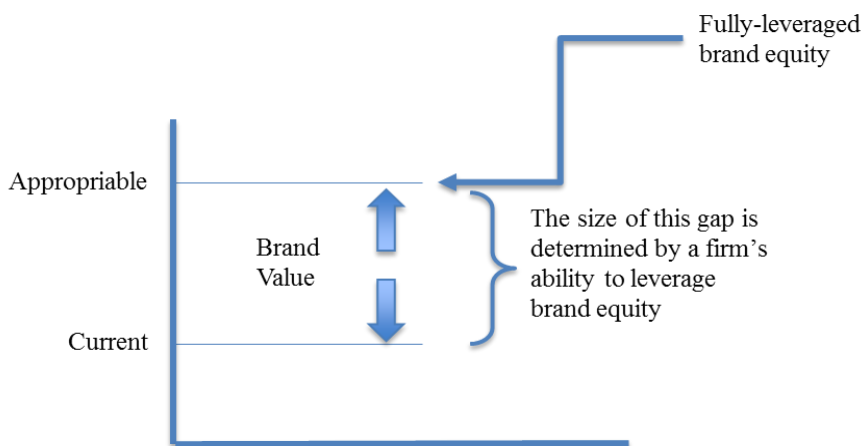
Figure 2-7. Raggio and Leone's (2007) levels of brand value
Source: Raggio and Leone (2007, p.388)

Raggio and Leone's (2007) pioneering model provides a comprehensive and alternative view of the development of brand equity. It also shows how brand equity impacts both individual and market-level outcomes, and how these outcomes contribute to brand value and shareholder value. They also pioneered in identifying and illustrating the two levels of brand value: current and appropriable, which suggests that managers should focus on the importance of leveraging the current brand equity with the firm's resources and capabilities to fully leverage brand equity in order to maximize brand value.

In short, the Raggio and Leone (2007) model demonstrates that the concepts of brand equity and brand value are two distinct constructs, but that they are interrelated and equally important. In this way, their model helps eliminate the potential confusion in using these

two terms. The company should focus on how to leverage the equity which resides in each individual consumer in order to increase/ maximize the brand value, as well as the shareholder value. Importantly however, what are the components of brand equity and how to increase it are beyond the discussion of Raggio and Leone's brand equity and brand value model. A further issue is that brand valuation measurement is not covered in their discussion of the model: Raggio and Leone (2007, p.387) have defined "brand value (as) the sale or replacement value of a brand". Does this imply that it cannot be measured if it is not sold? Further, they did not suggest how to calculate the replacement value of a brand. Various known brand valuation methods available in the literature will be discussed in Section 2.5. Valuation by replacement cost is one of the possible methods available in the literature but it has several shortcomings, such as that a weak brand might have a high replacement cost which would result in a high brand value. These limitations suggest a research opportunity in proposing a model for measuring these two important, distinct and interrelated concepts, especially for those industries in which the current available measures in brand valuation are inapplicable. In the Section 2.4, these two important but distinct constructs: brand equity and brand valuations, will be further discussed.

Another stream of research originated by Andrew Ehrenberg offers a different view on the concept of brand equity and which will be discussed in the next section.

2.3   Criticisms of the brand equity concept

It has previously been concluded that brand equity is an important concept in the marketing and branding literature, although there is still considerable debate regarding its meaning, measurement and importance. As previously discussed, different scholars and practitioners have different interpretations and views, particularly in regard to its operational definition and measurement. Nevertheless, despite the continuing discussion around the detail of the

concept of brand equity, most researchers and commentators on the subject perceive brand equity as an important topic in strategic planning and marketing; in particular for its contribution to increasing companies' competitive advantages. However, in contrast, another stream of research originated by Andrew Ehrenberg and pursued by his followers offers an alternative view on the concept of brand equity. Their empirical findings and arguments on the concept of brand equity will be discussed in the following sections.

2.3.1 Understanding brands

2.3.1.1 Brand equity

Andrew S. C. Ehrenberg and his co-researchers, (such as, N. Barnard, T. P. Barwise, M. Bird, S. B. Castleberry, C. Channon, G. J. Goodhardt, J. Scriven and M. D. Uncles) have propounded contrary views to many other scholars' and practitioners' interpretations on the concept of brand equity as previously discussed.

Following their research, Ehrenberg and his followers recommend using the NBD-Dirichlet model[1] (or "Dirichlet" for short), as a statistical model to analyse how brands are performing and the associated patterns of buyer behaviour in order to broaden our understanding of the consumers, brands and the role of marketing factors. In general terms, their Dirichlet models aim to predict how many consumers purchase each of the available brands over a given period of time and to identify the key variables which best predict these sales patterns. Their findings are based on various analyses, using the Dirichlet model in over 50 different product and service categories (such as soap, soup, motor cars, newspapers, prescription drugs, media usage, etc.) in different countries (including the United States, United Kingdom, Germany, Australia, and Japan), and at different times

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[1] The Dirichlet model was firstly developed by Chatfield and Goodhardt (1975), and further enhanced by Bass et al. (1976) with the focus on a theoretical utility basis. Ehrenberg et al. (2004) used the model to help explaining and predicting the brand performance. (Ehrenberg et al. 2004, p.1311).

(that is, 1950-2003). Their findings of this extensive array of studies were contrary to many scholars' and practitioners' beliefs and understanding, especially since they concluded that there was no evidence of brand equity (and even what has been so called "strong" or "weak" brands) from the consumer behaviour point of view. Further, the attitudinal "intention-to-buy" construct was only related to past usage experience of the consumers and current market share of the brand. That is, that "intention to buy" was a poor predictor of future behaviour. Key to this pattern uncovered by Ehrenberg and his colleagues is the so-called "Double Jeopardy" (DJ) phenomenon. The concept of the DJ phenomenon was originated by William McPhee (1963), a Columbia University sociologist. He found that smaller brands tend to have fewer buyers than the bigger brands as well as lower average purchase frequencies. Subsequently, Andrew Ehrenberg and his co-researchers have consistently found the DJ pattern of buying behaviour for many different brands and at different times (Barwise and Ehrenberg 1985; Ehrenberg 1997a; Ehrenberg 1997b; Ehrenberg et al. 1990; Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004). Ehrenberg et al. (1990) noted that many marketing scholars and practitioners were not aware of the DJ phenomenon despite the increasing empirical evidence of its existence. Thus the existence of the DJ pattern within Dirichlet models would imply that market share is more driven by inherent market momentum; rather than by attitudinal brand equity.

According to Ehrenberg et al. (2004), the Dirichlet model has five assumptions: First, consumer heterogeneity follows a "Gamma" type of distribution for individual average purchase rates. Second, consumer purchases are best approximated by Poisson distributions. Third, consumer heterogeneity follows a multivariate Beta distribution of brand choice probabilities. Fourth, brand choice exhibits a zero-order multinomial distribution. Fifth, purchase incidences and brand choice are independent.

As previously discussed, since the concept emerged in the late 1980s, brand equity has been viewed as an important topic in marketing, and many marketing scholars and practitioners strongly recommend building and managing the strong brands in order to differentiate one brand from the others and to gain competitive advantage (Farquhar 1989; Aaker 1991; de Chernatony 1991; Keller 1993; Lassar et al. 1995; Cooper 1998; del Río et al. 2001; Keller 2001; Campbell 2002; Temporal 2002; Ambler 2003; de Chernatony and McDonald 2003; Hoeffler and Keller 2003; Pappu et al. 2005; Kapferer 2008; Christodoulides and de Chernatony 2010). However, Ehrenberg and his co-researchers took a contrary view on these propositions. They did not see any evidence that there are strong or weak brands from the consumer attitudes and behaviour point of view; nor evidence that a brand with high consumer-based brand equity would automatically or inevitably become a big brand, From their perspective, however, there are only "big" and "small" brands (from the consumer behaviour point of view). As shown in the DJ pattern, it was found that brand loyalty measures' results were similar for competitive brands no matter whether big or small. Bigger brands had just naturally more customers (and bigger market share and higher average purchase frequencies and penetration) than the smaller brands; however, there was not much difference in consumers' (attitudinal) loyalty between competitive brands. They found that the attitudinal behaviour "intention-to-purchase" is closely related to consumers' past usage and current market share but that it is not related to brand loyalty (Castleberry and Ehrenberg 1990; Ehrenberg et al. 1990; Ehrenberg 1997a; Ehrenberg 1997b; Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004).

Similarly, and following their empirical findings, Ehrenberg and his followers held a contrary view to those of many other scholars and practitioners mentioned above who focus on the development of brand differentiation and building strong brands as a means to

sustainable competitive advantage. They argued that customers of each brand do not look at their brands very differently because any competitive advantages and the differentiation (functional, emotional or image-related attributes) between brands can soon be copied by other competitors and thus the competitive advantages are not sustainable. This also explains why attitude survey results usually differ little among the competitive brands. They argued that whether a brand can be a big one is highly correlated to how the consumers regard it as salient and also buy it. Thus, the consumers' behavioural attitude towards a brand (that is, purchase and intention to purchase) are not determined by how the consumers regard it very differently (such as functional or emotional differentiations) or by its having a higher brand equity (in terms of having positive brand image or high brand values) than other competitive brands. The key attitudinal determinant is the number of people who view the brand as "salient" (Ehrenberg et al. 1997a, p.7). In this sense, salient means feeling positive about it. To these consumers, the greater the likelihood consumers will consider purchasing the brand, the larger the market shares of the brand. Their findings on the apparent "instant loyalty" for a successful new brand prove that a successful brand is dependent on how many consumers view the brand as salient (Ehrenberg 1997b; Ehrenberg et al. 1997a; Ehrenberg and Goodhardt 2000).

2.3.1.2 Brand loyalty

Ehrenberg and his co-researchers have undertaken extensive research examining the brand loyalty issue. According to the Ehrenberg "school", brand loyalty has been measured by different brand performance measures, such as the annual average rate of purchase, the brand's share of category requirements (SCRs), rate of 100 percent loyal customers, the levels of period-to-period repeat-buying and their annual average rate of purchase of brands, etc. (Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004). Generalising their findings, it was concluded that brand loyalty (measures) varied little between the

competitive brands. Thus, changes in sales usually do not arise from changes in loyalty but from changes in the number of customers (and in line with the market share) (Ehrenberg et al. 2004). Their empirical research thus concluded that brand loyalty is generally not significantly different among the competitive brands.

In support of this conclusion, Ehrenberg and Goodhardt (2000) have examined 23 new brand cases and also benchmarked these brands with nearly 100 established brands in nine product categories with at least 3-4 quarterly data to study the brand loyalty effect for new brands. An unexpected finding was that a successful new brand's average purchase frequency was almost instantly normal at the same level as in the subsequent years and as for other competitive established brands. They found that consumer purchase was not driven by brand loyalty, but was mostly in line with market share (Ehrenberg 1997b; Ehrenberg and Goodhardt 2000). Ehrenberg and Goodhardt (2000) explained that experienced consumers have knowledge about competitive brands that can be substituted. Their findings of the instant loyalty for the new brands again proved the lack of a significant influence of brand loyalty from the viewpoint of consumers' behaviour.

2.3.1.3 Brand personality

Most recently Romaniuk and Ehrenberg (2012) conclude that a brand would not be perceived by consumers as having human traits or personality. Instead, they found there was little evidence to support the existence of distinct brand personalities which distinguish or differentiate one brand from others. Based on their empirical findings and the objectives and the scope of the study, the concept of brand personality will not be further examined in the current study.

2.3.2 Understanding consumers

Ehrenberg and his co-researchers noted that consumers are polygamous in nature and would usually have several brands in their consideration set with steady purchase propensities. They believe that consumers are usually highly experienced and they also proved that the consumers' past usage experience would have an important impact on the consumers' brand choice propensities (Ehrenberg et al. 2004). Therefore, Ehrenberg fundamentally challenged the widely accepted view (such as that of Aaker 1991; Keller 1993, 2003; Baldinger and Rubinson 1996) that consumer attitudes predict behaviour change. In contrast, many of Ehrenberg and his co-researchers' empirical findings demonstrated that behaviour change precedes attitudinal change (Barwise and Ehrenberg 1985; Castleberry and Ehrenberg 1990; Ehrenberg 1997a; Ehrenberg 1997b).

2.3.3 Role of marketing factors

Advertising has been conventionally viewed by marketing professionals as one of the most important marketing tools as it can raise the brand awareness and loyalty of consumers. Ehrenberg and his followers however have disagreed with this proposition (Ehrenberg et al. 1990; Ehrenberg et al. 1997b; Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004). They argue that the marketing mix including product, price, place, advertising and promotion etc., cannot produce significant differences in brand loyalty between competitive brands because loyalty is fundamentally driven by the DJ pattern. However the management of the marketing mix might affect the brand's penetration; that is, market share and shares volume. As mentioned previously, Ehrenberg and his followers found that repeat-buying and intention-to-buy is driven by past usage experience and by current market share. Thus, consumers will buy a branded product or service only if they regard it as salient to them. Ehrenberg and his co-researchers see consumers as generally highly experienced and consequently they usually have a consideration set of brands. Therefore,

Ehrenberg and his co-researchers suggest that the aim of advertising should be to sustain the brand's competitive salience and availability to the consumers (Ehrenberg et al. 1990; Ehrenberg et al 1997b; Ehrenberg and Goodhardt 2000; Ehrenberg et al 2004).

In short, from the above discussion, it is evident that, based on their extensive empirical research, Andrew Ehrenberg and his co-researchers have divergent views from those of many other marketing scholars and practitioners on the concept of brand equity. They conclude that there is no evidence of brand equity and of what have been so-called strong or weak brands. Rather, it is just a matter of big or small brands. In their view, consumer behaviour change does not result from having a strong brand or high level of brand equity, brand loyalty or favourable brand attitudes. Rather, due to the DJ effect, the purchase behaviour of consumers is just related to their past usage and the current market share in repeat-purchase product and service markets. Their empirical findings also support the view that, in these markets, behaviour change precedes attitudinal change and not vice versa.

Furthermore, Ehrenberg and his co-researchers have fundamentally questioned the importance of brand loyalty from the consumer point of view. Their findings of instant loyalty for new brands fundamentally challenge the existence, or importance, of brand loyalty from the consumers' behaviour viewpoint, which is further supported by the evidence that brand loyalty differs little among the competitive brands.

Moreover, their empirical findings consistently prove the existence and importance of the DJ effect: namely, that bigger brands tend to have more customers and larger market shares. They suggest that marketers should focus on varying the marketing mix, such as through changes in price, product formulation and distribution, in order to achieve higher

sales and penetration; and more importantly in its market share and sales volume. They argue against attempting to build attitudinal brand loyalty or brand equity since their Dirichlet-pattern findings suggest competitive brands differ little in their loyalty brand performance related measures and their findings also question the existence of brand equity, and of distinct brand personalities among the competitive brands. They also argue that marketers should help a brand to become bigger by using advertising to remind the customers about the brand's salience and availability. They believe that consumers in practice have already developed a consideration set of several brands which is demonstrated in their split-loyalty choice propensities in which they tend to buy several brands and with one or two brands being their favourites (Ehrenberg et al. 2004).

In conclusion, the Ehrenberg view of markets and the contribution of brands challenges the prevailing "mainstream" marketing focus on the importance of brand equity. Whether these two views of the market are fundamentally at odds is an unresolved question. Certainly, the Ehrenberg view fundamentally challenges the view that the value of brands lies in their attitudinal importance in driving sales revenues and market shares. For the current study, the Ehrenberg perspective raises a number of questions. In particular, to what extent is the Ehrenberg perspective relevant in less frequently repeat-purchase product and service markets, such as the Hong Kong continuing education market? Is the consumer behaviour change (to buy or intention-to-buy a continuing education program) best explained or predicted by current market share and past usage? Does the DJ effect also exist in the Hong Kong continuing education sector? Do the smaller brands tend to have fewer buyers than the bigger brands as well as lower average purchase frequencies? Moreover, does brand equity and brand loyalty affect consumer behaviour change in the Hong Kong CE sector, or is the causal relationship in the other direction? Clearly, the Ehrenberg view provides a different perspective through which to view consumer markets.

Which of these perspectives provides the more convincing explanation and the more useful insights will be further discussed in the research objectives and findings

Following the discussion in Section 2.2 that brand equity can be viewed broadly from two perspectives, and also that it has been conceptualised from various interpretations, including Ehrenberg's contrary views of brand equity, the issues of brand valuation and brand equity valuation will be discussed in the next section.

2.4   Brand valuation versus brand equity valuation

Because brand equity can be viewed from two major perspectives, as discussed above, brand equity valuation can also be viewed from two perspectives; that is, finance based, which focuses on brand valuation (traditionally seen as an intangible asset) and consumer based, which focuses on the broader, but less "concrete" concept of brand equity, as discussed previously. While both views of measurement of brand equity will ultimately be expressed in quantitative financial terms, they may not always closely coincide due to their origins and ultimate applications and usage. In short, the financial (or brand valuation) view is designed to yield a financial calculation which is ultimately related to accounting reporting conventions. In contrast, the consumer-based view is concerned with understanding the value of brands in behavioural terms (that is, their brand equity valuation).

Brand equity valuation is important because "brand names may live long, but what are critical are the strength, currency and value of the brand: its brand equity" (Cooper 1998, p.32). Roberts et al. (2004, p.1) have also stressed the importance of brand equity valuation: "If you can't measure it (brand equity), you can't manage it".

Ambler (2003) noted that many large corporations seek to measure their brand equity only from a financial perspective. He considered that "brand valuation quantifies the state of the marketing asset (brand equity)… Life would be much simplified if non-financial market measures could be avoided together" (Ambler 2003, p.54). Ambler (2003) suggested that, if firms focus only on brand valuation as the ultimate solution for brand equity assessment, they might take high risks. Indeed, many practitioners no longer use various brand valuation methods as a single measure (Ambler 2003). Ambler (2003) listed three major limitations:

- The choice of methodology is subjective;

- The assumptions of future interest rates and inflation for discounted cash flow might be changed; and

- Discount cash flow methods take future marketing efforts into today's brand valuation.

The concepts of brand equity valuation and brand valuation can be easily confused. Brand valuation is merely quantifying a brand's financial value at a particular time, and it is one method of measuring brand equity (Ambler 2003). Brand equity can also describe (that is, measure in a marketing sense) consumers' perceptions about a brand (de Chernatony and McDonald 2003). This can eventually contribute to the value of a brand, but they are two separate and distinct meanings. Nevertheless, de Chernatony and McDonald (2003) strongly believe that valuing brands is a worthwhile exercise as it encourages managers to think more about the long-term implications of brand building and strategies rather than focusing just on short-term benefits derived from promotion.

With the widespread acceptance of the importance of brand equity, has come the growing recognition that many firms need to measure brand equity in order to reflect their

marketing credibility and productivity for stakeholders, and to justify their marketing expenses. Using only financial metrics for measuring brand equity is widely regarded as inadequate and it is equally important to understand and measure the behavioural aspects of brand equity in order to provide a comprehensive understanding of the construct and to make sensible suggestions on marketing and branding strategies for firms striving for a competitive advantage (Ambler 2003; de Chernatony and McDonald 2003; Rust et al. 2004) and for whom strong brands are a key concern. This suggests that there are two distinctive, but related aspects of brand equity; namely, its initial measurement and its subsequent management. These key perspectives form the principal objectives of the current study.

However, it is also evident from a study of the literature and the earlier discussion that there is still no integrated model that can measure both the finance-based and consumer-based perspectives of brand equity. A finance-based perspective measures mainly the brand value of a firm, and typically treats brands as intangible assets, whereas a consumer-based perspective measures the sources of brand equity and understands the value of a brand to the consumer and is reflected in consumers' behaviour.

In summary, brand valuation is only one of the metrics used for measuring brand equity, and it should not be used as a sole indicator of brand equity. Rather, brand equity valuation, ideally, should be measured using an integrated approach that considers both financial and marketing perspectives. This is the focus of the current study and is discussed in Section 2.9. While brand equity valuation and brand valuation are different, they are clearly linked. Section 2.2.3 above discussed the major brand equity valuation/measures from a consumer-based perspective. Major financial brand valuation methods are presented in the next Section 2.5.

2.4.1 Importance of financial brand valuation

Due to the large increase in the number of takeover bids in 1980s, financial brand valuation has become an important tool for the buyers and sellers to arrive at an appropriate price in the sale or acquisition of companies and/or brands. Salinas and Ambler (2009) have analysed the development of brand valuation methods and found there are at least four reasons why financial brand valuation is important:

a. Due to the increasing recognition of brands as assets, it is important to measure marketing performance in relation to the change of the value of the brand. By measuring the brand value in currency, it can be clearly understood by both marketing and finance professionals in evaluating the performance of marketing investment.

b. It has been noted that there is an increasing discrepancy between share prices for companies and their tangible assets. The gaps are largely due to the inclusion of the value of intangibles. Financial brand valuation can help to provide important information in relation to one of these intangibles, namely, brand equity.

c. It is necessary to have financial brand valuation methods to provide reference information when the brands are to be bought and sold.

d. Legal and tax management is another reason for financial brand valuation. For example, brand valuation may help the company in case of restructuring and break-ups.

Similarly, Kapferer (2008) argues that financial brand valuation is important as it provides information in evaluating marketing and advertising decisions of the company. This might help accounting and financial professionals to understand how to find a way to evaluate the marketing decisions and justify the marketing investment and strategies which are the

responsibility of the marketing people. In the following section, major methods for financial brand valuation including their advantages, drawbacks and limitations will be discussed.

2.5   Methods for measuring financial value of a brand

This section firstly discusses the four major classifications of financial-based brand valuation methods as identified by Cravens and Guilding (1999). Similar to Cravens and Guilding's (1999) classification, de Chernatony and McDonald (2003) classify five major methods in valuing a brand; and view the "market-based approach" under the Craven and Guilding (1999) classifications of financial brand valuation method as being comprised of two different brand valuation methods; namely, market value method and premium price method.

On the other hand, Kapferer (2008) classified six major methods for measuring the financial value of a brand. In addition to Cravens and Guilding's (1999) classification of four types of brand valuation, he suggests two additional financial brand valuation methods (that is, valuation by royalties and valuation by replacement costs approaches) which will be discussed after the first four brand valuation methods.

Similarly, Salinas and Ambler (2009) have analysed all available financial brand valuation methods in the literature from the Emerald database of journal publications and concluded that most can be viewed from three major approaches: cost, market and income approaches. They view valuation by royalties and valuation by replacement cost approaches as classified by Kapferer (2008) as income and cost approaches respectively. As is evident, different scholars frame and classify various methods of financial brand valuation differently.

Cravens and Guilding (1999) suggest there are four major brand valuation methods which are currently in use:

1. Cost-based approach;

2. Market-based approach;

3. Income based approach; and

4. Formulary approach.

2.5.1 Cost-based approach

This method is also known as the conservative method or historical cost method (also classified as historical cost method by de Chernatony and McDonald (2003) and Kapferer (2008)). A brand is valued by calculating all the costs involved in building the brand in a particular period, such as the costs of purchasing, building and maintaining the brand, research and development of the product, marketing and advertising, promotion and communication costs, etc. A discount rate factor incorporates any historical expenditure into the present value (Cravens and Guilding 1999; de Chernatony and McDonald 2003; Kapferer 2008).

This method is generally accepted by accountants as it complies with standard accounting practice in valuing assets, and overcomes the problem of separability. However, it is less favoured by marketers as it provides only a snapshot of the historical cost in establishing a brand, rather than any prediction or guarantee of a brand's earnings and performance or a brand's value (Cravens and Guilding 1999; Kapferer 2008). When compared with other financial brand valuation methods, the advantage of this method is that it is relatively simple and logical, and based on historical costs.

A major disadvantage of this approach is the difficulty of identifying the indirect costs of developing the brand. Some long term investment costs such as quality controls, accumulated know-how and specific expertise etc., which also help developing and sustaining a brand, are not registered in the historical method. In addition, differences in accounting principles, such as cost calculation and depreciation criteria among companies, add to the difficulty of calculating the items consistently. Moreover, many strong brands have a long history and how to define, over what period should the historical costs be counted, is not self-evident. In addition, it may be not practical for mature brands with a long history to track all the costs related to brand development (Cravens and Guilding 1999; Kapferer 2008). Conversely, a failed brand might have very high development costs, which would produce a high calculated brand value (de Chernatony and McDonald 2003). This method also ignores the current financial position of a brand (Murphy 1990a; Kapferer 2008) or projected earnings.

2.5.2   Market-based approach

This approach determines the worth of a brand based on the price at which it can be sold (Cravens and Guilding 1999). Similarly, de Chernatony and McDonald (2003), and Kapferer (2008) suggest a brand value can be estimated by referencing the value of similar brands on the market and they labelled this method as market value and valuation by market price respectively. (Respectively suggests there are two distinct constructs). The problem with this market-based approach (or market value approach or valuation by the market price method) is the absence of markets for selling the brands. Brand sales are relatively few and rare and thus it will often be difficult to find a similar or substitute brand that has been sold in the market as a reference (Cravens and Guilding 1999; de Chernatony and McDonald 2003; Kapferer 2008). Nevertheless, this approach does yield a realistic financial valuation, albeit one which may not be consistent with accepted accounting

conventions (A separate section in Section 2.6 discusses from the accounting point of view how a brand can be valued and booked when it is sold). To the owners and shareholders of the acquired brand, however, this may be the only value that they can "take to the bank", although this value is difficult to establish and test in advance of a sale, and is susceptible to volatile share market and macro-economic fluctuations. (In this sense, it could be argued that Nestlé may have paid too much, or too little, for Rowntree, at eight times its book value (Murphy, 1990a), since it is difficult to establish a valid comparator.)

2.5.3 Income-based approach

This approach is based on estimating a brand's future potential, thus avoiding the difficulties associated with historical costs. It requires determining the brand's future net revenue discounted to the present day value (Cravens and Guilding 1999; de Chernatony and McDonald 2003). Future net revenue can be determined using three methods (Cravens and Guilding 1999):

1. Compare the brand's premium price to an unbranded product. The brand value is the differences in these two prices multiplied by the volume of sale of branded product. This is not easy in practice as not all branded products have similar unbranded products for comparison. (This is also known as the premium price method in de Chernatony and McDonald's (2003) brand valuation method classification).

2. Estimate the annual royalties if the brand is licensed. Again, not all brands are licensed, and licensed brands are more likely to be international than local brands. (Kapferer's (2008) royalties method is another financial brand valuation method which will be further discussed in the later part of this section).

3. Estimate the strength of a brand by comparing retail sales of the brand with the total sales of this type of product.

Similarly, Kapferer (2008) classifies this financial brand valuation method as valuation by future earnings. He views this method as involving three stages. It requires, firstly, identifying the net income associated with the brand (but not with the company or the company's other brands); secondly, estimating the future cash flows by the analyst and, thirdly, deciding on a discount rate and period for the brand valuation. The formula using in this method is the following (Kapferer 2008, p.517):

Value of the brand $= \sum_{t=1}^{N} \frac{RB_t}{(1+r)^t} + \frac{\text{Residual value}}{(1+r)^N}$

where:

RB_t = Anticipated revenue in year t, attributable to the brand

r = Discounting rate

Residual value after year $N = \frac{RB_n}{r}$ or $\frac{RB_N}{r-g}$

where:

g = rate of revenue growth

Kapferer (2008) argues that this method is a traditional method of valuing all kinds of investments, whether tangible or not. The shortcomings of this method are the uncertainty of cash flows prediction, the subjectivity of the choice of discount rate and the period for calculating cash flows (Kapferer 2008).

As noted by Murphy (1990a), using this method for balance sheet purposes might be contrary to the basic accounting principles of prudence and consistency. In particular, valuing an asset based on future earnings runs contrary to the underlying historical basis of accounting principles and practice.

2.5.4   Formulary approach

This approach, classified by Cravens and Guilding (1999) and Kapferer (2008) as the formulary approach and valuation by present earnings approach respectively, was developed by the Interbrand company in November 1988 (Murphy 1990), and uses multiple criteria to calculate the value of a brand (Cravens and Guilding 1999; de Chernatony and McDonald 2003; Kapferer 2008). Interbrand has become one of the leading brand valuation companies and has been provided brand valuation services for many major international corporations (Interbrand 2012).

The Interbrand proprietary brand valuation method is similar to the financial valuation of a company by examining its price/earnings (P/E) ratio. The price earnings ratio of a company is equal to the market value of the company divided by its after-tax profits (see the equation below for calculating P/E); the higher the P/E ratio, the higher the investor confidence in the company's ability to generate future net profits. The Interbrand method applies the same logic in the equation for calculating brand value (de Chernatony and McDonald 2003; Kapferer 2008):

$$P/E = \frac{\text{Market value of equity}}{\text{Profit}}$$

$$\text{Brand multiple} = \frac{\text{Value to be calculated}}{\text{Net profits of brand}}$$

As mentioned previously, since there is no established or permanent market for acquiring or selling brands (and therefore no widely accepted formula), the value of a brand needs to be calculated through the following stages in the Interbrand model (Murphy 1990a; Cravens and Guilding 1999; de Chernatony and McDonald 2003; Keller 2003; Kapferer 2008):

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1. Interbrand calculates the net profits of a brand by using the brand's last three-year weighted average of profits after tax. Each year profits should be discounted to take account of inflation. This three-year weighted average profit after tax is called the applicable net brand profit in the model.

2. The brand strength needs to be firstly evaluated in order to calculate the brand multiple. According to the design of the Interbrand brand valuation model, the brand strength consists of seven factors, with the maximum score indicated in brackets (Cravens and Guilding 1999; de Chernatony and McDonald 2003; Keller 2003; Kapferer 2008):

    - Leadership (25) – this factor indicates the brand's ability to dominate market share and to function as a market leader;

    - Stability (15) – long-established brands with large consumer loyalty have higher stability;

    - Market (10) – brands in markets like the food and drink industry are more valuable than brands in high-technology industries, because the latter are more affected by technological changes;

    - Support (10) – brands which consistently receive investment and support are viewed as more valuable than brands which do not;

    - Protection (5) – the presence of a registered trademark in a name and/or device increases protection;

    - Internationality (25) – brands with global dominance are regarded as more valuable than brands without; and

    - Trend (10) – the ability to remain contemporary and relevant to consumer needs is considered valuable.

By adding all the scores indicated in above parentheses, the maximum score for this multiplier or brand strength is 100, usually expressed as a percentage (Murphy 1990a; Keller 2003).

3. The next stage is to calculate the brand multiple. As shown in the above P/E ratio formula. The brand multiple is an indicator of confidence in a brand's future earnings, for which Interbrand developed an "S-curve" model which explains the relationship between the brand strength and the brand multiple (Murphy 1990a; Murphy 1990b; de Chernatony and McDonald 2003; Keller 2003; Kapferer 2008). This "S-curve" model is based on Interbrand's professional analyses of the multiples used in a number of takeover bids in recent periods. With reference to the P/E of the companies with the closest comparable brands, Interbrand will examine the company's profile and conclude the brand strength of the brand in valuation and plot the multiples against the brand strength scores in an S-shaped curve (de Chernatony and McDonald 2003; Kapferer 2008). The relationship between the brand strength scores and the brand multiples is positive, that is, the higher the brand strength scores, the higher will be the brand multiples (de Chernatony and McDonald 2003).

4. The relevant multiple derived from the above will be used in calculating the brand value by multiplying with the applicable net brand profit. That is:

Value of brand = Applicable net brand profit x Brand multiple

This formula is the most widely recognised approach to brand valuation, as it covers both financial and marketing perspectives and a future component (Cravens and Guilding 1999), has fewer disadvantages than other methods (Seethataman et al. 2001), and has proven its simplicity for non-specialists (Kapferer 2008). However, the Interbrand formula still has limitations. The brand weights calculation is based on past data which might not accurately translate into future earnings. Motameni and Shahroki (1998) have suggested a customer

survey would overcome this. Aaker (1996a) has noted that the Interbrand system does not take into account the potential of the brand to support brand extensions. Further, Aaker (1996a) believes that marketing investment might not result in direct correlation with brand value and that trademark protection might not help in creating brand value. De Chernatony and McDonald (2003) and Kapferer (2008) argue that market multiples (of the final transaction prices) were used to act as a reference for potting the S-curve for the brand in valuation, which was not a valid indicator of the strength of the brands as the final takeover price is already included the estimated brand value and a certain amount which might be due to the effect of overbidding. Kapferer (2008) further comments that using market multiples as a measure of brand value is dubious as it is only relates to the buyers' point of view of other transactions and the brand strength scores are calculated by an outsider without considering the synergistic benefits of the brand. Moreover, he argues the use of the brand multiple method is highly sensitive to small variations in the multiple and the validity of the S-curve is also questionable. He concludes this method is subjective and there are many hidden assumptions in the weightings which should be more transparent (Kapferer 2008).

It should also be noted that, while the components and their weights in the multiplier are specified, the scales and calculations are not publically revealed, presumably as Interbrand would, quite correctly, regard these as its own intellectual property. Furthermore, the multiplier and its components and their weights and scales are clearly the heart of the model and, although the Interbrand model is widely published and accepted, it is very difficult for outside observers to empirically test or validate. Furthermore, since the leading brands in the annual published Interbrand results are rarely bought or sold, it is difficult to establish the external validity of the Interbrand estimates. Perhaps the closest external validity measure of the Interbrand calculations is the share market valuation of the

companies, although, to date, no such analysis has been published. This would be an interesting and challenging topic for future research, although it would be squarely in the financial domain. Clearly a company such as Apple which is valued at US$118.86 billion in the current Interbrand results (Interbrand 2014) has a correspondingly high share market value, although the latter value is especially volatile.

2.5.5 Valuation by royalties approach

A brand's financial value can also be estimated by measuring directly the annual royalties, (a brand's financial contribution) that are received by a company when its brand is licensed to others who have the right to use the brand name. The advantage of this method is it can overcome the problem of separability from the accounting perspective (Kapferer 2008). It is also a simple method when compared with other financial brand valuation methods.

The shortcomings of the royalties approach are that it is not a very common practice in most goods and services markets, with the notable exception of the luxury and fashion markets; where the royalty fees not only include the legal sole right to use the brand name but are also often associated with the supply of basic materials, know-how, technology and services by the brand owner (Kapferer 2008).

2.5.6 Valuation by replacement costs approach

This approach overcomes the shortcomings of the historical costs approach and considers the costs needed to recreate a brand. A number of factors of the brand, such as awareness, market share, distribution network, image, leadership, quality of legal deposition, etc., would be taken into consideration when calculating the value of a brand in question and also it depends heavily on the opinions of experts (Kapferer 2008). As noted by Kapferer (2008), the objective of this valuation method is to get an idea of the economic value (but

not a financial value) of a brand. The subjectivity and ambiguity of the valuation method are the principal shortcomings of the approach. A weak brand can have a high replacement cost that lead to a high brand value is another shortcoming.

The Cravens and Guilding (1999), de Chernatony and McDonald (2003), and Kapferer (2008) classifications of financial brand valuation methods have been reviewed. However, it is also noted there are some other brand valuation methods developed by various consulting firms which seek to differentiate their methods or proprietary models for their marketing initiatives. Salinas and Ambler (2009) comment that there are many brand valuation methods (including those theoretic methods that have never be used in practice) available in the literature and these brand valuation method providers are just trying to complicate the classification in order to differentiate their methods. In fact they argue "much of this differentiation is little more than re-labelling" (Salinas and Ambler 2009, p.39).

Having reviewed the classifications of financial brand valuation methods and the major financial brand valuation methods above, it is clear that various brand valuation methods have different advantages, drawbacks and limitations. Firstly, the historical cost method is acceptable to accountants as it does not violate the fundamental principles of accounting but it is difficult to identify the indirect cost of brands and the development cost of brands with long histories. In addition, since it does not involve any projection of the brand's future income; it is of limited relevance to marketing and financial professionals. Secondly, the market-based method provides a financial brand value with a reference brand; however, when there is no market for selling the brands, it is difficult to find a valid comparator. Thirdly, the income-based approach has a number of drawbacks such as the subjectivity of discount rate and period for calculating cash flow. Fourthly, the formulary approach

(which includes the Interbrand method) is widely recognised by marketers and financial professionals. However, it has a number of drawbacks including the subjectivity and questionable validity of the market multiples in the prediction of a brand value. In practice, the brand value might include a certain amount due to the effect of overbidding. In addition, sensitivity of a small variation of the multiples to brand value, implicit assumptions on the weightings and the questionable validity of the S-shaped curve in indicating the relationship between the multiples and brand strength scores, collectively give cause for scepticism. Fifthly, the valuation by royalties approach cannot be easily applied in most of goods and services market as it is not a usual practice in most areas, except perhaps the luxury goods and fashion markets. Lastly, the valuation by replacement costs relies heavily on expert opinion and it has the problem of subjectivity. To summarise, all of the above financial brand valuation methods have various limitations and the problem of subjectivity, and (with the exception of the historical cost method) are not recognised by, or acceptable to the professional accounting bodies as they are at odds with the accounting principles of prudence. Accepting these reservations, the nature and context of the current research of the target industry (namely, the Hong Kong Continuing Education industry) preclude adopting any of the above measures.

Kapferer expresses clearly that "there is no single value for a brand" (Kapferer 2008, p.507) and it is not possible to arrive a monetary value of brand by a single valuation method which is equally accepted by accounting and financial professionals (Kapferer 2008). Accountants only accept the actual transaction price of an acquired brand as brand value to be posted in the balance sheet. (Accounting views on brand value will be discussed in details in the next Section 2.6.) They do not accept posting the internal value of brands in the balance sheet as this violates the accounting principle of prudence and therefore the value of internal brands as assets are not their primary concern. In contrast, financial

professionals are interested in knowing the value of existing brands from the perspective of projections of their future income and therefore they generally consider that internal brand valuation exercises for home-grown brands are legitimate and worthwhile.

Given the differences in perspectives and the lack of consensus, it seems highly likely that different brand valuation methods would result in widely different values for a brand. For example, different 2005 brand valuation estimates for Toyota, Samsung and Apple were calculated by Interbrand, Millward Brown Optimor and Vivaldi (Salinas and Ambler 2009). As the previous discussion showed, different brand valuation methods have different strengths and drawbacks. The choice of an appropriate brand valuation method will depend on the objective of the valuation, such as: for merger and acquisition, for the presentation of company accounts, for shareholder and investor information, for management control, for evaluating marketing communications and expenses, for information systems, for marketing training, etc. (Kapferer 2008). Furthermore, no single brand valuation method can satisfy different stakeholders of the company or managers working in marketing, law, accounting and finance disciplines. The aims of brand valuation should not be restricted to providing information on acquisition and/ or for accounting purposes. It can provide benefits to, and act as the means for communication between, a range of stakeholders.

In summary, this section has discussed the most widely cited finance-based approaches to brand valuation. As discussed above, only the historical cost method is acceptable to the professional accounting bodies, but this has significant disadvantages and limitations. Other methods of financial brand valuation have various limitations and suffer from the problem of subjectivity, and are not acceptable to accountants as they are at odds with established accounting principles. In the next section, accounting views on brand valuation will be discussed.

2.6 Accounting views on brand valuation

As mentioned in Section 2.1.1, since the large number of takeover bids for companies with strong brands in the 1980s, the subjects of brand equity and brand valuation have received considerable professional and academic attention, as is evident in the volume of research and articles which have been published. Academics and practitioners in the subjects, such as Aaker (1991), Keller (1993), Keller and Lehmann (2003) have provided the conceptual foundations for understanding the brand equity construct and its measurement (which are discussed in Section 2.2.3). However, despite the availability of various financial brand valuation methods and their discussion and use by researchers and practitioners, it remains true that financial brand valuation and accounting practices on brand value employ different perspectives and remain the subject of debate. In viewing the construct of brand valuation, financial professionals are typically concerned to know the discounted values of projected future income of the brands, which are typically somewhat subjective (and which violate accepted accounting principles). In contrast, accounting professionals are concerned with the recording of actual costs as expenses associated with the development and maintenance of brands (Da Camara 2007; Kapferer 2008). Coupled with the fact that different brand valuation methods might result in different estimates of a brand's value, such brand values estimated using various brand valuation methods are generally not acceptable to accountants (unless the brands are bought and sold to prove the validity of the estimates) as, in practice, they do not comply with the International Financial Reporting Standards (IFRS) (formerly known as International Accounting Standards (IAS) before 1 April 2001) and Generally Accepted Accounting Principles (GAAP) on the principles of prudence, objectivity and coherence through time (Kapferer 2008).

Kapferer (2008) claims that the debate on the identification of the value of brands and how such values should it be treated as assets is strictly an accounting issue, primarily as a means to evaluate marketing and advertising decisions as well as financial and tax implications of the investment in brands. He also argues such debates are international matters as these are related to the IFRS new rules of accounting which affect the accounting practices of corporations all over the world, especially in relation to the question of how to handle the brand values fairly when brands are acquired (Kapferer 2008). Da Camara (2007) also suggests that it is important for practitioners in the areas of economics, marketing, corporate reputation and for those who are concerned with the construct of branding to understand the accounting practices and regulations on brand valuation. Having discussed the major approaches to measuring financial brand valuation in the previous section and knowing that brand valuation models are generally at odds with the prevailing views of the accounting discipline, it is important to understand accounting practice and regulatory issues in relation to branding. The next section will therefore examine the current accounting perspectives on brand valuation.

2.6.1   Intangible assets and goodwill

At the most fundamental level, brands are regarded as intangible assets by the accounting profession. Intangible assets include intellectual property such as trademarks, copyright, client lists, brands and reputation. Intangible assets are frequently subjective and difficult to identify and value. In the absence of a financial transaction, recording their value as assets is generally contrary to accounting principles. Brands are usually not allowed to be reported in the balance sheet of the company with the exception of trademarks and copyright (Da Camara 2007), unless their value is reflected in a financial transaction, such as a sale or purchase. However, there are financial and tax implications in the case of acquired brands which are often associated with a difference between the book value of the

company assets and the transaction price. This difference or residual value will be treated as goodwill in the balance sheet of the acquiring company (Da Camara 2007, Kapferer 2008). In the accounting sense, goodwill includes brands, patents, know-how and databases (Kapferer 2008). Only acquired brands can be valued (by the transaction price) and booked in the balance sheet as this does not violate the principles of historical, cost and transaction-based accounting. The costs in developing internal brands can only be treated as expenses and deducted from company's income in current accounting practice. For these reasons, the monetary value of brands will frequently differ between financial and accounting perspectives and practices. Using the transaction price as indicating the real value of the brand at the time of purchase is regarded by accountants as objective; while using various brand valuation methods to estimate brand values would be regarded as subjective, as such values cannot be proved until the brands are bought and sold. The subjectivity in the financial brand valuation and its contravention of accounting principles might therefore result in fluctuations in brand value from year to year, which has a negative impact on the reliability of company accounts (Kapferer 2008).

There is, however, some evidence that accounting practices may be evolving to reflect better the valuation of brands. Recent regulatory developments in the accounting practice of valuing of intangible assets in company accounts have allowed accounting practice to move significantly from its previous focus on cash accounting to fair value accounting. The International Financial Reporting Standards on Business Combinations (IFRS 3) has allowed the purchase method of accounting to be used since 31 March 2004. That is, the valuation of intangible assets for acquisitions at fair value should be adopted (Da Camara 2007, p.12). The purchase method of accounting refers "the split of the purchase price into the fair value of the identifiable assets, liabilities and contingent liabilities with the excess being recognised as goodwill" (Da Camara 2007, p.13). The intangible assets can be

depreciated over the estimated useful life and the goodwill should be reported on the balance sheet. However, such regulatory changes in IFRS 3 in accounting practice only apply to takeover bids. For most organisations, internally generated intangible assets including internally grown brands are still treated as expenses, and not as assets, and such costs would not provide any value on balance sheet of the company accounts. The current regulations such as IFRS and Generally Accepted Accounting Principles (GAAP) do not require company accountants to record the information of intangibles and this also explains why it might be difficult for accounting and financial professionals to accurately calculate the brand value by using the historical cost method, especially in the case of long established brands. Currently, only the expenses of research and development and some brand development costs, such as market research and advertising, can be reported as an item in the company accounts as expenditures (Da Camara 2007).

In summary, since there are various financial brand valuation methods, it is likely that different methods would result in different brand values and thus it is improbable to have a single value for a brand. Similarly, accounting professionals have to follow the regulatory requirements governed by the IFRS and the accounting practices governed by GAAP, and thus, from a professional accounting perspective, it is not possible for them to accept the estimates of brand value typically calculated by brand valuation methods. Therefore, it is also practically impossible to have a single value for a brand which is equally accepted by both financial and accounting professionals. There is thus almost an inevitable gap between the brand value estimates of financial professionals and the actual transaction price of an acquired brand (except perhaps when the acquisition price is determined by a finance valuation model). From the accounting perspective, it is impossible to book all the internally generated intangible assets, including brand equity or reputation (except when a

company is sold), as either revenue or assets in the company accounts (Da Camara 2007, p.14).

2.7   Other brand equity valuation measures

The previous sections described six common financed-based approaches as well as accounting approaches to brand valuation. However, financial brand valuation is just one measure of brand equity that cannot always provide a complete measure of brand equity, and thus other measures should be included in brand equity valuation (Ambler 2003). In the following sections, other brand equity valuation models, the so-called "Global Brand Equity Model" proposed by Motameni and Shahrkhi (1998) and Moran (1993, 1994) model are presented.

2.7.1   Global Brand Equity Valuation Model – Motameni and Shahrokhi (1998)

Section 2.1 discussed the desirability of developing an integrated approach to measuring brand equity. The Global Brand Equity (GBE) Valuation Model of Motameni and Shahrokhi (1998) incorporates both financial and marketing perspectives. This integrated model is designed to provide a more comprehensive measurement capability in estimating the value of brand equity and its sources.

Motameni and Shahrkhi (1998) summarised the interrelationships of all the extant major brand equity models and found that all these models include at least one or more components of Aaker's (1991) model. They used this finding to develop their GBE model (Figure 2–8). The GBE model shares some elements with the Interbrand model, as both include a brand's net earnings and a brand's earnings multiple. The brand's net earnings is

actually the net present value of the differential earnings of a branded and an unbranded product.

Motameni & Shahrokhi's (1998, p.281) formula for the GBE model is:

$$GBE = \left\{ \overline{M} \left[\left[\left(\sum_{i=1}^{n} \sum_{j=1}^{n} W_{ij} \, CB\overset{m}{PF}_{ij} \right) + \left(\sum_{i=1}^{n} \sum_{j=1}^{} W_{ij} \, C\overset{m}{PF}_{ij} \right) + \left(\sum_{i=1}^{n} \sum_{j=1}^{} W \, G\overset{m}{PF}_{ij} \right) \right] / 30 \right] \right\} BNE_{ij}$$

where:

GBE	=	global brand equity
$\overline{M}$	=	maximum possible multiple in the industry
W_{ij}	=	the importance of factor J in country I
$CBPF_{ij}$	=	the value of customer base potency factor j in country I
CPF_{ij}	=	the value of competitor potency factor j in country I
GPF_{ij}	=	the value of global potency factor j in country I
BNE	=	brand net earnings

Note: The brand strength will not be directly multiplied by $\overline{M}$. It will be determined through the application of an S-curve.

The model consists of Brand Strength Factors with three major components (Figure 2–8): "customer base potency", "competitive potency" and "global potency". These, in turn, are correlated with the calculation of the "Brand Multiple". The factors making up these three potencies are synthesised from Aaker's (1991) models and Interbrand's model as described by Kapferer (1992) (Motameni and Shahrokhi 1998).

First, the brand strength is calculated (Motameni and Shahrokhi 1998), by assigning 100 percentage points to each of the above-mentioned potencies and using a scale of −10 to 10 (−10 is the least favourable score, 10 the most favourable). Management has to determine the weight of each factor, then multiply with the score of each factor, and the sum of the scores will give a total brand strength score. Since the maximum for each factor will be 30 points, the total score has to be divided by 30 and expressed as a percentage. Following the

Interbrand approach, by putting together the known brand strength score and using the S-curve, the multiple can be calculated (Motameni and Shahrokhi 1998).

Brand Strength Factors

Customer Base Potency
◆ Brand Image & Brand Loyalty
◆ Brand Awareness
◆ Brand Association
◆ Perceived Quality

Competitive Potency
◆ Brand Trend
◆ Brand Support
◆ Brand Protection
◆ Competitive Strength

Global Potency
◆ Market Factors
◆ Promotion & Personal Selling Factors
◆ Distribution Factors
◆ Product Factors
◆ Price Factors
◆ Regulation Factors

Brand Multiple × Brand Net Earning = Brand Return – Generic Return = GBE

Figure 2-8. Global brand equity (GBE) valuation model
Source: Motameni & Shahrokhi (1998, p.282)

The GBE is a synthesis of various brand equity models, and Motameni and Shahrokhi (1998) argue that it addresses the shortcomings of other models. Their model aims to incorporate both marketers' and financial professionals' concerns, in that it estimates the value of a brand and also includes the customer-based, the competitive and global perspectives (potencies) into the value. Thus their proposed model purports to include Aaker's (1991) brand equity conceptualisation and to take competitive information and global perspectives into consideration (Motameni and Shahrokhi 1998). However, there is limited evidence that the model has been thoroughly tested. Furthermore, the model has limited application for many local industries, because to a certain extent, many local industries have neither publicly available data, nor a global perspective. (The Hong Kong

Continuing Education industry, the focus of the present study, has neither.) Perhaps most tellingly, however, in the period since its publication in 1998, there is no evidence that Motameni and Shahrokhi's model has been adopted in the academic or professional branding literature. Evidently, the complexity of the proposed model outweighs its likely utility, especially for businesses.

2.7.2   Longman-Moran Brand Equity Model

The Longman-Moran Brand Equity Model, proposed in 1993 by Longman-Moran Analytics (Moran 1993, 1994), can be applied to all categories of products and services. The total brand equity calculated by the model is a product of three items: the market share of a company or a brand, the relative price of a company and durability (Moran 1994, p.274):

Total Brand Equity = Market Share * Relative Price * Durability

Moran (1993) argued that market share multiplied by relative price is equal to the worth of the brand to consumers today. He called this the Brand Value, which is "a measure of the past contribution of marketing to current profitability relative to competition" (Moran 1994, p.274). He also suggested that the relative price multiplied by durability, which he called Unit Equity (or relative loyalty), reflects the value of a brand to customers tomorrow (Moran 1993). In Moran's (1994) formula for brand equity, market share is the weighted average market share across all segments. Relative price is the price of a brand divided by the average price of all products, and durability is the relative unit volume change divided by relative price change market cross-elasticity (Moran 1994, p.275). However, Moran (1993, 1994) did not indicate clearly how to calculate the durability, nor did he clearly define "relative unit volume change" and "relative price change market cross-elasticity".

Thus durability appears to be a measure of the stability of the brand's sales relative to the industry's stability. He suggested that "durability" can be derived from market data, such as weekly scanner data, to obtain market information about price, sales and volume of both a brand and the whole industry. In the absence of available market data, he suggested that a consumer survey developed by his team could estimate the market information, although he provided no details of the survey or how durability was calculated.

The brand equity model proposed in the current study conceptually resembles the Moran (1993, 1994) methodology and was developed independently to suit the particular research context. It uses the first two components, namely, "market share" and "relative price", but it replaces the "durability" component with a proxy measure of "loyalty" (that is, an estimate of the average duration of a respondent's relationship with that particular institution) in the formula. The proposed model will be discussed in detail in Section 2.9.

This section has discussed another two documented models for the measurement of different perspectives (both marketing and financial) of brand equity. The next section discusses the need for an integrated brand equity valuation model.

2.8 The need for an integrated brand equity valuation model

Brand equity is complex, broad and multi-faceted, and no single measure can adequately measure the construct (Keller 1993; Park and Srinivasan 1994; Feldwick 1996; Ailawadi et al. 2003; Pappu et al. 2005; Raggio and Leone 2007; Christodoulides and de Chernatony 2010). Though there are various brand equity valuation methods available in the literature for consideration; however, there is still no generally accepted measure for measuring brand equity which is both comprehensive and accessible. Cobb-Walgren et al. (1995, p.27) support Lipman's (1989) view that "there is not even agreement on the relative strengths

and weaknesses of each" of the various brand equity measurement methods available in the literature. Numerous scholars agree that it is not possible for a single measure to explain fully and capture the different dimensions and sources of brand equity. Rather, they argue that it should be measured by a set of measures rather than relying on any single brand equity measure (Keller 1993; Cobb-Walgren et al. 1995; Feldwick 1996; Christodoulides and de Chernatony 2010). Yet, at the same time, major companies are increasingly coming to accept the importance of gathering, reviewing and prioritising various measures of brand equity (Haigh 1997).

As discussed above in Section 2.1.2, brand equity can be broadly viewed from two perspectives: consumer/marketing and financial. Marketers tend to focus on identifying the sources or drivers of brand value and they are interested in how the value of a brand is created and its consequences in behavioural terms. Financial professionals, on the other hand, are interested in the financial value of brand equity (Motameni and Shahrokhi 1998); that is, the value of the brand as an asset. This view can take on particular importance in the circumstances of mergers and acquisitions of companies whose major assets include their brands. For example, Nestlé acquired the English Rowntree confectionary company for £2.5 billion – some eight times its book value (Murphy 1990a). In practice, marketing and financial scholars and practitioners seem to speak two different languages in terms of brand equity valuation and, as a result, a number of brand valuation models focus on different aspects of brand equity.

Cooper (1998) argues that the main objective of brand valuation is financial, and stresses the importance of an accepted methodology for valuing brands in financial terms. Many researchers have focused on the quantitative measurement of brand value, rather than exploring the nature of brand equity, which is equally important (Eagle and Kichen 2000).

Faircloth et al. (2001) stress that the focus should be placed on measuring brand associations, like images and attitudes, rather than measuring brand equity as an aggregate financial performance outcome. According to Cobb-Walgren et al. (1995) and Jones (2005), brand equity can be discussed from the perspective of the added value to different stakeholders of the company; namely, the investor, the manufacturer, the retailer or the consumer, etc. To the investor, the main concern for them in brand equity is to have financial benefit that derives from the value of the brand equity beyond the value of the company's other assets. Manufacturers and service firms need positive and strong brand equity enabling them to benefit from a differential advantage in generating greater volume and margins, providing a platform for introducing a new product or product extension, and to provide a shelter and make them less vulnerable against competitors' attacks. To the retailer, brand equity can help to strengthen the overall image of the retail outlet, guarantee customer volume and lower the risk in the allocation of shelf space (Cobb-Walgren et al. 1995). Cobb-Walgren et al. (1995) argue in favour of customer-based brand equity since, after all is considered, "none of the above mentioned value from brand equity is meaningful unless there is value for consumers" (Cobb-Walgren et al. 1995, p.26).

While researchers such as Srinivasan (1979), Kamakura and Russell (1993) and Swait et al. (1993) have developed methods of estimating a brand's equity, these do not help managers understand the sources of brand equity and the directions/strategies for improving it (Park and Srinivasan 1994). Christodoulides and de Chernatony (2010) have commented that a number of methodologies of measuring brand equity described in the literature require the sourcing of detailed data and the application of complex statistical techniques, which are typically difficult for marketing practitioners to use (Christodoulides and de Chernatony 2010). Indeed, there is little relevance in valuing a brand financially if the underlying value of the brand has not been properly developed in consumers' minds from the firms'

investment in marketing programs or if managers have little idea of how to use that value for building branding strategies (Keller 1993).

De Chernatony and McDonald's (2003) conceptualised model can be seen as an exception to the above criticisms. It covers the core dimensions of brand equity proposed by Aaker (1991) and Keller (1993) in measuring brand equity by measuring brand attributes and brand strength and, they argue, this will be reflected in the financial value of the brand. They suggest a brand's financial value can also be assessed by considering aspects such as historic cost, premium price, market value, and future earnings discounted to present-day values. However, they concede that measuring marketing perspectives of brand equity cannot produce an objective financial value of a brand (de Chernatony and McDonald 2003). It is difficult to achieve a tangible objective value based on intangible or subjective concepts. Therefore, it can be argued that brand equity should best be measured using an integrated approach.

Interbrand, which developed their financial brand valuation model for Rank Hovis McDongall in 1988 (Murphy 1990a), has become the most widely recognised source and their approach the most widely accepted methodology for brand valuation. Interbrand has conducted more than 3,500 brand valuations in over 20 countries since the company was founded in 1974. Interbrand (2004), in common with many scholars and practitioners, believes that the brand evaluation models currently available are either purely financially driven approaches or research-based brand equity evaluations.

Financially driven approaches tend to cover aspects such as cost-based approaches, premium price and economic use approaches. Yet a number of these approaches have flaws (Interbrand 2004). For example, the historic cost incurred in developing a brand has

no direct correlation with the value added by that brand. Similarly, the premium price method relies on finding a suitable generic equivalent brand for comparison (Interbrand 2004).

Research-based brand equity evaluations typically use consumer research techniques to assess brand performance, without putting any financial value on the brand. These models try to measure consumer behaviour, attitudes and perceptions associated with the brand – such as level of awareness, knowledge, familiarity, relevance, image attributes or brand association, personality, satisfaction – and their intention to purchase and subsequent loyalty. Clearly, any one of these indicators could affect consumers' purchasing decisions, in turn affecting the financial value of that brand. On the other hand, even a brand defined as strong in a research-based evaluation may fail to create financial and shareholder value (Interbrand 2004), and so integrating both research-based and financially driven perspectives is essential.

The Global Brand Equity model developed by Motameni and Shahrkhi (1998), represents a synthesis of various brand equity models, and consists of both marketing and financial perspectives of measuring brand equity. Regrettably, however, it has not been tested in the public domain by any researchers, including Motameni and Shahrkhi themselves. It also requires expert opinion and publicly available market and financial data to calculate brand equity, and it is suggested to be applied in a global context. This model is ambitious and complex and therefore not applicable either to many businesses, or the context of the current study. However, their model did suggest a direction for the researcher to consider an integrated approach for measuring brand equity in a local context to fill the gap in the literature and to contribute to better informed brand management practices.

In short, scholars and practitioners agree that both the marketing and financial approaches to brand equity have their own advantages and disadvantages. No single measure can fulfil all requirements of both marketers and finance personnel because the brand equity concept is a complex and multi-dimensional construct. Marketers have conceptualised brand equity from a consumer perspective in order to understand the behavioural drivers as sources of brand equity, but they have been less successful in measuring the brand equity in terms of dollar value. Financial professionals have been more concerned with quantifying the financial value of brand equity without considering how such value is created and enhanced. There is clearly a need, therefore, for a unified brand valuation method that can address these two divergent perspectives and which can be easily used by marketers as well as being understood and accepted by the accountants/financial personnel. In order to fill the gap, this study will focus on developing and testing a proposed brand equity methodology which can be operationalised by many firms and industries, using their own data and affordable resources to understand the sources and the strength of their brand equity and assess their brand values. The next section outlines a proposed brand equity valuation model for the study.

2.9   A proposed brand equity valuation model for the study

Previous sections have discussed why existing measures of brand equity are not universally applicable to all firms and industries. The purpose of this study, therefore, is to propose a methodology that can be operationalised by most businesses, at modest cost, in a local context to explain both consumer and financial dimensions of their own and the industry's brand equity, by using a single survey and the firm's internal data. As discussed in above Section 2.8, the current study examines brand equity from two perspectives: financial and marketing (customer).

As discussed in above Sections 2.1.1 and 2.1.2, consumer-based brand equity is widely accepted to consist of four dimensions: namely, brand awareness, brand associations, perceived quality and brand loyalty, drawn from Aaker and Keller's models (Yoo and Donthu 2001; Pappu et al. 2005; Buil et al. 2013). Brand awareness impacts on brand associations, while perceived quality is influenced by brand associations and brand awareness, and brand loyalty is influenced by brand awareness, brand associations and perceived quality (Aaker 1991; Keller 2003). However, Aaker (1991) has raised an important conclusion that the four dimensions of brand equity are causally interrelated but the precise nature of the relationships remains unclear. Similarly, Buil et al. (2013) comment that few studies have empirically examined how the dimensions of brand equity are inter-related. Adapting from Aaker (1991) and Keller's (1993, 2003) CBBE frameworks, the customer-based dimensions of brand equity in the proposed model include four variables: brand awareness, brand associations, perceived quality and brand loyalty and, in particular, the researcher proposes a customer-based model of brand equity to test the causal interrelationships among the four dimensions of brand equity suggested by Aaker (1991) and Keller (2003) as well as their relationships to customer' behavioural intentions in the context of the Hong Kong continuing education industry.

As discussed in the previous Sections 2.5.1 to 2.5.6, the current available brand valuation methods are not readily applicable to many organisations and industries, since the necessary raw data and information required for calculating/measuring of the brand are usually not readily available at the organisation or industry level. At such, the Moran (1993, 1994) model was chosen for the study because of the accessibility of the component data with affordable financial resources (by means of collecting via survey), the logic and relatively simplicity of the model, and because its conceptual foundation is consistent with common components of other brand equity models. The proposed financial model displays

commonalities with the Moran (1993, 1994) brand equity model, and incorporates two variables (market share and price premium) from Keller and Lehmann's (2003) brand performance measures.

The details of the operationalisation of the proposed customer-based brand equity model will be discussed in Chapter 4. The details in calculating the proposed financial model are described next.

2.9.1   Proposed brand equity valuation model: customer-driven approach

In reference to Aaker (1991) and Keller's (1993, 2003) CBBE frameworks, and Moran's (1993, 1994) brand valuation model, the brand equity model developed in this study is designed to be capable of being operationalised by any organisation or industry with affordable resources as well as being easily understood by accounting, management and marketing professionals.

The model utilises a financial perspective to calculate total brand equity. The study uses an existing Hong Kong continuing education (CE) institution as an illustrative example. (The rationale of choosing continuing education for the study will be discussed in detail in the next chapter). The brand equity of continuing education institutions in the proposed model here is a product of four items: namely (1) the market share of the institution or the brand, (2) total industry sales revenue, (3) the average price premium of the program paid by "customers" of that particular institution, and (4) average loyalty of "customers" of that particular institution. These components broadly reflect the logic of the Moran (1993, 1994) model discussed previously, although the operational definitions vary, largely reflecting issues associated with data collection. In particular, the proposed model replaces Moran's

(1993, 1994) "durability" measure with a proxy measure of customer loyalty. The proposed model is illustrated by the following formula:

$$BE_k = IR * MS_k * PP_k * AR_k \qquad \text{(formula 1)}$$

where

BE_k = brand equity of institution k

IR   = total industry sales revenue

MS_k = market share of the institution k

PP_k = overall average price premium of program paid by respondents to institution k

AR_k = overall average number of years of respondents' relationship to the institution k

According to Ailawadi et al. (2003, p.2), price premium should be measured "either by asking consumers how much more they would be willing to pay for a brand than for a private label or an unbranded product or by conducting conjoint studies in which brand name is an attribute". Since there is no private label or unbranded service in the Hong Kong CE industry, price premium (PP) in the study is analogous to "relative price", used in the Moran (1994) model, and will be calculated using the overall average price of programs paid by respondents to institution k divided by the overall average price of programs paid by all respondents in the CE industry as a whole. Market share will be calculated by the total number of respondents who studied the CE programs at institution k during the survey year, divided by total number of respondents who studied the CE programs in the whole CE industry during that year. Loyalty (represented as "AR" in the above formula 1) will be calculated by the average duration of the respondents' relationship with that institution k.

After calculation of the brand equity of each institution, the total amount represents the overall brand equity value, at a point in time, for the average number of years of customer relationships with the CE institution. This total amount has to be converted by a

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"Discounted Present Value" formula to reflect the present value of the brand equity value at the base year. Since different CE institutions will logically have different overall average number of years of respondents' relationships (that is, average loyalty), the brand equity amount calculated from formula 1 has to be discounted to present value using an appropriate compounding interest rate[2] (Sizer 1989). Considering the characteristics of the CE industry, the number of years, that is "n", of the "Discounted Present Value" formula, will be replaced by the overall average number of years of respondents' relationship to the institution k, AR_k. The model formula will become the following:

$$BE_k\,(PV) = BE_k\,/\,(1+i)^{AR_k} \qquad\qquad \text{(formula 2)}$$

where

BE_k = brand equity of institution k

i = rate of interest

AR_k = overall average number of years of respondent relationship to the institution k

Based on the formula, it is also possible to calculate the brand equity of any, and all, other institutions by using the data from the same survey of relative market size of that institution, the average premium price of its programs compared with the industry average and average length of respondents' relationships with that particular institution. The brand equity calculation of all institutions in the industry is logically the sum of the equity of all players, including whether they are the major players or not, can therefore be derived from the same survey data, provided the sample size for each institution is sufficient for the analysis. In addition, while the calculations depend for their validity on survey data, the accuracy or otherwise of these BE calculations can be assessed by cross-referencing with available secondary data researched in different local publications, such as real financial

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[2] According to the formula listed by Sizer (1989, p.235), the formula for calculating the discounting compound interest rate to present value is "$1/(1+i)^n$; where i is the rate of interest and n is the number of years."

data of key players and published government or industry statistics. Beyond the calculation of (financial) brand equity, the proposed customer-based model can also help industries to understand how to identify the important drivers of the components of the BE model for managing the brand equity of their institution; that is, by examining the causal interrelationships among the dimensions of brand equity and identifying which dimensions of customer-based brand equity have significant impacts on consumers' behavioural intentions and willingness to pay a higher fee. (This view reflects the "customer based brand equity" perspective discussed earlier in this chapter.)

Beyond the calculation of current BE valuation, the model also should provide a basis for institutions in managing their future branding strategies and brand building. Ongoing annual brand health checks are recommended for providing up-to-date information about the rationale and implementation of brand-building strategies. The model developed in the present study will further provide industry-wide information on brand equity which is usually not readily available for many local industries, but its application should be capable of being extended to analyse data longitudinally over several years. Such longitudinal analysis should form the basis of brand equity benchmarking as a guide to managing brand equity over time.

The current study focuses on the brand equity of the Hong Kong CE industry, and branding in higher education will be discussed in the next section.

2.10 Branding in Higher Education

2.10.1 Branding in higher education

As discussed in the previous section, brand equity has been extensively researched since the concept emerged in the last two decades. It has been noted that branding and brand

equity have been important concerns in the marketing literature for many years (Balaji 2011), and there is clear consensus among scholars and practitioners that building a strong brand can help generate and sustain competitive advantages for the company which results in greater market share and profitability (Farquhar 1989; Aaker 1991; de Chernatony 1991; Cooper 1998; Keller 1993, 2001, 2003; Lassar et al. 1995; del Río et al. 2001; Campbell 2002; Temporal 2002; Ambler 2003; de Chernatony and McDonald 1998, 2003; Hoeffler and Keller 2003, Pappu et al. 2005; Kepferer 2008; Christodoulides and de Chernatony 2010; Balaji 2011). However, it should be noted that the discussion of brand equity has been largely focused in the context of tangible products, commonly fast-moving consumer goods, while comparatively less attention has been directed to brand equity in service industries and, in particular, the topic is less explored in the higher education sector (Dibb and Simkin 1993; Cobb-Walgren et al. 1995; Turley and Moore 1995; Krishnan and Hartline 2001; Chapleo 2007; Mourad et al. 2011). This lack of attention might be due to the reason that marketing in the service sector is arguably more challenging than in the consumer goods sector because of the intrinsic characteristics of services and the pre-requisite factors such as consumer experience and belief (de Chernatony and Dall'Olmo Riley 1999; Mourad et al. 2011). When compared with physical products, the four unique characteristics of services are intangibility, inseparability, heterogeneity/variability, and perishability (Zeithaml et al. 1985; Dibb and Simkin 1993; Langford and Cosenza 1998; de Chernatony and Dall'Olmo Riley 1999; Mazzarol and Soutar 1999; Enache 2011). Hence, consumers find it more difficult to evaluate a service than a tangible product in advance of consumption. Because of the intangibility, the brand (and brand equity) will arguably play an even more important role in providing consumers with greater confidence and trust in their purchase decision in the service context (Onkvisit and Shaw 1989; Bharadwaj et al. 1993; Dibb and Simkin 1993; Turley and Moore 1995; Berry 2000; Mourad et al. 2011). In particular, perceived risk is usually higher in a service purchase and selection decision

(Mitchell, 1999; Laing et al. 2002). In this situation, the brand can act as a risk reliever in the consumer's decision process of service purchase and choice (Mourad et al. 2011). As noted in the review previously in the chapter, a number of scholars and researchers have confirmed the advantages of building a strong brand, and the conceptualisation of brand equity and its models developed by various marketing scholars and practitioners can arguably be equally applied in both goods and services sectors. Nonetheless, there is little published empirical research on how to brand a service or examining how to apply branding principles and practices developed from physical goods to services. In fact, there remains some disagreement about which branding principles of physical goods can be applied or adapted to service sectors (de Chernatony and Dall'Olmo Riley 1999; Moorthi 2002; Hemsley-Brown and Goonawardana 2007).

Against this background, education is recognized as one, albeit very important, type of service (de Chernatony and Dall'Olmo Riley 1999; Mazzatol and Soutar 1999; Hemsley-Brown and Oplatka 2006; Enache 2011; Williams and Omar 2013). Just as the concept of brand equity emerged in the late 1980s, the concept of marketing has been increasingly regarded as important in the higher education sector since the 1980s (Kotler and Fox, 1995). Similarly, Oplatka and Hemsley-Brown (2004) have examined the literature on higher education marketing and they found that the marketing literature in higher education originated in the United Kingdom and the United States in the 1980s. Although marketing in higher education has become increasingly important, research in the field remains currently in the pioneer stage and further research is required (Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Durkin et al. 2012).

As research in higher education marketing is relatively limited, there is currently a lack of theoretical models that truly reflect the context of higher education. In addition, there is arguably inconsistency in the literature and research on higher education marketing, although this is not unexpected in the early stages of any such emerging research field. Moreover, the published research on higher education marketing is mainly adapted from the conceptualisations and models used for services marketing in the context of business practice without any major contextual reconsideration or adaptation. Thus, the models might be inappropriate or even incompatible with the context of higher education institutions due to the inherent contextual differences between universities and other industries and institutions (Hemsley-Brown and Oplatka 2006; Durkin et al. 2012).

Against this background, not surprisingly, a literature search revealed a relative paucity of research papers examining the issue of branding in higher education or applying branding theories in the context of universities, despite the increasing importance of the topic over recent years (Chapleo 2005, 2007, 2011; Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Wæraas & Solbakk 2009). For example, it has been increasingly recognised by academics and practitioners that brand is one of the important sources of sustainable competitive advantage in UK higher education (Chapleo, 2005). The available papers revealed in the literature search are focused mainly on theoretical rather than empirical research (Hemsley-Brown and Goonawardana 2007). Hemsley-Brown and Goonawardana (2007) concluded that the available literature on international branding in higher education tends to focus on collecting international students' perceptions of marketing activities in the recruitment of international students and the assessment of its effectiveness. Similar to the research in higher education marketing generally, the branding research in higher education is not only found to be relatively scarce; but it is also viewed as being at a pioneer stage (Hemsley-Brown and Goonawardana 2007). Moreover, there is

also little empirical research on models developed or adapted to the context of branding and brand equity in higher education; and it is equally limited in areas such as brand metrics, the objectives of branding activities or branding expenditure in higher education. This is despite the fact that research on brand and brand equity has been conducted and published for several decades. Such limited empirical research as has been published is typically adapted from the branding or brand equity practices/ models which were mainly developed for the use in business practice in the private sector without any major contextual adaption. Hence, the current thinking and practice of branding in higher education institutions is generally a product of simply transferring the business practices in branding from the commercial sector. (Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Wæraas & Solbakk 2009; Chapleo 2011; Durkin et al. 2012). For example, Mourad et al. (2011) adapted the brand equity models primarily of Keller (1993) and Aaker (1991) to a lesser extent, in order to examine the brand equity in the service sector and, in particular, in the context of higher education in Egypt. Their findings provide empirical support for the proposition that brand equity is a significant factor of the choice of University. The results of their empirical research prove partial support for their proposed brand equity model: "brand awareness" was not a statistically significant driver of brand equity in higher education while "brand image"-related determinants were found to be statistically significant drivers of brand equity in their research (details will be further discussed in the following section 2.10.4). It is therefore argued that there is still a relative lack of theoretical and/or practicable branding models which are specific to the context of higher education for reference and use (Hemsley-Brown and Oplatka 2006; Chapleo 2007, 2011; Williams and Omar 2013) and more research is required because of the growing importance of the topic and the lack of empirical branding studies in the higher education sector (Wæraas and Solbakk 2009).

Chapleo (2005, 2007, 2011) and Johnston (2001) argue universities should adopt the concept and practice of branding in higher education; however they stated that there is still a long way to go for universities in understanding and applying the branding concept to the specific context of higher education. In addition, there are also increasing challenges to the suitability of the application of branding concepts from the commercial sector to higher education (Jevons 2006; Temple 2006; Wæraas & Solbakk 2009; Chapleo 2011).

According to Hemsley-Brown and Oplatka (2006), higher education marketing is at a relatively new and pioneer stage, although they concluded that there have been some studies which examined the notions of image and reputation, while concluding that "the notion of branding has barely made its mark in higher education marketing" (Hemsley-Brown and Oplatka 2006, p.333). Given the fact that the current study specifically focuses on the issue of brand equity of the Hong Kong CE industry; the current section will focus mainly on the branding literature in higher education rather than the wider context of the marketing literature in higher education. Branding in higher education is, however, an important theme in the higher education marketing literature (Hemsley-Brown and Oplatka 2006).

This section begins with a discussion of the phenomenon of branding in higher education; followed by why people are concerned about branding in higher education; the theme of studies in the research in marketing and branding in higher education; and discussion on the feasibility of branding in higher education. Key challenges facing successful branding activity in universities will be discussed next; then, the relationships between university brand, reputation and league table positioning will be addressed, followed by a short summary of the section.

2.10.2 Why are people concerned about branding in higher education?

In recent years, universities have been facing an increasingly competitive environment, similar to that faced by many other commercial organisations. In this circumstance, higher education institutions are striving to differentiate themselves in order to improve their competitive positions. Branding is increasingly recognised as one of the important sources of sustainable competitive advantage. The severe competition among the universities is not limited to domestic institutions as competition in the higher education market has become an increasingly intense and global (Chapleo 2005; Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Lockwood and Hadd 2007; Judson et al. 2009; Wæraas & Solbakk 2009; Williams and Omar 2013) especially in the major-English speaking countries: for example, the United States, Canada, United Kingdom, and Australia (Binsardi and Ekwulugo 2003). This severe competition among universities will not ease as long as the demographic change and the ongoing decline in the student number of eighteen years old continues (Enache 2011, Durkin et al. 2012). Decreasing government/university funding and government-backed recruitment campaigns; and the re-designation of polytechnics to universities such as in the UK in 1992, have all combined to trigger severe competition among universities (Durkin et al. 2012). Increasing competition for international students among the higher education institutions is also a result of increasing global student mobility (Hemsley-Brown and Goonawardana 2007); as well as technological and social changes (Judson et al. 2009). All these environmental changes have stimulated the need for higher education institutions to develop distinct brand identities to differentiate themselves and apply marketing and branding principles for universities to attract and retain students (Chapleo 2004; Hemsley-Brown and Goonawardana 2007; Wæraas & Solbakk 2009; Durkin et al. 2012; Williams and Omar 2013). In addition, Williams and Omar (2013) provide some further reasons for the increasing importance of branding in higher education including: declining domestic

student enrolments, decreased retention and overall competition; strengthening image; increasing financial resources; honouring a donor; mission alignment; or signifying a merger between higher education institutions (Williams and Omar 2013, p.248).

In order to cope with the changing environment and more severe competition, universities have been increasingly applying marketing concepts in order to differentiate their institutions (Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007, Williams and Omar 2013). Consequently, branding in higher education has become a new, increasingly important and topical marketing issue in the university sector and is supported by evidence that universities have committed more financial resources to branding activities (Temple 2006, 2011; Chapleo 2005, 2007, 2010, 2011; Judson et al. 2009; Wæraas and Solbakk 2009; Durkin et al. 2012; Natale and Doran 2012; Mourad 2013; Williams and Omar 2013). For example, about two-thirds of UK universities have raised their marketing investments by 10-20 per cent over the last three years (Stamp 2007), in seeking to increase competitive advantage, develop distinct brand identities to attract and retain students (Durkin et al. 2012; Natale and Doran 2012). Due to the fact that it is a relatively new topic in the higher education sector and higher education branding is inherently complex, the application of branding theories from the commercial sector to higher education institutions is arguably debatable as to its suitability (as argued by scholars that it is simplistic) and efficiency. Further, even the marketing professionals' views on the objectives of branding activities in universities are arguably inconsistent (Temple 2006; Wæraas & Solbakk 2009; Chapleo 2011). Therefore, it can be concluded that there is currently a clear need for better understanding of the importance and role of branding in the particular context of higher education.

2.10.3 Themes of study of higher education marketing and branding

As discussed in the beginning of the section, it has been found that there is a paucity of research on branding universities despite the increasing recognition of the importance of branding in academia. At the same time, it is also widely agreed that there is also relatively limited research on the marketing of higher education generally. In this context, Hemsley-Brown and Oplatka (2006) have conducted an extensive literature search on higher education marketing (including branding as one of the topics from business and management databases. The search periods were restricted from 1992 to 2004 and resulted in 63 papers (both empirical and theoretical) being selected. After scrutinizing these papers for their relevance to the review, 15 empirical research studies were shortlisted by Hemsley-Brown and Oplatka for their review of literature on marketing of higher education. The 15 empirical studies were classified by Hemsley-Brown and Oplatka into two main design categories: problem identification and problem solving research. Problem identification refers to research focused on the problems or challenges of higher education marketing while the "problem solving" research refers the application of marketing practice to higher education institutions. In addition, Hemsley-Brown and Oplatka (2006) further classified these 15 empirical papers into different themes of higher education marketing: marketing communications, image and reputation, application of marketing models, relationship marketing, strategic marketing, the problem identification approach, such as changes in government funding, and the strategic tools of marketing including segmentation, targeting, positioning and branding.

For marketing communication, three studies focused on print communications (Mortimer 1997; Gatfield et al. 1999; Hesketh and Knight 1999), and one paper studied Kotler's (1996) "five-level-model" of relationship marketing (Klassen 2002). In addition, several studies focused on the image and reputation of higher education institutions; old

universities in UK or South Africa, or the image of universities in UK (Bakewell and Gibson-Sweet 1998; Ivy 2001; Nguyen and LeBlanc 2001; Binsardi and Ekwulugo 2003), and Oplatka (2002) studied the lower-status universities in Israel and their need to increase their organisational image to attract students. Moreover, the application of marketing models: the 4Ps transactional marketing model and relationship marketing model were discussed in some papers. Binsardi and Ekwulugo (2003) used the 4Ps model in understanding international students' perceptions of UK universities and their performance in the international education market; and also they provided a literature review to link relationship marketing to the services marketing discourse. Furthermore, two papers conducted research based on relationship marketing theory (Klassen 2002; Arnett et al. 2003) and one paper adopted a relationship marketing model to study the benefits for universities (Trim 2003). Next, two major approaches related to strategic marketing. Firstly, the problem identification approach examined the government agenda such as widening participation in education and change in government funding (Ball et al. 2002; Reay et al. 2002; Brookes 2003; Farr 2003), and secondly, the problem solving design suggested applying business marketing theory and strategies to higher education, for example market segmentation (Tonks and Farr 1995; Soutar and Turner 2002; Farr 2003; Rindfleish 2003), market targeting (Farr 2003), market positioning (Nicholls et al. 1995; Ivy 2001; Farr 2003; Gray et al. 2003) and lastly, branding (Gray et al. 2003). The latter study focused on branding in examining which media were perceived by international students as the most important sources of university information (Hemsley-Brown and Oplatka 2006).

As was discussed in section 2.10.2, some authors argue that the application of branding theories from the commercial sector to higher education is rather debatable, (Temple 2006; Wæraas & Solbakk 2009; Chapleo 2011). More fundamentally, although it has been attracting increasing attention in higher education marketing, some scholars question the

appropriateness of the application of marketing concepts and practices from the business sector to higher education (Barrett 1996; Gibbs 2001, 2002; Hemsley-Brown and Goonawardana 2007; Durkin et al. 2012). Barrett (1996, p.70), for example, has commented: "It is both regrettable and ominous that the marketing focus, explicitly borrowed from business, should be accepted and even welcomed". Given that this debate continues, it could be argued that it is necessary to appropriately re-conceptualize and adapt recognised marketing tools, practices and strategies from the commercial sector to the context of higher education.

In addition, Wæraas and Solbakk (2009) most recently also noted that branding studies in higher education typically adopt an external focus on branding rather than internal focus, which would examine what has happened in the course of branding processes in specific higher education institutions. They argued that there are only a few empirical studies which focus on branding in higher education; including the themes of communication of university brands (Belanger et al. 2002; Bulotaite 2003), branding polices such as university brand identity or architecture (Baker and Balmer 1997; Chapleo 2004; Hemsley-Brown and Goonawardana 2007) and international branding (Gray et al. 2003). In addition, there are some papers examining the emergence of brand identities (Lowrie 2007), the pros and cons of branding (Stensaker 2007), and also asking if universities can have successful brands (Chapleo 2005) (Wæraas and Solbakk 2009, p.452). In view of the knowledge gap, Wæraas and Solbakk (2009) conducted research to analyse the branding process in a Norwegian university. They started data collection in 2002 and followed the subsequent events until the branding project of that University finished a year later. Thereafter, they conducted further more focused data collection in 2005 via in-depth semi-structured interviews with the project manager, the Director and the Assistant Director of Communications, the University Provost, and the University President. The objective of

the branding project in the Norwegian University in northern Norway was to develop a unique and consistent definition of the organisational identity and values for developing its brand and branding strategies (Wæraas and Solbakk 2009). Due to the complexity of universities with their diverse stakeholders, and the university's culture of extensive autonomy for individual faculty members, it was found that there was not only disagreement between the Provost and the Director of Communication about its identity and value; but also resistance from various faculties. The university was faced with a dilemma. For example, some argued that the University should build a more international and specific profile in its official identity, but other faculties or majors felt that they might be excluded in such a definition. On the other hand, it was felt that, if the University chose a more general profile, it would violate the original purpose of branding, which was to differentiate itself from the other Norwegian universities. The provost terminated the process with no final result in the identification of the values and identity for the university. He proposed the university should focus on concrete measures, including a common visual design for all university publications, publishing an alumni newspaper, granting outstanding research rewards and more effort in student recruitment (Wæraas and Solbakk 2009). This study highlights the considerable difficulties in identifying a university's overall brand identity. A university typically has divergent values and different members and stakeholders of the university will frequently perceive the university's values and identity differently. The branding concept arguably relies on the total employee consensus and commitment and, consequently, might impose discipline on organisational members which, in turn, might arouse a feeling of resistance, disengagement or inappropriate from the staff members. In this sense, the typical university values as tolerance of diversity, collegiality and democracy may often militate against "corporate" branding strategies. Their study highlights the importance of "internal" marketing within disparate and

collegial cultures typical of universities and the challenges associated with the translation of commercial branding approaches to the university context.

In short, authors such as Hemsley-Brown and Oplatka (2006), and Wæraas and Solbakk (2009) have observed that there is a relative lack of published empirical research in marketing or branding in the higher education sector. Their studies have shown that the university is typically a complex and loosely connected organisation and which includes diverse stakeholders. Universities, on one hand, have to operate as business entities, and, on the other hand, their primary purpose is to educate students. In addition, they are expected to give a significant degree of freedom to faculties as well as to protect certain beliefs and values in universities. Consequently, it may be rather difficult to define the brand essence of a university. Wæraas and Solbakk's (2009) findings provided some support to those scholars who disagree with the use of branding as a management tool in the higher education sector. Their study provides an insight into the challenges of branding in higher education institutions and the authors suggested more empirical studies on branding in higher education in future. The following section will further examine whether branding is appropriate and can be effective in universities/higher education institutions.

2.10.4 Can Branding work in higher education?

As discussed in previous sections, a number of researchers and scholars are agreed regarding the importance of the brand equity construct and therefore various conceptualisations/models of brand equity have been developed. At the same time, other researchers, such as Andrew Ehrenberg and his followers dispute the importance of brand equity in driving market share and the consumers' purchase decisions. In the higher education arena, these arguments have followed a similar path, with some researchers supporting the application of branding principles in higher education; and vice versa.

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Most recently, Mourad (2013) argued that higher education is one of the most important services provided in any economy. The selection of a higher education program is a risky decision due to the fact that higher education service is relatively expensive, but also it has a direct impact on the student's future career and employment. He argues that brand equity is an important factor which might affect the student's choice and can be viewed as a risk reliever. He noted that universities have been increasing their investments in brand equity management in order to increase their competitive advantages and differentiation from other competitors. He argues that it is feasible to adapt the existing brand equity models available in the marketing literature (usually developed for business sectors) with re-categorisation and integration into a conceptual brand equity model applied in the context of higher education branding. Although there are no further published details, in this paper, of his conceptual framework for brand equity in the education market, he strongly advocates using a brand equity model, and marketing practice in managing and building a strong brand in order to strengthen the competitive advantages in the higher education sector (Mourad 2013).

In another paper, Mourad and his co-researchers (Mourad et al. 2011) discussed brand equity in higher education services in Egypt. They proposed a modified brand equity model which was adapted from both Aaker's (1991) and, primarily, Keller's (1993) models to examine two dimensional constructs of brand equity: namely, brand awareness and brand image. In contrast with Aaker's (1991) views, they view brand loyalty as a consequence of brand equity rather than one of its dimensions. Their findings provide empirical support for the proposition that brand equity is a significant factor of the choice of University (measured as "intention to purchase"). The results of their empirical research prove partial support for their proposed brand equity model. The first dimension in their

model: "brand awareness" including marketing communication and word of mouth, was not a statistically significant driver of brand equity in higher education. On the other hand, the second dimension, "brand image"-related determinants were found to be statistically significant drivers of brand equity in their research. Based on their findings, they recommended that management of higher education should focus on building positive brand image rather than creating and sustaining brand awareness. This conclusion is consistent with the view that brand awareness is less important when competing institutions are already widely known. (Their view here to a certain extent, is consistent with Ehrenberg's views which has been discussed previously. Ehrenberg argues for the importance of building brand salience and thus in differentiating between brands via advertising and tools of the marketing mix, although these results would suggest that there exists a "threshold" value, beyond which brand awareness may be less influential). Mourad et al. (2011) argue that it is worthwhile and advisable to develop and maintain the positive determinants of the brand image dimension of brand equity which will hence result in building strong brand equity, rather than simply investing and expanding the promotional campaigns and budgets of higher education institutions (Mourad et al. 2011).

Other scholars and practitioners including Lockwood and Hadd (2007), Hemsley-Brown and Goonawardana (2007), and Judson et al. (2009), all strongly support using branding in the higher education sector. Due to the increasing competition for international students, decreasing government support campaigns and funding, and other reasons leading to the increasing significance of branding in higher education which were discussed in the previous section, they recommend that universities should focus more on developing their brands and communicating clearly their brand messages. Hemsley-Brown and Goonawardana (2007) conducted a case study of one UK University which focuses on brand architecture and the process of brand harmonisation. Similar to the Norwegian

example discussed previously (Wæraas and Solbakk 2009), they found that these brand management issues raised concerns about the autonomy of faculties and staff and the consolidating the marketing positioning of the University and the schools. All the above scholars and practitioners concluded that it is feasible to develop and sustain branding in universities, provided there is sufficient two-way communication between the University and the individual schools; accurate brand message communication to the university employees that match closely with the students; engagement of staff including faculties and administrative staff; and recognition of the faculties' and schools' contribution to the identity of the university brand (Lockwood and Hadd 2007; Hemsley-Brown and Goonawardana 2007; Judson et al. 2009).

In addition, Chapleo (2007, 2011) also argues that universities should adopt the concept and practices (including the brand equity measurements) of branding in higher education. However, he argues that only a few UK universities have built successful brands in the manner of the commercial sector (Chapleo 2005). Nonetheless, he questions the suitability of the literal application of commercial branding models; such as Keller and Lehmann's (2003) brand value chain model, Millward Brown International's "Brand Dynamics^{TM}" pyramid model, and Young and Rubicam's Brand Asset Valuator model, in universities due to the inherent complexity in universities brands and the diversity of stakeholders in higher education institutions as discussed above. However, he agrees, to a certain degree, that these commercial brand/ brand equity models can be applied to higher education sector (Chapleo 2011). Similar to Mourad's (2013) argument, Chapleo (2011) suggests it is feasible to adapt the existing brand equity models available in the literature (usually developed for business sectors) with re-conceptualisation into an appropriate brand equity conceptual model that reflects the context of higher education branding. He agrees that variables such as market share, loyalty and price premium are brand equity metrics from

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the abovementioned commercial brand equity models which can be re-conceptualised for use in higher education brand models. However, no further details or suggestions were provided on the criteria of such reconceptualisation for the use in higher education branding. Furthermore, he concludes that little commonality is found among the attributes of successful UK universities' brands. Nevertheless, marketing communications, reputation, location, and public relations have been viewed by the respondents in his study as important contributors to successful higher education brands (Chapleo 2011). In short, these authors generally support building and managing brand equity in the higher education service sector with appropriate adaptations to the context of higher education.

The above researchers' views on supporting higher education branding are contrary to Temple's (2006, 2011) view. Temple (2011) observes that there has been a notable increase in branding activity in higher education; however he argues it is not useful and proper to apply commercial branding principles in higher education. He argues that university brands embody values and identities which are developed from inside and which cannot be created by outside consultants. In his view, the value embodied in university brands should be driven by the quality, the utility, the distinctiveness of the education service rather than the marketing of universities. The quality, the utility, the distinctiveness of the education service would affect the university's reputation with which academics and the community are mostly concerned. He argues that the branding of a university can be only developed and achieved from inside – by its staff and students – over the years. It cannot; nor should not, be easily changed by outside consultants (Temple 2011).

In another paper, Temple (2006) argued that using the branding of universities or higher education as a route to success is an illusion. Using branding in higher education creates a range of problems. Unlike other corporations or institutions, the "customers" (the students)

of universities are required to do all the work and not everyone who wants to be enrolled and graduate will be satisfied. Temple (2006) suggests branding in universities should be renamed as "reputation management" as he does not regard this is branding. He argued that building a brand in higher education can only be achieved by the academic and administrative staff working together and with leadership of senior management to ensure academic and organisational successes. His arguments revolve fundamentally on the differences between "reputation" and "branding". To what extent the terms are mutually inclusive or redundant is, however, not further discussed, although this issue is further canvassed later. The next section will discuss key challenges / barriers facing successful branding activity in the universities.

2.10.5 Key challenges facing successful branding in higher education

Williams and Omar (2013, p.249) support the objective of brand building in higher education institutions; however, they believe it may not be easy to establish a clear brand principle in the university sector due to the following key challenges (and also argued by other authors, as cited): the complexity of higher education brand (Hankinson 2001; Chapleo 2011); diverse stakeholders (Hankinson 2001; Chapleo 2011); complex internal structures (Hankinson 2001; Wæraas and Solbakk 2009); the diversity of programs (Hankinson 2001); institutional resistance to change (Chapleo 2007, 2011); a variety of sub-branding of schools/faculties (Chapleo 2007); information gaps between choice factors identified by students and HE publications; and the need for support by institutional leadership and formal communication mechanisms (Chapleo 2007). More importantly, there is lack of accepted theoretical models of marketing and branding in the higher education market (Hemsley-Brown and Oplatka 2006; Chapleo 2007; Williams and Omar 2013).

2.10.6 Brand, reputation and league table positions in higher education

When taking a closer look to branding in higher education, it might be questioned if branding and reputation are, in reality, the same thing, as alluded to previously. According to Argenti and Druckenmiller (2004), a company can define, build and communicate its brand; however, it would be difficult to build and manage reputation which they believe results from the organisation's behaviour. This view is supported by the findings of studies conducted by Chapleo in 2008 and 2009. He concluded that while brand could be defined, and built in universities, reputation was more driven by historical legacy, and thus it would be rather harder to build and manipulate. He also concedes that there might be a degree of overlapping in using these two terms in the context of "older" universities (here he refers to those UK universities incorporated before 1950 which were included in the study and where "reputation" is the commonly used term). "Newer" universities are more prepared and articulate to discuss brand (here he refers those UK universities incorporated either in 1960s, or 1992 and post-1992 and which were interviewed in the study.) (Chapleo 2011). In another study Chapleo (2005) interviewed 40 opinion formers from UK universities and colleges (20 senior managers in HE marketing/ external relations; with another 20 senior career advisors in higher education). In this study, he mainly focused on the understanding of which UK universities have successful brands. However, from his findings, he found that many respondents agreed there is a difference between the perceived success of a university brand and its reputation, but he argued that this was not universally true (though this is not within the scope of his paper). Following Frost and Cooke (1999, p.84), he argues that brand and reputation are just the aspects of the same thing and that it might be useful but is impractical to make a distinction (Chapleo, 2005, p.55).

On the other hand, Temple (2011) holds a contrary view about university branding and reputation. It might be true for a company to create and build a brand for a consumer

product such as a Coke; however, he argues a successful university branding is neither simply created by the management nor a branding consultant, but results largely from the students' academic performance, and also by the teachers and the rest of the university members including the administrative staff as well as leading by a good senior management team to ensure the academic and organisational success and the congruence of the values, goals and attitudes of all the stakeholders. That is why universities with higher league table rankings are mostly concerned about the students' minimum entry requirements, in order to protect the university reputation. As mentioned in a previous section, Temple (2006) also suggests branding in universities should be renamed as reputation management as he did not regard this is branding. He argues "branding has suddenly become about reputation, reputation is everything to universities" (Temple 2011, p.115). A further, related argument from Temple and Shattock (2007), which is in line with Chapleo's (2011) view on university "league tables", is that ranking is strongly related to a University's age and its historical legacy. Thus, according to Temple and Shattock (2007), a university's league table position can be viewed as how a university brand is perceived and is closely related to its age. Although the age factor would not guarantee any university's league table position or its academic excellence, Temple and Shattock (2007) concluded that academic achievement of the UK universities incorporate a strong historical "legacy" effect.

In further discussion of the link between branding and reputations, Bunzel (2007) argues branding would not help in the reputation of those top ranking universities, such as the top 25 rankings in the US News and World Report; however, smaller higher education institutions may believe that branding might help to enhance their reputations, and he advocated examining the return on branding investment. He concluded, however, that there is little evidence that university branding makes a difference in rankings. However, Bunzel

(2007) argues that university branding can have an impact on university ranking positively-only if it is associated with positive reputation. In this context, Chapleo (2011) argues that there is certainly a role for university branding, but that this should be a separate issue from league table rankings. He further highlighted a difference between a successful university brand and a league table ranking: a university which is ranked in a comparatively lower place can have a successful brand within a niche segment of students (Chapleo 2011).

In short, the concepts of brand and brand equity have been extensively researched in the last several decades. Many scholars and practitioners strongly support building a strong brand as a means of creating and sustaining competitive advantages for organisations and providing differentiation against competitors. Moreover, it is generally agreed that the concepts can be equally applied in the service sector, including the education sector. It is noted however that the application of brand equity has been more widely applied and discussed in the context of tangible goods products; and that rather less attention has been evidenced in the published empirical research in the context of services sectors. Further, and perhaps unsurprisingly, even less attention has been paid to the question of brand equity in the context of the higher education services sector. Due to the nature and characteristic of services, marketing and branding in the service sector is comparatively more challenging than in the physical product sector. Nevertheless, some scholars argue that it is important and valuable to build strong and positive brand equity in the higher education service sector as it can provide greater confidence for higher education consumers in making their purchase decision as it can help to reduce perceived risk which is usually perceived to be higher in a service purchase decision.

As discussed earlier in this section, the literature review reveals that there is a paucity of published research papers examining marketing in higher education (and not merely branding). More particularly, the topic of branding in the higher education sector and applying branding theories, practices or models in the context of higher education has received only limited attention in the literature, despite the increasing importance and recognition of the topic in recent years. The present literature review uncovered relatively little empirical research on the process of branding higher education services, examining the branding issues in the context of universities or applying available branding models from the commercial sector to the higher education sector. A number of scholars / authors have questioned the suitability of the application of branding models from the private sector to the higher education sector context, due to the inherent complexity of higher education institutions and brands. The literature search has shown the available papers on higher education branding are mainly focused on theoretical rather than empirical concerns. Due to this scarcity of empirical research on the topic, there is general consensus that more empirical research and study should be conducted in higher education branding in order to develop a better understanding of branding in the higher education context and to develop branding models that can be applied in the sector. More empirical research is required in order to develop a better understanding of the issues surrounding branding in the higher education service sector, such as the objectives of branding activities in universities, and how to measure, and manage the value of brands of higher education institutions. As supported by the previously discussed literature, there is a role for branding in higher education institutions; however, it should not be viewed as a panacea for all the marketing problems and challenges confronting universities. As the discussion on brand equity presented in previous sections also concluded, there are some other scholars/ authors who argue against using branding in higher education, although this would be regarded as a minority view.

In conclusion, the literature review shows that there are knowledge gaps which strongly suggest the need to conduct empirical research on brand equity in the context of the higher education sector. The next section will present the chapter summary.

2.11 Chapter summary

This chapter has firstly reviewed the literature on brand equity and brand valuation: the literature on brand equity and various conceptualised brand equity models; the issues, and alternative views relating to the meaning of brand equity and brand equity valuation have been presented. Since the concept of brand equity has been recognised for decades, it has been widely accepted that it is very important for companies to build strong brands with favourable brand equity to increase their competitive advantages. The advantages of having a strong brand with positive brand equity have been discussed. Major perspectives and interpretations of brand equity have been reviewed, and it is concluded that brand equity is a broad and multi-faceted concept, and that there is still no general consensus on the meaning and definition of brand equity and its measurement. Different definitions or interpretations of the construct lead to different measurement models. The choice of the measurements will typically depend on the specific objective of the measurement of brand equity and brand valuations. From the literature review, brand equity and brand valuation, to a great extent, can be broadly examined from two fundamentally different perspectives: namely consumer and financial-based brand equity. Many scholars and practitioners agree that brand equity (consumer-based) and brand valuation (financial-based) are two distinct constructs, but that they are interrelated. However, some scholars view the inter-relationships differently. For example, Lasser et al. (1995) and Kapferer (2008) believe consumer-based brand equity is the precursor or antecedent of financial brand valuation,

while Raggio and Leone (2007) view brand value as a broader construct which subsumes brand equity.

From the literature, it is clear, however, that brand equity and brand valuation are two distinct constructs and they are both important. Various conceptualised models of brand equity and its measurement, together with several brand valuation methods have been reviewed; however, it can be argued that there is still no integrated brand equity and brand valuation model that can be easily applied and accepted by people who are concerned with both consumer and financial orientations. Furthermore, the current available brand valuation methods as discussed in the previous sections, however, are not readily applicable to many organisations and industries (such as the Hong Kong CE industry, as in the current case) since the necessary raw data and information required for calculating/measuring of the brand are frequently not readily available at the organisation or industry level.

While there is widespread recognition of the importance of brand equity, the contrary views of other scholars, such as Ehrenberg and his followers, on the concept of brand equity, have also been presented. Based on their extensive empirical research, their findings challenge the existence of brand equity and of distinct brand personalities among competitive brands; and of what have been so-called strong and weak brands. Rather, they argue, it is just a matter of big or small brands. Further, they have questioned the importance of brand loyalty from the consumer point of view. Because of the Double Jeopardy effect, bigger brands tend to have more customers and larger market shares; and the purchase behaviour of consumers is largely predictable from their past usage and the current market share in repeat-purchase product and service markets.

Furthermore, and beyond the broad question of brand equity and its measurement, the last section of the chapter has discussed the literature on branding in higher education and, to a lesser extent, marketing in higher education (as the latter focus is the wider context and largely outside the scope of the current study). As discussed, a number of scholars who strongly support the importance of creating and sustaining strong brand equity also argue that the concept of brand equity can be equally applied in consumer product and services sectors. However, the literature search concludes that the subjects of marketing and branding in the university and higher education sectors are comparatively little explored. Some scholars argue that there is still a long way to go to properly understand the role of branding in higher education. (Ironically, the academics have devoted relatively little attention to branding in academic institutions and higher education.) This is perhaps due to the various reasons that have been suggested in the discussion of the challenges of branding in the higher education, including the inherent complexity of managing brands in universities with multiple and diverse stakeholders. Another reason for the lack of attention to the topic is due to the four characteristics of services. Mazzarol and Soutar (1999, p.287) argue: "despite the importance of services, such as education to national economies they have tended to be ignored or overlooked, due largely to their intangible nature".

Beyond the issue of why people are concerned about branding in higher education, the major themes of study in higher education marketing and branding include the workability of branding in the higher education sector, various scholars' view on the relationship between brand, reputation and league table positions in higher education, and the arguments on the suitability of the application of branding practices and models from the commercial sector to the higher education sector have been presented. As mentioned, there is a noteworthy lack of empirical research and models of brand equity which are relevant or applicable to the particular context of higher education. This is despite the increasing

recognition of the importance of the topic, coupled with the arguments from scholars and practitioners that more research should be conducted on this topic in order to develop a better understanding of the effectiveness (or otherwise) of branding and brand equity in the context of higher education, and in developing models to measure the brand equity and brand value of the higher education institutions.

In order to fill these knowledge gaps in the literature and to advance the practice of brand equity measurement and management, it is proposed to develop an integrated methodology (primarily using sample survey data and a firm's internal data) to measure both consumer and financial orientations of brand equity that can act as a means for communication between, both the marketing and financial professionals. In addition, the proposed methodology is designed to be easily operationalised in most of the goods and services firms and industries, at affordable cost. The case here will be based on the Hong Kong continuing education industry, for which there is a general lack of publicly available data in relation to the necessary parameters of various brand valuation methods to measure/calculate the brand value. In addition, such organisations generally lack sufficient funding to hire external consultants, such as Interbrand, or to collect expert opinion. There will also typically be no information on, or history of, any takeover bids in the industry. Thus, even if the company is financially able to hire a consultant to calculate its brand value, using, for example, the Interbrand model, the calculation of the model's multiple relies on real data of actual brand transactions for its closest brand for reference. Many businesses and industries, such as the Hong Kong continuing education industry (which is the subject of this study), commonly lack this kind of information.

The next chapter discusses the objective of the study and the rationale and background of the selected research industry.

Chapter 3 Research Objectives, Model and Questions

3.1 Research Objectives

As discussed in the previous chapter, it has been argued that the importance of brand equity has been widely recognised in marketing over the last several decades. The concept of brand equity has been widely researched and accepted by many scholars and practitioners and, along with it, the importance of building a strong brand and associated brand equity as a source of sustainable competitive advantage. Notwithstanding, some scholars, such as Ehrenberg and his followers hold contrary views on the importance of brand equity and their arguments against the importance of brand equity have been discussed.

As the previous discussion has argued, brand equity is a multi-dimensional construct, and different definitions or interpretations of the construct lead to different measurement approaches. Since there is still no clear consensus on the meaning and its measurement, it is unsurprising that some scholars or practitioners might have different views on the perspectives of brand equity. Nevertheless, the previous discussion demonstrated that brand equity can be broadly examined from two distinct perspectives; namely, it can be interpreted and measured from a consumer behaviour focused brand equity perspective or, alternately, it can be viewed from a financially-based brand valuation perspective. In reality, these perspectives are, in fact, interrelated and complementary. Thus, the consumer behaviour perspective may be regarded as focusing on the behavioural sources and consequences of brand equity. However, as argued by Aaker (1991), the causal interrelationships among the four dimensions of consumer-based brand equity remain unclear, and only a few empirical studies have explored their impacts on consumer

response (Buil et al. 2013), thus, this is one of the major objectives of the study. In contrast, the financial perspective is concerned with the financial value of brand equity; also a key research question. However, it has also been argued that there is currently a lack of an accessible brand equity model which can be employed by most organisations within affordable financial resources and using publically available and/ or readily estimable data to measure both perspectives. Furthermore, while various brand equity valuations methods have been discussed, there is still another knowledge gap in that measurement of brand equity cannot be easily applied or aggregated for an industry, as a whole, since the necessary raw data and information required for calculating/ measuring of a brand are not readily available at the organisation or industry level. Thus, in the current study, the total brand equity of an industry is the sum of the equity of all players, including whether they are the major player or not, and can be derived from the same survey data. The details of the calculation of brand equity of the major players of an industry in the study and the industry aggregates will be discussed in Section 5.3.3.

As outlined previously, it has been argued that brand equity can be applied to both consumer product and services categories; however, the review of the extant literature revealed a relative paucity of published empirical research in the services sector, generally, and this is even more limited (even non-existent) in the university/ higher education sub-sector. At the same time, it was noted that there is growing support from scholars for the application of branding concepts to higher education as a means of increasing competitive advantage in todays' challenging and increasingly competitive business environment for higher education. It should also be acknowledged that some scholars disagree with this suggestion, as has been discussed in chapter 2. They still question the suitability of the application of branding or brand equity from the commercial sector to the context of higher education, and more empirical research in this area is called for. In response to scholars'

and practitioners' suggestions for more empirical study of branding in higher education services and the knowledge gaps identified from the literature, the current study aims, firstly, to measure the financially- based brand equity of the continuing education service industry in Hong Kong, and secondly, to develop an integrated model to demonstrate and measure the causal interrelationships among the dimensions (which can be regarded as "antecedents" or "sources") of customer-based brand equity and the "consequences" of customer brand equity in terms of behavioural intentions.

This section discussed the research objectives of the study. The following section discusses the education sector in Hong Kong and the rationale for choosing the Hong Kong continuing education industry as the study target.

3.2   Rationale for studying Hong Kong Continuing Education services

The Hong Kong economy is a modern service economy and its services sector is among the most developed in the East Asia region. Rapid expansion in the services sector has occurred over the last two decades (Information Services Department 2013). The contribution of the service sector to Hong Kong's Gross Domestic Product (GDP) [3] is much greater than the manufacturing and agriculture sectors. (Hong Kong Special Administrative Region (SAR) Government uses GDP rather than Gross National Product (GNP) in compiling official statistics). Around 93 per cent of Hong Kong's annual National Income (GDP) is contributed by the services sector in the period 2008-2012 (Census and Statistics Department 2014). Compared with 2001, the share of the services

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[3] Hong Kong Government is using Gross Domestic Product (GDP) instead of Gross National Product (GNP) in measuring the total value of production of Hong Kong.

sector in GDP terms increased from 88 percent in 2001 to 93 per cent in 2011. Even excluding GDP generated by the public sector, the services sector still contributed 84 percent of GDP in 2011 (Information Services Department 2013). In addition, around two-thirds (67%) of the Hong Kong GDP in 2011 was contributed by the "four key industries and other six selected industries in the services sector" (Census and Statistics Department 2013). The four key industries are financial services, trading and logistics, tourism, and professional and producer services. The six selected industries are cultural and creative industries, medical services, education services, innovation and technology, testing and certifications services and environmental industries (Census and Statistics Department 2013).

In Hong Kong, the Government has identified "the four key industries and other six selected industries" as the driving force of Hong Kong's economic growth. Regarding the contribution of the four key industries to the total economy, and according to the latest official figures provided by the Hong Kong SAR Government, the total value added of these four key industries expressed as a percentage of Gross Domestic Product (GDP) was 58.4% (or HK$1,015 billion) and 58.5% (or HK$1,113 billion) in 2010 and 2011 respectively, whereas the total value added of the six selected industries expressed as a percentage of GDP rose from 8.3% (or HK$144 billion) in 2010 to 8.5% (or HK$161 billion) in 2011. The value added of these six selected industries in Hong Kong economy increased significantly by 12.1% from 2010 to 2011 (Census and Statistics Department 2013).

"Education services" has been identified by the Hong Kong SAR Government as one of the six selected emerging industries as having potential for further development. The value added of education services rose from HK$17.5 billion (1% of GDP) in 2010 to HK$20

billion (1% of GDP) in 2011 with a growth of 13.9% (Census and Statistics Department 2013). Although there is no detailed breakdown provided by the Government on the contribution of each of the components of the education services, the Government highlighted that the increase was a result of the increasing volume of self-financed ("full fee-paying" or non-government funded) post–secondary and university education services; and private academic and tutoring courses (Census and Statistics Department 2013). Such programs are the core services provided by the Hong Kong continuing education sector, as distinct from the education services usually provided by the Government's University Grant Committee (UGC) funded local universities.

A further reason why the continuing education sector, rather than the eight local UGC funded universities, in Hong Kong was chosen as the selected industry is that it serves a wider population of all adults who want to pursue further education at almost at any age and at any time (whereas the locally UGC funded universities only serve a much smaller population of students). Therefore, a larger number of potential respondents (whether they have purchased or not) in any CE brands can be expected. Thus, with such a large number of potential "customers" of the CE industry, the brand equity model can be seen as generalisable to many other similar large consumer service markets, especially those in which the organisation or industry lacks the financial resources or publically available data to measure brand equity and brand valuation.

It is further argued that, with the rapid pace of technological and social changes in recent decades, the CE institutions are today facing more severe competition than the traditional universities which have long profited from a "captive" market of school leavers, regulated fees and Government funding. Further, most of the CE institutions are self-financing and have provided comparatively homogeneous, consumer-oriented programs and services

with little meaningful differentiation. (This view of the CE market would appear to be consistent with the views of Ehrenberg and his followers (Ehrenberg et al. 1997b) that customers of each brand do not perceive brands very differently because any competitive advantages and differentiation (functional, emotional or image-related attributes) of brands are readily copied by other competitors and thus the competitive advantages are not sustainable. This study will therefore examine if a strong education brand (such as the market leader) in the Hong Kong CE sector with positive brand equity can contribute to driving consumers' behavioural intentions and their willingness to pay premium prices.

While the value of brand equity in the CE industry is still an open question, observation and anecdotal evidence would suggest that CE providers have been recently increasing their advertising spending on brand building and CE programs in the local media, although there is no official published information about such advertising expenses by CE institutions. In an environment of perceived increased competition and consequent increases in advertising spending, management and the marketing professionals in CE institutions will, in future, increasingly need to better understand and justify the effectiveness of brand building investments and advertising expenses. In this context, the current study's aims to propose an integrated methodology which examines both customer-based brand equity and financial brand valuation of the continuing education service industry in Hong Kong, will contribute to a better understanding of the role of advertising and its contribution to building and strengthening CE brands. The proposed methodology may also provide the industry and individual CE institutions with a brand "health check" for the institutions across the years. Finally, the study provides financial brand valuations for each CE institution which would potentially help to assess each brand value for comparison in the industry and as a possible basis for future mergers or acquisitions (in the currently unlikely event that such CE institutions might be privatised, as is more common

elsewhere in the world). In fact, the scenario in which local universities may indeed sell off parts of their continuing education arms has recently become a real possibility with the announcement that City University's Community College is being prepared for sale (SUN 2014).

This study is conducted in the context of the absence of any published empirical studies on brand equity valuation of educational services in Hong Kong (including continuing education services). The senior management teams of the Hong Kong CE institutions are generally regarded as highly qualified professionals and most of local universities have employed senior managers who are responsible for branding and communication activities. This study is prompted by the observation that the management and the marketing/branding professionals of CE institutions do not generally appreciate the potential usefulness of brand equity valuation or understand the relationships between their brand equity and consumers' purchase decisions and willingness to pay a premium price as a means to justify the investment in the branding related activities. In these institutions, advertising is widely perceived as little more than a "necessary evil", but, this observation could also be equally levelled at other sectors and industries generally as brand equity is a topic which is rarely discussed and canvassed in the higher education literature, especially in relation to continuing education.

Hong Kong has over 40 continuing education providers (including overseas education institutions that collaborate with Hong Kong continuing education providers), not including those who provide CE programs only online. The CE industry in Hong Kong is made up primarily of off-shoot institutions, regarded as brand extension services, of local universities that can also generate incremental income streams for the local universities. A recent territory-wide survey conducted by an independent market research company,

commissioned by the School of Professional and Continuing Education, University of Hong Kong (HKU SPACE), indicated that approximately 1.39 million Hong Kong adult lifelong learners would participate in CE programs in 2009, with an average HK$10,385 spent per program and a projected CE trade volume of HK$14.4 billion (HKU SPACE 2010). This latest survey was conducted in the context of the Hong Kong CE industry; however only partial information of the survey result was available publically. The literature search, discussed previously, revealed that there is very little research on the Hong Kong CE industry which is available publically. Thus, the current study will provide updated information on consumers' behaviour and attitudes for management of local universities and CE institutions.

The focus of the study is on branding at the corporate level. However, this may be regarded as a simplified abstraction as the range of possible branding in the Hong Kong CE industry may be more complex in practice, since some Hong Kong CE providers have various sub-brands, together with their corporate brands, in providing various lifelong learning programs. They may also offer programs in collaboration with other local or international education institutions, and the nature of the collaboration may be short or long term, or even one-off, while other providers operate under a single brand entity only. It would thus be desirable, for future research, if the findings and conclusions of the current research were extended to consider the valuation of sub-brands and their contribution as part of the overall corporate brand equity valuation. In the current context, however, brand management is focused at the "institutional" (corporate) level with only minimal differentiation at program level, and the use of sub-brands by Hong Kong CE providers is not currently a significant characteristic of the CE marketplace.

As discussed previously, the Hong Kong SAR government recognises the importance of the volume and growth of CE services to the contribution of the education sector (one of the six selected industries by Hong Kong SAR government) in Hong Kong (Census and Statistics Department 2013). On the other hand, the significant growth in the Hong Kong CE industry in recent years can be further illustrated by the financial data published in the Annual Report of the School of Professional and Continuing Education of Hong Kong University (HKU SPACE) (HKU SPACE is chosen here as an example for illustration because it is the market leader of the Hong Kong CE industry, a fact which is supported by the survey results of the study). HKU SPACE achieved annual income of $918M, $932M, and $1,134M ($1.134 billion) for the financial years of 2010/11, 2011/12 and 2012/13 respectively (HKU SPACE 2012a, 2013, 2014a). Compared with the contribution amount of the education sector to Hong Kong GDP in 2011 for comparison (the most recent official figure published by Hong Kong SAR Government), HKU SPACE accounted for around 4.6% of the total education sector income in 2011 (based on the average annual income of HKU SPACE 2010/11 and 2011/12 and reflecting the different reporting periods between the Hong Kong Government and HKU SPACE) (HKU SPACE 2012a, 2013; Census and Statistics Department 2013). Since most of the CE institutions are self-financing and, since the key players in the sector are mainly the extension arms of eight local Government funded universities, accountabilities are expected within the "parent" universities for the financial performance including advertising spending and branding investment. Furthermore, in view of the industry's lack of widely available data on consumers' behavioural and attitudinal information, together with the lack of any relevant acquisition values, the study aims to help the CE industry in assessing its consumer-based brand equity and calculating the brand valuations of the major CE institutions. Further, the results of this study can also provide a platform for on-going regular brand health checks and for competitive data analysis on the CE brands of the industry. Moreover, providing a

model for brand equity valuation can potentially provide useful input into future merger and acquisitions considerations among CE institutions. (This possibility has recently become a more realistic possibility with the announcement that at least one Hong Kong CE provider is being prepared for possible sale or "privatisation" by its parent university (SUN 2014) and, in fact, that sale has now taken place (CityU 2014)).

In summary, having identified the knowledge gap in developing an integrated brand equity model, and recognising the importance of the continuing education industry in the Hong Kong education service sector, and, in turn, the Hong Kong economy, the present study seeks to contribute to a better managerial understanding of the value of brand equity in the continuing education industry and to how that brand equity can be better managed. The present study will therefore focus on the Hong Kong continuing education sector and will attempt to propose an integrated methodology which can be applied by continuing education institutions to enable them, firstly, to calculate the brand equity of both individual institutions and of the "industry" as a whole, and, secondly, to model and understand the causal interrelationships among the dimensions of customer-based brand equity and the resulting impact of the dimensions of brand equity on individual customers' behavioural intentions, so that, ultimately, brand equity and appropriate branding strategies can be better developed and managed. The next section discusses the research model and questions.

3.3   Research model and questions

As discussed above, this research aims to develop a model of brand equity to allow the calculation of the value of brand equity and to represent the causal interrelationships among brand equity constructs, and in turn, their relationships to consumers' behavioural

intentions and willingness to pay a premium price; based on the use of survey and existing internal data. Further, the model will be operationalised for use within the continuing education industry (with the emphasis on the measurement of brand equity at the corporate brand level), where comprehensive competitive, marketing and financial data on competitors are usually not readily available. While brand equity is a relatively straightforward concept to grasp, it is not nearly so easy to measure in practice. This is because Hong Kong continuing education providers usually have limited financial resources and are thus unable to hire consultancy firms, such as Interbrand or Young and Rubicam, to value their brand equity or, as is more likely, they would not see such a project as justifying the high costs involved. (The largest Hong Kong CE institutions are typically the extension sections of universities, and their performance and spending are governed by, and also accountable to, their parent universities, which are usually perceived by the public as non-commercial entities). The proposed model will be developed to enable CE institutions to value their brand equity using only survey data and readily available internal financial and marketing data. As such, the model can be applied by other CE institutions with only a limited budget to conduct both individual firm and industry-wide analyses of brand equity which could serve as a model for brand health checks across the years. The model should help CE institutions to understand how to calculate the value of their brand equity, as well as that of the whole industry, and also to identify the important dimensions, or components, of brand equity for managing the brand equity of their enterprises. In addition, the brand equity model can also serve as a basis for the management of CE institutions to plan their future branding strategies and brand building.

The model primarily relies on data collected by conventional survey, to calculate brand equity for the Hong Kong CE industry and its major players in a way that is easily understandable by management, accounting and marketing professionals. As previously

discussed, brand equity and brand equity valuation can be approached from two perspectives: marketing and financial. Those adopting the financial perspective are interested primarily in "valuing" brands as intangible assets; whereas those adopting the marketing perspective are more likely to be interested in how to "manage" brands, and, in particular, to understand the "drivers" of brand equity. Clearly the two concepts are interrelated; however, from a financial perspective, the emphasis in the current study was on estimating the revenue streams which can be attributed to an industry and each of its key competitor organisations, rather than presenting a rigorous, accounting-based methodology. In this sense, the proposed model relies, in part, on consumer attitudes and perceptions which are common components in most brand equity models, none of which would satisfy the conventional historically-based accounting valuation conventions.[4] This study aims to provide estimates of brand equity which demonstrate the historical and projected sales revenue. The emphasis in this study was on estimating the total industry and individual firms' brand equity, understanding the causal interrelationship among brand equity dimensions and identifying which brand equity dimensions can lead to consumers' behavioural intentions and willingness to pay a premium price. These motivations would, hopefully, be of interest to both marketing and financial professionals.

It has been previously argued in Chapter 2, that there is currently a lack of an accepted branding model that can be applied in the specific context of education and particularly in higher education (Hemsley-Brown and Oplatka 2006; Chapleo 2007, 2011; Williams and Omar 2013). The current study proposes a methodology and model which is both integrated and comprehensive and which is also manageable and affordable by all CE

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[4] This discrepancy between the commercial value of brand equity and conventional accounting valuations is most graphically illustrated when companies are acquired for many multiples of their "book" values or market capitalisation largely based on the value of their brand equities. For example, Nestle bought Rowntree for almost three times its stock market value and 26 times its earnings. (Kapferer 2008, p.18 and p.505).

institutions, no matter whether they are either big or small. Given the available marketing literature on brand equity and brand valuation, the model proposed for the study and the resultant methodology incorporate the following components (Figure 3-1):

- The application of the consumer-based components (brand awareness, brand association, perceived quality and brand loyalty) of Aaker (1991) and Keller's (1993; 2003) conceptualised brand equity models are incorporated, in part, to identify the drivers of brand equity of the CE brand; and

- A slightly modified version of Moran's (1993, 1994) brand equity model is employed to measure financial value of CE brands.

These components will become the basis of the proposed brand equity model in the current study. As illustrated in below Figure 3-1, the proposed model expands upon the work of Aaker (1991) and Keller's (1993) CBBE frameworks, and Moran's (1993, 1994) brand valuation model, to provide a framework for better understanding the components/ dimensions and scales for measuring brand equity and brand valuation in the real-world context; in this case the Hong Kong CE industry. In addition, the study provides updated information about the characteristics of the Hong Kong CE industry, especially in the area related to brand equity, which is not readily available in published data.
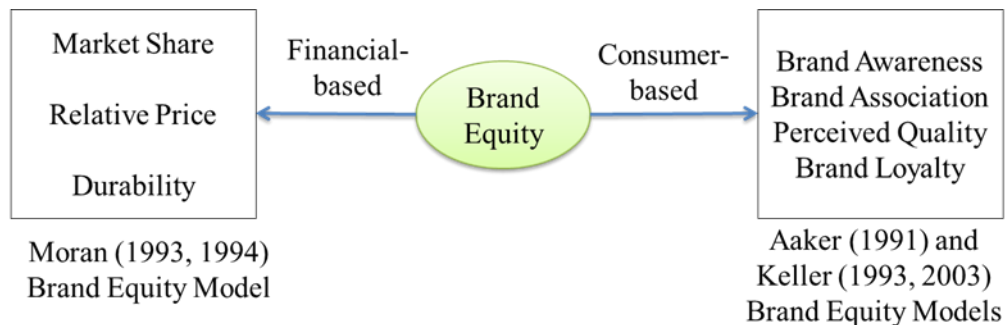
Figure 3-1. Reference models for the proposed research model

The model outlined in this chapter is important because it responds to the knowledge gap in the literature to develop a model to measure both brand equity and brand valuation of one of the important education service sectors (in this case, the Hong Kong continuing education sector), a topic area which where has been recognised as increasingly to important and with limited research. The following are the specific research questions:

Q1. What is the brand equity value for the Hong Kong CE industry and how can it be estimated/ calculated?

Q2. For the market leader of the Hong Kong CE industry, how can its BE be calculated and how much is its BE value?

Q3. Using the market leader of the Hong Kong CE industry as an example, what are the significant causal interrelationships among the constituent dimensions of brand equity?

Q4. For the market leader of the Hong Kong continuing education industry, what are the significant relationships among the dimensions of brand equity to consumers' behavioural intentions and willingness to pay a premium price?

In summary, the research model and research questions of the study are discussed, the research hypotheses will be discussed in the next section.

3.4   Research model and hypotheses

The purpose of this study is twofold: 1. To measure the financial-based brand equity of the Hong Kong continuing education industry. 2. To develop a multi-dimensional measure of consumer-based brand equity of Hong Kong continuing education industry and assess the causal interrelationships among brand equity dimensions and predict the relationship between consumer-based brand equity dimensions to the consumers' behavioural intentions and willingness to pay more (Figure 3-2).
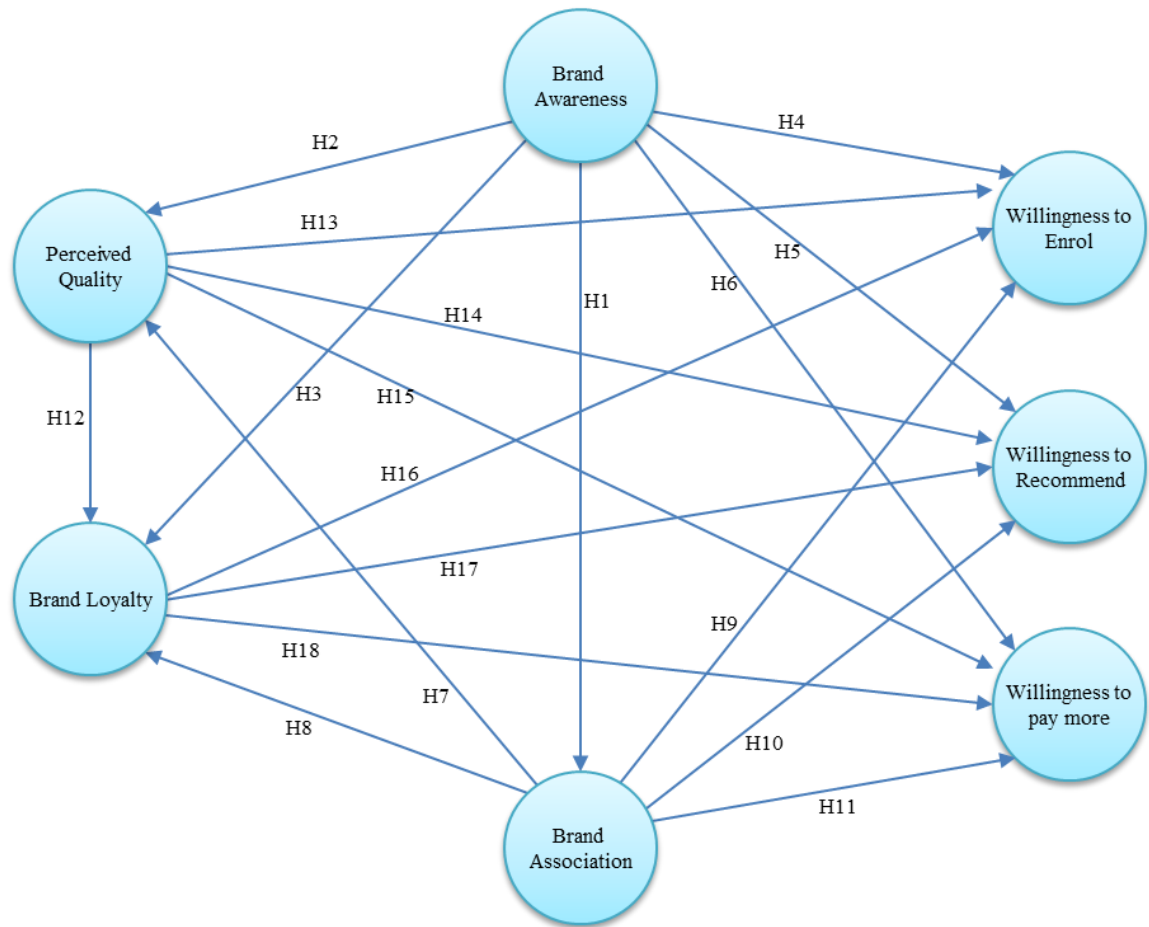
Figure 3-2. Research model of consumer-based brand equity

Consumer-based brand equity measurements here refer to both cognitive and behavioural brand equity at the individual consumer level collected by means of a survey method, using personal interviews. Financially-based brand equity is measured, using a variation of the Moran (1993, 1994) model as discussed in Section 2.9.1, through the same survey data; and other secondary data collected by the researcher, such as information provided by the Hong Kong Census Department, and annual reports of a major CE provider. The financial brand equity measures will be measured at the brand or firm level. The details or findings of the financial based brand equity model of the study will be thoroughly presented in chapter 5.

After reviewing the literature and careful consideration on the suggested measurement items of consumer-based brand equity proposed by Aaker (1991) and Keller (1993, 2003), four dimensions of consumer-based brand equity, (brand awareness, brand association, perceived quality and brand loyalty), as proposed by Aaker (1991) and Keller (1993, 2003), will be employed as the constructs in modelling consumer-based brand equity for the study. These dimensions suggested by Aaker (1991) and Keller (1993) are the most often cited and referenced in the research (Campbell 2002; Washburn and Plank 2002; Anselmsson et al. 2007; Balaji 2011) and have been generally accepted as valid and comprehensive (Yoo and Donthu 2001; Pappu et al. 2005). Although Keller (2003) has argued that in consumer-based brand equity that it is not necessary to distinguish between the source of brand associations and how they are formed; rather he is concerned with the favourability, strength, and uniqueness of brand associations. Aaker (1991), on the other hand, has argued that interrelationships exist among the brand equity dimensions, but the strengths and the mediation effects among the four dimensions of consumer-based brand equity to consumers' purchase decisions are not fixed and few empirical studies have examined this subject (Buil et al. 2013). Both Aaker (1991) and Keller (2003) have stressed the importance of building a brand with strong brand equity because the brand equity will result in increase willingness of consumers to buy the brand, recommend the brand to others and to pay a premium price for the brand. Based on Aaker (1991) and Keller's (2003) suggestions, a range of causal relationship hypotheses are proposed for the study. As shown in Figure 3-2, the hypothesised model of consumer-based brand equity of the study consists of 18 research hypotheses in four dimensions: brand awareness, brand association, perceived quality and brand loyalty, of CBBE as proposed by Aaker (1991) and Keller (1993, 2003). The research hypotheses will be discussed in the following section.

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Brand awareness

Aaker (1991) defines brand awareness as" the ability of a potential buyer to recognize or recall that a brand is a member of a certain product category" (Aaker 1991, p.61). Similarly, brand awareness is defined by Keller (2003) as "customers' ability to recall and recognize the brand, as reflected by their ability to identify the brand under different conditions" (Keller 2003, p.76). Both Aaker (1991) and Keller (2003) propose two dimensions of brand awareness: brand recall (unaided or top of the mind) and brand recognition (aided). The study employs Keller's (2003) brand awareness definition.

According to Keller (2003), brand awareness is an important component in the proposed "Consumer Based Brand Equity" (CBBE) model as it is a first point that triggers consumer decision making and also affects the formation and strength of the brand associations. Aaker (1991) suggests that brand awareness can also enhance brand loyalty and influence perceived quality. In addition, brand awareness is important as it enhances the likelihood that a brand will be placed in the consideration set and will be the selected brand due to the saliency in the consumer mindset (Aaker 1991, Keller 1993). Thus, Keller argues that mere brand awareness can be sufficient to affect consumer decisions, especially in low involvement settings (Keller 2003). Aaker (1991) and Keller (1993, 2003) postulate that brand awareness has a positive impact on consumers' behavioural intentions, including their willingness to purchase a product or services, their willingness to recommend a product or services to others and willingness to pay more for a product or services when compared with other brands in the same product or services category. Brand awareness is developed by increasing the favourability and familiarity of the brand through marketing communications such as advertising and promotion, event marketing, publicity and sponsorship. In building a strong brand with positive brand equity, Keller (2003) suggests

creating brand awareness is the first step in his customer-based brand equity pyramid. Thus brand awareness is firstly examined among the casual relationships in the study. Therefore:

H1: Customers' brand awareness is positively related to brand associations.

H2: Customers' brand awareness is positively related to perceived quality.

H3: Customers' brand awareness is positively related to brand loyalty.

H4: Customers' brand awareness is positively related to willingness to enrol in a CE program.

H5: Customers' brand awareness is positively related to willingness to recommend a CE program to others.

H6: Customers' brand awareness is positively related to willingness to pay higher fees for a CE program.

Brand association

Aaker (1991) defines "a brand association is anything "linked" in memory to a brand" (Aaker 1991, p.109). Both Aaker (1991) and Keller's (1993, 2003) brand equity models contain brand association as one of the dimensions of brand equity and they emphasise the importance of strength, uniqueness and favourability of brand association to consumers. Aaker's definition of brand association is used for the study.

Brand associations can have an impact on consumers' purchase decision, their behavioural intentions and brand loyalty (Aaker 1991). According to Keller's CBBE (1993) model, perceived quality is the most important sub-dimension of brand attitudes of consumers. (Brand attitude is also one of the dimensions of brand associations in Keller's (1993) CBBE model) and it is linked to "brand judgments" of Keller's (2003) CBBE pyramid with six brand building blocks (namely, brand salience, brand performance, brand imagery,

brand judgement, brand feelings and brand resonance). Brand judgement is related to how consumers judge and evaluate a brand after taking into consideration of the performance and imagery associations of the brand (Keller 2003). Keller (2003) has suggested the sequences in building a strong brand (that is, the six brand building blocks): perceived quality can be achieved after the consumers evaluate all the performance and imagery associations of a brand. As such, brand associations can have an impact on perceived quality. Similarly, Aaker (1991) also agrees that brand associations can influence perceived quality. Therefore:

H7: Customers' brand association is positively related to perceived quality.

H8: Customers' brand association is positively related to brand loyalty.

H9: Customers' brand association is positively related to willingness to enrol in a CE program.

H10: Customers' brand association is positively related to willingness to recommend a CE program to others.

H11: Customers' brand association is positively related to willingness to pay higher fees for a CE program.

Perceived quality

Aaker (1991) defines "perceived quality as the customer's perception of the overall quality or superiority of a product of service with respect to its intended purpose, relative to alternatives" (Aaker 1991, p.85). He proposes that perceived quality can have a direct impact on consumers' purchase decisions, their brand loyalty as well as their willingness to pay a premium price. Similarly, Keller (1993, 2003) suggests that perceived quality has a positive impact on brand loyalty and consumers' behavioural intentions. Aaker's (1991) definition of perceived quality is used in the study. Therefore:

H12: Customers' perceived quality is positively related to brand loyalty.

H13: Customers' perceived quality is positively related to willingness to enrol in a CE program.

H14: Customers' perceived quality is positively related to willingness to recommend a CE program to others.

H15: Customers' perceived quality is positively related to willingness to pay higher fees for a CE program.

Brand loyalty

Aaker (1991) defines brand loyalty as "a measure of the attachment that a customer has to a brand" (Aaker 1991, p.39). Brand loyalty is a core construct and an indicator of brand equity which can directly influence consumers' behavioural intentions and purchase decisions (Aaker 1991). Aaker's (1991) definition of brand loyalty is used for the study.

Brand loyalty is created mainly from the usage experience of the consumers and also by brand awareness, associations and perceived quality. However, Aaker (1991) has argued that the causal relationships among the four dimensions of brand equity remain unclear. This is also the rationale of the study. On the other hand, Keller views brand loyalty as brand resonance which is the final step of his CBBE building model. Keller (2003) refers to brand resonance as "the nature of the ultimate relationship and the extent to which customers feel that they are "in sync' with the brand" (Keller 2003, p.92). After successfully achieving the previous five brand building steps; namely, brand awareness (or brand salience in Keller's term), brand performance associations, brand imagery associations, brand judgments and brand feelings, brand loyalty (or brand resonance in Keller's terms) can be developed with the customers. According to Keller (2003), brand

resonance (loyalty) has four categories: behavioural loyalty, attitudinal attachment, sense of community and active engagement; that is, the strongest evidence of brand loyalty is "when customers are willing to invest time, energy, money or other resources in the brand beyond those expended during purchase or consumption of the brand" (Keller 2003, p.93). Behavioural loyalty refers to repeat purchase. Attitudinal attachment refers to consumers having a strong personal attachment with a brand. Sense of community refers to when consumers feel strong affiliation with other people associated with a brand. In other words, brand loyalty can enhance the consumers' willingness to buy, recommend the brand to others and pay premium price for the brand (Keller 1993, 2003).

Aaker (1991) has argued that brand loyalty is on one hand, one of the constituent dimensions of brand equity; and on the other hand, it can be affected by brand equity. Hence the study aims to explain the relationship between the dimensions of consumer-based brand equity and the behavioural dimensions of purchase decision/ behavioural intentions and willingness to pay a premium price for a CE brand. It should also be acknowledged that brand loyalty (as measured in behavioural terms) as the outcome of brand equity is outside the scope of the research objectives and therefore it would not be examined. (The measurement of behavioural loyalty is a perennial problem in "cross-sectional" research in marketing.) Therefore:

H16: Customers' brand loyalty is positively related to willingness to enrol in a CE program.

H17: Customers' brand loyalty is positively related to willingness to recommend a CE program of their favourite institution to others.

H18: Customers' brand loyalty is positively related to willingness to pay higher fees for a CE program.

In short, this section outlined the research model and hypotheses of the study as suggested by Aaker (1991) and Keller's (1993, 2003) brand equity models. The next section summarises chapter 3.

3.5 Chapter summary

This chapter has discussed the objective of the study, the rationale for choosing the Hong Kong Continuing Education sector as the subject research industry and the background of the selected research industry. The research model is also presented and the proposed research questions and hypotheses are discussed.

The following chapter discusses the research methodology.

Chapter 4 Research Methodology and Data Collection

4.1 Introduction

Chapter 2 provided a review of literature on brand equity and brand valuation, including the various conceptualised brand equity models; the issues, and alternative views relating to the meaning of brand equity and brand valuations. A review of the literature related to branding in higher education was discussed in Chapter 2. The review of literature provided the knowledge gap for the study and the underlying research questions and the hypotheses to be tested, which were discussed in Chapter 3. This chapter describes the methodology employed for the study to examine the research questions and to test the hypotheses.

This chapter is structured into 11 sections including this Introduction. Section 2 outlines the research design and research method. Section 3 provides the justifications of the choice of partial least square modelling for the research technique. Section 4 discusses the questionnaire design and the operationalised constructs of the proposed CBBE model. Suggested procedures for developing improved measures are discussed in Section 5. Section 6 discusses data collection for the main study. The reliability and validity measures of the main study will be discussed in Section 7. Section 8 justifies the sampling frame and size selection, followed by a discussion of the method of data analysis. Finally, a discussion of ethical consideration of the study is presented. The chapter closes with a brief summary.

4.2 Research design

A research design is necessary for a study as it acts as a framework or plan that guides the execution of the research method and the analysis of the research data. Bryman (2008)

states that "a research design provides a framework for the collection and analysis of data" (Bryman 2008, p.31). It represents a specific outline, blueprints, plan or strategy need to be carried out in order to seek for the answer to the research questions of a study (Churchill and Iacobucci 2002; Johnson and Christensen 2004; Aaker et al. 2013). At such, the research design details the sequence of steps that the study needs to follow to solve the research problems and ensure the research study can be properly executed.

According to Aaker et al. (2013) and Churchill and Iacobucci (2002), all research designs can be classified into three different approaches: exploratory, descriptive and causal research designs. Research objectives, research questions, the hypotheses and data collection method will be different in each of these approaches. Exploratory research aims to uncover general insights into a research problem of which little prior knowledge is known about the issue or topic. It aims to help decompose a general, and vague problem statement into a smaller and more specific problem statement(s). It is particularly useful for understanding a phenomenon, for developing and formulating hypotheses and for establishing priorities for study. Thus, exploratory research hypotheses will be usually generalised or loosely defined. The research methods of exploratory type are usually flexible, unstructured and qualitative in nature; for example focus groups, individual unstructured interviews, case studies, and literature reviews are particularly employed in exploratory research (Churchill and Iacobucci 2002; Aaker et al. 2013).

Descriptive research design is aimed to determine the relationship between variables. In contrast to exploratory research design, descriptive research is usually rigid and employs quantitative research methods. The hypotheses are often existing or well-defined as prior knowledge about the issue or research problem has been documented. The hypotheses of descriptive research are not aimed at studying casual relationships, but the results of

descriptive research can demonstrate that the variables are related and, to a certain extent, infer the presence of causal relationship between variables by measuring the strength of association between variables. Descriptive research designs are employed in a large proportion of marketing research as they can provide a snapshot of a particular aspect of the market environment; for example, to collect data from a large sample size in order to understand the socioeconomic and demographic characteristics of the consumers of a product. Secondary data, interviewing, observation and surveys are the research methods usually employed in the descriptive research design (Churchill and Iacobucci 2002; Aaker et al. 2013).

Longitudinal and cross-sectional designs (also known as survey design) are the two main types of descriptive studies. Longitudinal studies often require measurement of panel data for analysis. Churchill and Iacobucci (2002) define a panel as "a fixed sample of individuals or some other entities from whom repeated measurements are taken." (Churchill and Iacobucci 2002, p.122). There are two types of panels: True panels and omnibus panels. True panels refers to a fixed sample of individuals from which are taken the same measurements in each measurement period. Omnibus panels refer to a fixed sample of individuals from whom different measurements are taken in each measurement period (Churchill and Iacobucci 2002).

Cross-sectional study is the most popular and important type of data collection method used in descriptive research design (Churchill and Iacobucci 2002). Cross-sectional study is also known as survey study (Bryman 2008). In contrast to longitudinal studies, cross-sectional studies require collecting data from a sample of the population of interest at a particular of time. Quantitative data (including dependent and independent variables) are collected by questionnaire or by structured interview with more than one respondent at a

single point of time in order to examine relationships between variables (Churchill and Iacobucci 2002; Bryman 2008; Aaker et al. 2013).

Lastly, causal research design aims to examine the cause-and-effect relationship between the variables. Descriptive research only shows two variables are associated but it cannot determine or explain which variable causes the value of other variables. As such, the research hypotheses of causal research are very specific when compared with the other two research designs. Laboratory experiments and field experiments are the two major types of research methods in causal research design (Churchill and Iacobucci 2002). Experimentation is usually employed in causal research design in order to answer causal research questions. Experimental design is a scientific investigation which aims to examine and determine cause-and-effect relationships. It requires manipulating one or more independent variables in controlled conditions in order to examine if they have any effects on the dependent variable(s) (Churchill and Iacobucci 2002; Johnson and Christensen 2004; Byrman 2008; Aaker et al 2013).

Since the manipulation of the independent variables is not rigorously undertaken in any other research designs, causal research provides strongest evidence of all research designs to prove cause-and-effect relationships (Johnson and Christensen 2004). However, it should be noted that many independent variables cannot usually be manipulated easily (Bryman 2008). Thus, it is not always feasible and practical to conduct experimental research in some fields; such as the research aims of the current study.

As an alternative to strict experimental designs, and based on the knowledge and theory reviewed from literature, the researcher can formulate cause-and-effect hypotheses and the research variables that can be tested using causal research modelling. Rather than using

experimental design which requires explicit manipulation of experimental variables, casual modelling; commonly employing Structural Equation Modelling (SEM), can be used to examine the causal relationships between variables in the proposed causal research model of the study using survey data for investigation of the research questions. SEM has been increasingly employed in management and marketing research (Barroso et al. 2010). A range of SEM computer programs are commonly employed including LISREL and AMOS (Chin, 1998a; Barroso et al. 2010). Henseler et al. (2009) confirm that SEM, including both covariance based SEM (CBSEM) and Partial Least Squares (PLS) are powerful statistical techniques for estimating parameters of conceptual models and testing causal relationships between manifest and latent variables of causal models in international marketing research. Consequently, SEM is used in the current study as it can examine not only causal relationship among two variables, but it can also be used to estimate and test the multiple causal relationships between multiple independent variables on one or more dependent variables, and, in addition, it can provide the amount of unexplained variance. In a single model, SEM provides comprehensive analysis on both, so-called, "measurement" and "structural" models. That is, the measurement model provides reliability and validity measures of manifest variables and describes how the latent variables are explained by manifest variables; and the structural model provides information to establish if there are any significant causal relationships between independent and dependent latent variables based on hypotheses consideration (Barroso et al. 2010). Maxwell and Mittapalli (2008) suggest causal modelling and SEM can be classified as quantitative explanatory research in that it aims to explain and test the research questions as well as hypotheses, rather than to just describe the issue studied. It goes beyond the pure description of the research in question, and provides explanation and estimation of the contribution of independent variables on dependent variables. This study aims to test a range of hypotheses so as to explain the relationships among brand awareness, brand association, perceived quality,

brand loyalty and behavioural intentions. As such, it can thus be characterised as explanatory research (Johnson and Christensen, 2004).

As mentioned previously, structural equation modelling encompasses two families of SEM statistical techniques, namely, covariance-based SEM (CBSEM), as represented by LISREL and AMOS, and variance-based (components-based) techniques, as represented by partial least squares (PLS) path modelling. They are designed to serve different objectives. (Chin, 1998a; Barroso et al. 2010). In this study, partial Least Square (PLS) path modelling analysis of SEM was chosen for data analysis as it is the most appropriate for use in theory development rather than theory confirmation (Reinartz et al. 2009; Barroso et al. 2010). The choice of PLS instead of covariance based SEM will be discussed in detail in the next section.

According to Aaker et al. (2013), all these three types of research approaches may suggest causal relationships between two or more variables; however, experimental research design can demonstrate the greatest causal inference due to the use of controlled experiment settings and variables. In practice, and also in the present study, it is commonly not feasible and practicable to manipulate independent variables, and thus causal modelling was employed to explore the causal relationships among the hypothesised variables. From the literature review, the concept of brand equity has emerged since the 1980s, and prior knowledge of the topic was gained using a review of the literature relevant to the key constructs. Given the research objectives, problems and hypotheses which have been identified, explanatory research, according to the classification of Maxwell and Mittapalli (2008) and Johnson and Christensen (2004), using the survey method (personal interview) was deemed to be the most appropriate design for the current study. Within the survey method, personal interviewing was chosen for the current study because the study required

collecting large amount of data per interview. This involved a long questionnaire to obtain data which has not been collected and publically available, such as the price of CE programmes that the respondents had paid or are paying, the number of years of customer relationships with various CE institutions, the feelings and attitudes of the respondents towards Hong Kong CE institutions, and so on. The target population of the study was all the people who are living in Hong Kong of the age of eighteen or above. The study required a amount of data with "quality" responses, and a minimum of missing data, were vital to the study and the "mall intercept" interviews at subway stations in central business districts of Hong Kong using face-to-face personal interviewing were used because costs are low since the interviewer does not need to travel excessively and respondents are abundant (Aaker et al. 2013). Respondents can answer the question efficiently and effectively because questions are clearly asked by the principal researcher solely across all the respondents. More details about the survey method of the study will be further discussed in Section 4.6, data collection for the main study.

In summary, three types of research design are discussed in this section. Given the research context of the current study and that the research objectives, problems and hypotheses have been identified, it is suggested that both descriptive (Churchill and Iacobucci 2002; Aaker et al. 2013) and explanatory research approaches (Maxwell and Mittapalli 2008; Johnson and Christensen 2004) using a cross-sectional survey method, employing personal interviews, are the most appropriate research design and method for the current study. The selection of statistical modelling techniques will have an impact on questionnaire design. The next section will discuss the choice of PLS over CBSEM as the main statistical modelling method of the study.

4.3 Covariance-based SEM (CBSEM) or Partial Least Square (PLS)

As mentioned above, PLS path modelling method was employed to examine the casual relationships between latent variables in the study. This section discusses the comparison between these two techniques, which resulted in the selection of PLS as the most appropriate method of data analysis for the study.

Structural Equation Modelling (SEM) was developed by K. G. Jöreskog in 1973 and has been well received by many researchers (Haenlein and Kaplain 2004). SEM is viewed as the combination of two traditions: an econometric approach focusing on prediction and a psychometric approach that models concepts as unobserved (latent) variables which are indirectly inferred from multiple observed (manifest) variables (Chin 1998a; Henseler et al. 2009; Barroso et al. 2010). SEM includes two major streams of methods; covariance-based (such as AMOS, LISREL, EQS) and variance-based (such as PLS-PC, PLS Graph) analyses, and they aim to achieve different objectives. SEM methods are viewed as a second generation of multivariate analysis (Fornell and Larcker 1987; Chin 1998a, 1998b; Haenlein and Kaplan 2004; Henseler et al. 2009; Barroso et al. 2010). They have substantial advantages over those in first-generation multivariate technique such as multiple regression, principal component analysis, and factor analysis (Chin 1998a; Haenlein and Kaplan 2004). In particular, SEM, can overcome three common limitations of first-generation techniques which assume: 1. A simple model structure; 2. All variables are assumed as observable; and 3. All variables are measured without error (Haenlein and Kaplan 2004).

The dominant SEM technique used to be CBSEM, however, since PLS was firstly introduced by H. Wold (1975, cited in Haenlein and Kaplain 2004, p.290), the use of PLS has recently increased significantly (Henseler et al. 2009; Reinartz et al. 2009; Barroso et al. 2010; Hair et al. 2011) and the application of the PLS technique can be found in various disciplines such as strategic management, organisational behaviour, marketing, consumer behaviour, e-business, information systems (Henseler et al. 2009; Hair et al. 2011). When compared with CBSEM, the use of PLS has many advantages, not offered by CBSEM, including small sample size, the distribution requirements, numbers of variables, and the complexity of the model. PLS can be applied to both reflective and formative models; while CBSEM technique can only be used to measure reflective models as the inclusion of any formative measures in CBSEM will be problematic (Chin 1998a; Henseler et al. 2009; Barroso et al. 2010; Hair et al. 2011). The comparison of CBSEM and PLS will be discussed in the next section.

In general terms, CBSEM and PLS were developed to serve different objectives. CBSEM aims to "estimate the parameters of the model (that is path values and factor loadings) in order to minimise the difference between the sample covariances and those predicted by the model" (Barroso et al. 2010, p.429). That is, CBSEM aims to minimise the difference between the covariance matrix observed in the sample and the theoretical covariance matrix implied by the CBSEM model (Haenlein and Kaplan 2004; Reinartz et al. 2009; Hair et al. 2011); but it is not focusing on explained variance (Hair et al. 2011). CBSEM is best used in confirmatory research which emphasises overall model fit, and is effective in theory testing with empirical data (Chin 1998a; Hair et al. 1998; Haenlein and Kaplan 2004; Henseler et at.2009; Reinartz et al. 2009; Barroso et al. 2010). PLS, on the other hand, aims to maximise the variance explained for all dependent variables (endogenous or unobserved variables) via a series of ordinary least squares regressions (Haenlein and

Kaplan 2004; Reinartz et al. 2009; Barroso et al. 2010; Vinzi et al. 2010; Hair et al. 2011).

PLS combines multiple regression and principal component analysis functions (Abdi 2003).

In fact, PLS is best suited to prediction of the dependent variables including both manifest and latent variables. PLS is best used for exploratory research and when the focus of the research is on prediction-oriented research and theory development (Chin 1998b, 2010; Henseler et at. 2009; Reinartz et al. 2009; Barroso et al. 2010; Hair et al. 2011), though PLS can also be applied for theory confirmation (theory testing) (where this is the major function of CBSEM), if the CBSEM parameters are violated (such as the normal distribution assumption, minimum sample sizes, maximum model complexity, or in the testing of formative models) (Henseler et al. 2009, p.297). Moreover, PLS is suited where the research is aimed to test the relationships between latent variables and to predict the latent variables in the model. The choice between using CBSEM and PLS depends on the objective of the research; in particular, theory testing (confirmatory) or theory building (exploratory). In other words, CBSEM is more suitable for research in which there is a strong priori model, established with the basis of well-developed theory and where the research objectives are primarily for theory testing and confirmation. PLS, on the other hand, is more appropriate if the research objectives are concerned with exploration, and prediction. It aims primarily to test causal-predictive analysis where there is little *a priori* knowledge. It provides latent variable scores which are measured by one or more manifest or observed variables. In addition, PLS can handle more complex models with a large number of latent and manifest variables and much smaller sample sizes when compared with CBSEM methods (Chin 1998b, 2010; Haenlein and Kaplain 2004; Henseler et al. 2009; Reinartz et al. 2009; Barroso et al. 2010; Hair et al. 2011). Whereas CBSEM usually requires the minimum sample size of 200 and preferably exceeds 250 cases in order to avoid improper solutions and even requires exceeding 500 sample sizes if the indicator loadings are low (Reinartz et al. 2009). Nasser and Wisenbaker (2003) suggest a smaller

sample size requirement for CBSEM, nevertheless, the sample cases, at the smallest, should exceed 100 cases to avoid the issues of unacceptable fit and problematic solutions. In contrast, since the parameter estimation is conducted by a series of ordinary least squares (OLS) regressions in PLS (Reinartz et al. 2009; Hair et al. 2011), Chin (2010) suggests 20 cases per dependent variables is enough if following the principle of the OLS regression (that is, correlations) rule, for example, 60 sample cases are enough if the research model consists of 3 dependent variables. In addition, Barclay et al. (1995) suggest a rule of thumb for minimum sample sizes for any robust PLS models; namely, "ten times the largest number of structural paths directed at a particular construct in the inner path model." That is to say, the largest number of structural paths directed at the construct in the inner path model of the current study are four, therefore, the minimum sample sizes for the PLS of the current study is forty (Barclay et al. (1995), cited by Henseler et al., 2009, p. 292) (Figure 4-1 in Section 4.4.1).

CBSEM requires that variables satisfy the normal distribution assumption and are intervally-scaled. In contrast, PLS is a component-based and non-parametric method which does not require any assumptions on the distributional and the measurement scales of variables (Haenlein and Kaplan 2004; Reinartz et al. 2009; Fornell and Bookstein 1982, cited in Barroso et al. 2010; Chin 2010). If the CBSEM requirements (such as sufficient sample sizes, normal distribution data, etc.) are not violated, CBSEM provides accurate parameter estimates which are equal to or better than PLS estimates (Henseler et al. 2009; Reinartz et al. 2009). However, in view of the minimal assumptions of PLS and when it is used for causal prediction and theory development, or where the CBSEM premises are violated, PLS has thus significant advantages over CBSEM, it is always regarded as a powerful and preferred method of analysis (Reinartz et al. 2009; Barroso et al. 2010; Hair et al. 2011), and its statistical power is arguably always better than or equal to CBSEM

(Reinartz et al. 2009). On the other hand, the inclusion of additional incorrect or weak indicators will result in a worse fit in covariance-based SEM. In PLS, however, the inclusion of incorrect or weak indicators will be reflected in lower weights and such inclusion will assist in extract useful information on the indicator thus resulting in a better construct score (Barroso et al. 2010 p.433).

In order to assess the statistical significance of a CBSEM model, it is necessary to examine coefficient estimates ($t > 1.96$) and overall model fit measures. If there are non-significant parameters in CBSEM, it is necessary to re-formulate the model (Hair et al. 1998; Barroso et al. 2010). For PLS models, the path coefficients (β) and the explained variance in the endogenous variables (R^2) are the two major indices required for the overall evaluation of the model.

As mentioned above, CBSEM emphasise overall model fit, as CBSEM is developed for use in theory testing rather than theory building (Anderson and Gerbing, 1988; Henseler et al. 2009). Model fit indicates how well the sample covariances are matched with the parameter estimates; but it is not an indication of how well item measures and latent variables are predicted by the CBSEM model. Therefore, models with excellent "goodness-of-fit" indices may still be considered weak or poor because of weak or poor results of the R-square and factor loadings (Chin 1998a; 2010). PLS, however, by design, does not provide global goodness-of-fit measures (Chin 1998a; Barroso et al. 2010). Nevertheless, some researchers have suggested measures (for example, two type of Q^2 tests: cross-validated communality and cross-validated redundancy) to evaluate the predictive relevance of endogenous constructs in PLS model, and a global criterion of goodness-of-fit (GOF) for PLS, which will be discussed in detail in the next chapter, the Findings Chapter.

CBSEM and PLS should be regarded as complementary methods, and not competitive (Henseler et al. 2009; Wold 1985, cited in Borroso et al. 2010, p.432; Jöreskog and Wold 1982, cited in Hair et al. 2011, p.140). The choice of CBSEM or PLS depends on a range of considerations, such as, the research objective, the complexity of the model, sample sizes, and whether the model is reflective or formative, or both. PLS is designed to test causal-both predictive and exploratory analysis nature and is suited to complex model, and using non-parametric distribution data and small sample sizes. Moreover, PLS is best suited where the research is aimed to test the relationships between latent variables and predict latent variables in the model (Chin 1998b, 2010; Haenlein and Kaplan 2004; Henseler et al. 2009; Reinartz et al. 2009; Barroso et al. 2010). For the current study, PLS can be justified as the most appropriate method for a range of reasons. In particular, the purposes of the current study are to test the causal interrelationships among four dimensions of brand equity of the CE institution, and to measure the strength of the relationships of the four dimensions of brand equity to consumers' behavioural intentions in the service context of CE. In addition, it is recognised that PLS is preferable and robust when the sample size is smaller than the minimum requirement of CBSEM (that is, 200 cases). Further, in PLS, the data do not have to be normally distributed, and all items are not necessary to be measured by interval scales (as is required for CBSEM) (Chin 1998b, 2010; Haenlein and Kaplan 2004; Henseler et al. 2009; Reinartz et al. 2009; Fornell and Bookstein 1982, cited in Barroso et al. 2010; Hair et al. 2011), PLS was thus chosen as the most appropriate method for the study.

In short, given that the purpose of this study is to examine the causal interrelationships among the dimensions of brand equity, and predict each brand equity dimensions to consumers' behavioural intentions and willingness to pay more fee for a CE programme; the comparison between CBSEM and PLS has been discussed, PLS has been chosen as the

most appropriate statistical data analysis technique for the study. By using the PLS modelling, the presence of causal relationship between the variables can be inferred by measuring the strength between the variables in the research model, and the contribution of the influence of independent variables on dependent variables can be assessed. Moreover, the hypotheses of the study developed from the review of literature can be tested for theory confirmation. The following section will discuss the operationalisation of constructs in the proposed model.

4.4   Questionnaire design

The questionnaire design drew principally upon Aaker's (1991) and Keller's (1993, 2003) suggested measurements of consumer-based brand equity, and Moran's (1993, 1994) model to measure the financial value of brand equity. In order to adequately reflect the four dimensions of a customer-based brand equity model of the Hong Kong CE industry, it was necessary to employ some adaptations for local market circumstances in this research. Later discussions in Section 4.4.1 refer to an embargoed ("commercial in confidence") Hong Kong continuing education research report (HKU SPACE 2004) which provided relevant information for the design of the questionnaire and about local market data of the Hong Kong CE industry.

As mentioned in Chapter 2, published articles and discussion and publicly available data regarding the Hong Kong continuing education industry are extremely limited. The most likely commercial source of industry data is a Hong Kong public organisation, the Federation for Self-financing Tertiary Education (FSTE) (formerly known as the Federation for Continuing Education in Tertiary Institutions), which was established in 1994. Its aim is to promote lifelong learning and education, and its membership includes 14 CE institutions, including the CE extension arms of the eight local public universities

(founder members) and six non-profit making educational institutions in Hong Kong. Unfortunately, there are no available statistical data concerning local CE industry/institutions available on its website (FSTE 2012), such as the total annual amount of program income of the local continuing education industry, the annual student enrolment numbers, or the number of programs of each member provided, etc. (FSTE 2012). However, the published data note that its members offered a total of 783 "non-local higher and professional education courses" as of September 2011 (that is, courses conducted by a non-local institution or professional body in collaboration with a local institution of higher education), of which 706 courses accounted for 97.2% of all courses exempted from external quality assurance under the "Non-local Higher and Professional Education (Regulation) Ordinance (Cap. 493)" of Hong Kong Special Administrative Region (FSTE 2012). In addition, it also stated that its member institutions provided a total of 5418 programs as at the end of September 2011 approved by the Hong Kong Continuing Education Funded Scheme (CEF), Hong Kong Government Special Administrative Region. In addition, FCE members' approved CEF programs accounted for 73% of the total number of 7392 programs of available CEF reimbursable programs as at the end of September 2011 (FSTE 2012). Although this is the only available data provided in FCE's website, it indicates that the Hong Kong CE sector is clearly dominated by FCE member institutions. This information proved to be useful in the questionnaire design.

Since the Hong Kong CE industry lacks comprehensive objective and publically-available market data, the School of Professional and Continuing Education of Hong Kong University (HKU SPACE) previously commissioned an independent commercial research agency to conduct a territory-wide survey on the public demand for continuing education on five occasions, twice yearly since 2001. Two of the latest reports, the Survey on the Demand for Continuing Education in Hong Kong 2007/2008 and 2009/2010, were

published in July 2008 and October 2010, respectively (HKU SPACE 2008a, 2010). Since the data in those surveys were collected through telephone interview by the independent commercial research agency, the number of questions asked was relatively small when compared with the number of questions included in the current study. Nevertheless, the results of these surveys provided certain useful benchmark information regarding the trends and the development of the Hong Kong CE industry and also some inputs in the questionnaire design of the study (HKU SPACE 2008a, 2010).

As mentioned above, and based on the information provided by FSTE (2012), the Hong Kong CE industry is mainly dominated by the FSTE members and eight of them are, in fact, the extensions arms of eight local public universities. In addition, the Hong Kong Vocational Training Council (VTC) (also a member of FSTE) was also considered in the current research as a major CE player in Hong Kong, together with the above eight extension arms of local public universities. VTC, which was established in 1982 and is funded by Hong Kong Government Special Administrative Region, has also been actively providing various continuing education programs for the community for decades. It is the largest vocational education and training institution in Hong Kong with approximately 240,000 students each year (VTC 2012). Furthermore, the Hong Kong Management Association (HKMA), as one of the major players in Hong Kong CE industry, was also included in the questionnaire design as it is the largest local private continuing education provider with the longest history of establishment in Hong Kong since 1960. Currently, it has approximately 12,000 members in 2012 (HKMA 2012b). In 2011, HKMA organised 2,012 management education and training programs with 32,738 participants (HKMA 2012a).

These ten major continuing education institutions are referred to as the "Big Ten" throughout this thesis and were included in the pre-coded answers of some questions of the questionnaire for easy reference and increased efficiency during data collection. The "Big Ten" continuing education institutions are as follows (in random order):

Name of ten major Hong Kong CE institutions, "Big Ten" (with abbreviations)

1. School of Professional and Continuing Education, Hong Kong University, HKU SPACE

2. School of Continuing and Professional Studies, Hong Kong Chinese University, HKCU SCS

3. School of Professional Education and Executive Development, Hong Kong Polytechnic University, HKPU SPEED

4. School of Continuing Education, Hong Kong Baptist University, HKBU SCE

5. School of Continuing and Professional Education, Hong Kong City University, HKCityU SCOPE

6. Li Ka Shing Institute of Professional and Continuing Education, Hong Kong Open University, OUHK LIPACE

7. College of Lifelong Learning, Hong Kong University of Science and Technology, HKUST CL3

8. Lingnan Institute of Further Education, Hong Kong Lingnan University, HKLU LIFE

9. Hong Kong Vocational Training Council, VTC/IVE

10. Hong Kong Management Association, HKMA

As the Hong Kong CE industry is dominated by the extension arms of University Grants Committee (UGC) funded universities, all those major continuing education providers are actually highly similar in the nature of business and the range of programs and thus, they

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all provide a range of relatively homogeneous programs and services to the local community. This homogeneity will be reflected in some of the subsequent survey findings and brand equity calculations.

This study used a face-to-face, personal interview survey in collecting data for measuring brand equity (from both marketing and financial perspectives) of the Hong Kong CE institutions. For measuring the financial perspective of brand equity, three major components in the proposed brand equity model (adapted from Moran (1993, 1994) brand equity model) – market share, price premium and loyalty – were previously identified and discussed in Chapter 2 and were included in the questionnaire. Thus, the data collected were then applied to calculate the overall brand equity valuations of the ten major players of CE industry. The data collected specifically for measuring financial brand equity are; relative market share; average program price; and average number of years of customer relationship. In relation to providing the data for the financial brand equity calculations, questions B1–B5 were designed to estimate market share of each CE institutions, average programme years and number of CE programmes studied, and used a nominal scale for questions B1–B2 (yes or no) and a ratio scale for questions B3–B5 to indicate the number of CE programme studied and the years of studying. In addition, questions B6–B8 were designed to understand the amount spent on CE programmes in 2009 for each CE institution and used a nominal scale for questions B6–B7 (yes or no) and a ratio scale for question B8 to indicate the amount of CE programme spent in 2009 (Appendix A).

In addition, adapted from Aaker's (1991) and Keller's (1993, 2003) brand equity models and a local continuing education research report (HKU SPACE 2004), further data were also collected for measuring the components of customer-based brand equity of the Hong Kong CE industry, including: brand awareness; brand association; perceived quality and

brand loyalty (Appendix A). The operationalising of these four major constructs of CBBE and the details of the questions will be separately discussed in the next Section 4.4.1.

In addition, data on behavioural intentions; namely, willingness to pay more for a CE program, and the likelihood of purchasing and recommending a CE program of the local CE brands, were collected by asking questions E3, and E6–E7, using a nominal scale for question E3 (yes or no) and a 5-point scale (interval scale) for questions E6–E7 (Appendix A). In addition, the survey data included descriptive questions, such as the most preferred CE institutions; CE programme subjects; demographic information of customers, etc., to establish the key characteristics of the Hong Kong CE industry. (The complete questionnaire is shown in Appendix A).

The wording of questions, the inclusion of items and the measures chosen were adapted and selected from the suggested measures of Aaker (1991), Keller (1993; 2003), Moran (1993, 1994) and the Hong Kong continuing education research report (HKU SPACE 2004). They also reflect comments from the expert review panel which comprised a small number of a convenience sample of professionals, including the members of senior management of two local continuing education institutions and two professionals with Information Technology expertise working in two local universities and a marketing professional from the commercial sector, and respond to the need for clarity and to ensure that the wording truly reflected the constructs to be measured, while avoiding repetition and ambiguity.

While it could be argued that telephone or internet-based surveys could have been employed to collect the necessary data, face-to-face interviews were felt to offer time and cost advantages in this case. In addition, all interviews were solely conducted by the

research principal investigator personally, thereby assuring consistency and quality in administering the questionnaire. The questionnaire employed a mix of pre-coded, semi-structured and open-ended questions.

In summary, the survey questionnaire was based on Aaker (1991) and Keller's (1993, 2003) conceptualised consumer-based brand equity frameworks, using quantitative items and scales to measure dimensions of brand equity, that is, to capture the customer's mindset. In order to truly reflect the context of Hong Kong continuing education, based on the expert reviews, some questions of the perceived quality construct of CBBE model were necessarily adapted from a local research report (HKU SPACE 2004). The survey also drew upon Moran's (1993, 1994) brand equity model to measure the financial value of brand equity. (The details of proposed FBE model have been discussed in Chapter 2). These frameworks were adapted to study the customer and financial-based brand equity of the Hong Kong CE industry. The next section discusses the operationalisation of constructs of the proposed consumer-based brand equity research model.

4.4.1   Operationalisation of constructs of proposed customer-based brand equity model

The research model, conceptual definitions for all latent constructs and the causal hypotheses of the study were presented in chapter 3. This section discusses the measures of the components in the proposed customer-based brand equity model of the study. In particular, the measure of the study is developed for measuring customer-based brand equity dimensions as suggested by Aaker (1991) and Keller (2003). As discussed by Donthu and Yoo (2001) and Pappu et al. (2005), Aaker (1991) and Keller's (1993) consumer-based brand equity conceptualised models generally consist of four dimensions: brand awareness, brand associations, perceived quality of brand and brand loyalty, and the

customer-based brand equity is crucial in driving customers' behavioural intentions (Aaker 1991, Keller 1993, 2003, Donthu and Yoo 2001). The items selected for measuring the constructs of customer-based brand equity were adapted from Aaker (1991) and Keller's (2003) suggested measures. The actual wording was also chosen based on comments from the expert reviewers and considering the need for clarity, and to be truly reflective of the constructs to be measured, avoiding repetition and ambiguity. This best ensured the content or face validity of the study (Hair et al. 1998, 2006; Johnson and Christensen 2004). Content validity is related to "the assessment of the variables to be included in a summated scale and its conceptual definition" (Hair et al. 2006, p.136). This is conventionally achieved through the subjective assessment of experts and/or through pre-tests (Hair et al 2006). The expert review in the current study was undertaken by a convenience sample of professionals, including the members of senior management of two local continuing education institutions and two professionals with Information Technology expertise working in two local universities and a marketing professional from the commercial sector, who were asked separately to give comments on the questionnaire and on the items of the brand equity construct. All of these professionals are at least degree holders or above and some of them hold a PhD. They either have had extensive knowledge in conducting academic research in academic institutions or marketing research in the commercial sector.

At the same time, it has been discussed in Chapter 2 and 3 that there have been no previous published attempts to operationalise the constructs of brand equity in the continuing education or higher education context. Consequently, some measures/items as suggested by Aaker (1991) and Keller (2003) for measuring the construct, such as the perceived quality, might not be accurately reflected in the context of Hong Kong continuing education sector. As a result, and drawing on a local continuing education research report (HKU SPACE 2004), the researcher developed several new items as the first attempt in

operationalising the perceived quality construct in the current study. This process of operationalising reflected the fact that, as discussed in Chapter 2, scholars agree that brand equity is a broad, complex and multi-dimensional concept. Thus, Aaker (1991) and Keller's (1993, 2003) conceptualisation of brand association includes various dimensions and sub-dimensions which were not feasible to be fully covered in the current survey questionnaire in view of the research objective and the time and location constraints of the respondents. For example, Aaker's (1991) conceptualised brand equity model includes eleven types of brand association. Consequently, in the current study, five pre-set brand association and twenty pre-set perceived quality questions, agreed by the expert reviews and appropriate to the local CE context, were asked. The study employed methodological steps in order to ensure the items of the constructs are reliable and valid. These will be discussed in details in Section 4.5.4.

As shown in Figure 3-2 in previous chapter, the study aims to test the causal interrelationships between the brand equity constructs and consumers' behavioural intentions in Hong Kong continuing education sector. The proposed research model in Figure 3-2 is re-shown here for the purpose of convenience and clarity of the discussion in the following section. The partial least squares modelling (PLS) technique was employed in the study in order to examine the hypothesised causal relationships among the constructs. In the following Figure 4-1, the arrows clearly indicate the direction of causality of the hypothesised relationships; pointing from the exogenous variables to endogenous variable via mediating variable (if necessary). All the hypothesised relationships of the study are positive.
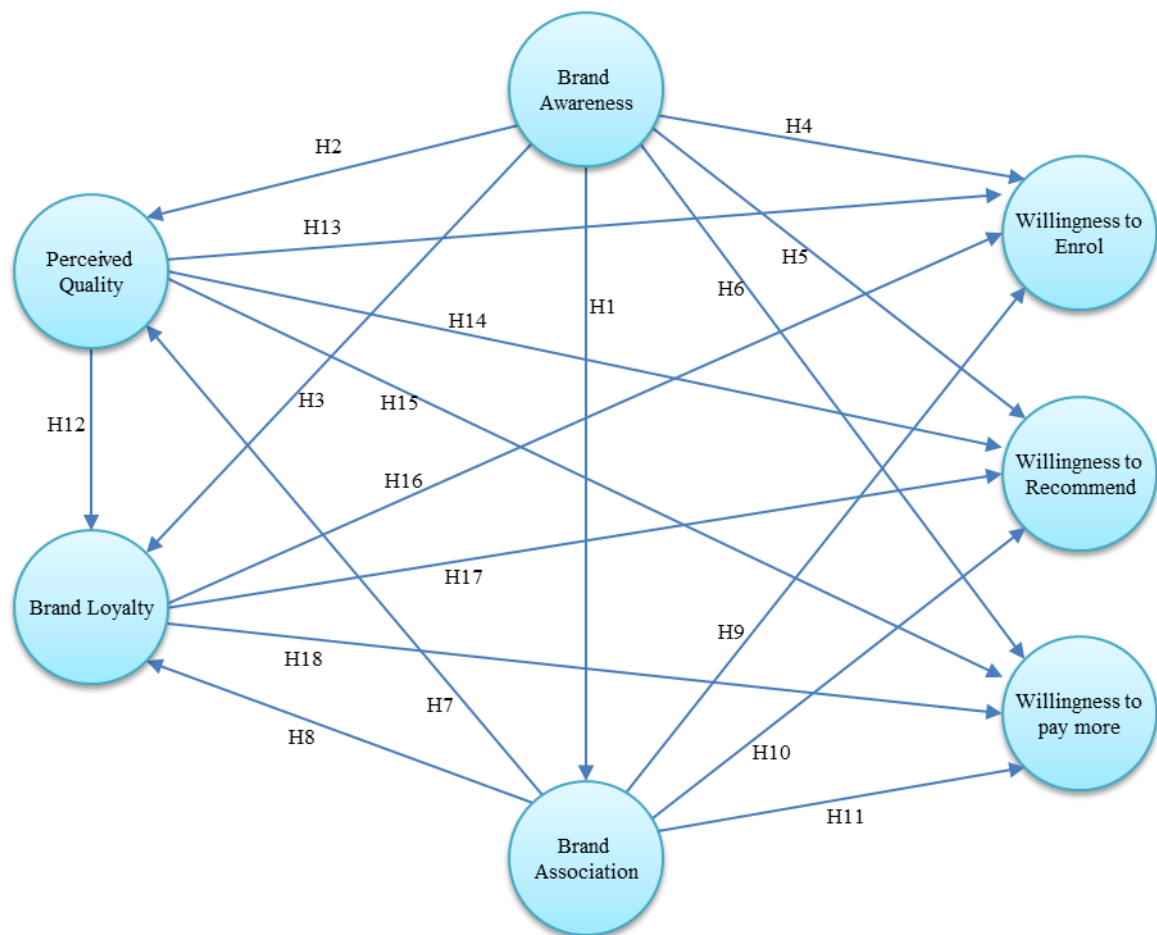
Figure 4-1. The CBBE model of current study

Brand awareness

Aaker (1991) and Keller (1993, 2003) proposed brand awareness consists of two dimensions: brand recognition and brand recall. Brand recognition refers to when a consumer is able to identify a brand to which he/ she has been exposed when given the brand name or logo as a cue. Brand recall refers to when a consumer is able to retrieve a brand from his/ her memory when given a specific product category when prompted without giving a cue (Keller 2003, p.67). Aaker (1991) suggests that brand recognition (the lowest level) can be tested via an aided recall method; that is to ask respondents to identify any brands in a specific product class that they have heard before. Brand recall (the next level) can be tested by unaided recall by asking respondents to name a brand name in a specific product class, from which, the first brand name recalled without prompting

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indicates top-of-mind awareness (Aaker 1991). On the other hand, Keller (2003) suggests measures of brand salience include four items to test the brand awareness of the consumers (Table 4-1). Based on suggestions by Aaker (1991) above and Keller (2003) in Table 4-1, this study utilized three items to measure of brand awareness adapted from both Aaker (1991) and Keller's (2003) suggested measures (Table 4-1). The third and the forth items suggested by Keller (2003, p.97) as shown in Table 4-1 were excluded because of less relevance, in that pursuing a CE programme is unlike purchasing a frequently purchased product/ service. In short, to incorporate Aaker (1991) and Keller's (2003) CBBE measures, questions A1–A3 were designed to understand CE brand awareness, and were measured using a nominal scale for questions A1 and A3 (yes or no) and a ordinal scale for question A2 to indicate the sequence of unaided recall.

Table 4-1. Aaker (1991) and Keller's (2003) measures of brand awareness and the suggested measures of brand awareness of the study.

Author(s)	Items
Aaker (1991, p. 62)	1. Unaided recall: to test for brand recall. 2. Aided recall: to test for the brand recognition.
Keller (2003, p.97)	1. What brands of product or service category can you think of? 2. Have you ever heard of these brands? 3. Which brands might you be likely to use under the following situations? 4. How frequently do you think of this brand?
Items adapted from Aaker (1991) and Keller (2003)	1. Which Hong Kong CE institution can you firstly think of (top-of-mind awareness and unaided)? 2. Which other Hong Kong CE institutions you could recall (unaided)? 3. Have you ever heard about the following CE institutions (aided)?

Brand association

The definition of brand association was discussed in chapter 4 and refers to any perceptions associated with a brand in consumers' memories (Aaker 1991). Keller (1993,

2003) emphasises the levels of strength, favourability and uniqueness of brand associations. Keller also identifies a number of sub-dimensions in brand associations of consumer-based brand equity, (including product and non-product related attributes, functional, experiential and symbolic benefits and attitudes). To a certain extent, these sub-dimensions are similar to Aaker's (1991) 11 types of suggested brand associations, (including product attributes, intangibles, customer benefits, relative price, use/application, user/customer, celebrity/person, life style/personality, product class, competitors and country/geographic area), though Aaker (1991) did not propose specific measures/ items. In the current study, it was felt that it would be rather difficult and not feasible to ask the respondents too many questions covering all possible sub-dimensions of brand associations. This might also affect the clarity of questions, thus increasing the possibility of ambiguity and fatigue for the respondents. The aims of the current study are to test the causal relationship among the constructs of brand equity in the context of the Hong Kong CE industry. It is not aimed at identifying all possible underlying dimensions of the constructs of customer-based brand equity of the local CE industry. Indeed, the essences of brand associations of any consumer products or services are principally concerned with their strength, favourability and uniqueness (Keller 1993, 2003, p.67), and therefore, these were the first three measurement items of brand associations adopted in the study (In addition to these three items of brand associations, a further set of questions concerning the perceived quality dimension, which, as classified by Keller (1993, 2003), is also an important sub-dimension of brand associations, was separately included in the questionnaire, based on the experts' opinions. This is discussed below.). In addition to the strength, favourability and uniqueness, two further brand association questions concerning brand imagery and consumers' brand judgement (attitude) suggested by Keller (2003) were included in the questionnaire (Table 4-2). In short, to incorporate Keller's (2003) CBBE measures, questions C1–C5 were designed to measure CE brand association (strength, favourability and uniqueness), brand

imagery and brand judgement measures, and were measured using 7-point Likert (interval) scales. The Likert scale is one of the most popular type of scales in survey research as it provides respondents a sufficient range of response options and can reflect their levels of agreement or disagreement with the questions in the study (Aaker et al. 2013). In order to ensure the reliability and validity of the items in the construct of brand associations, the methodological steps employed and the results will be discussed in Section 4.5.4.

Table 4-2. Keller's (2003) measures of brand associations and the suggested measures of brand associations of the study

Author(s)	Items
Keller (2003, p.67, p. 97 and p.98)	1. The strength, favourability and uniqueness of the band associations play a critical role in determining the differential response making up the brand equity. 2. How unique is this brand? 3. How superior is this brand to others in the category? 4. To what extent do the makers of this brand understand your needs? 5. To what extent do you feel you grew up with the brand? (Imagery)
Items adapted from Keller (2003)	1. This institution is an excellent CE institution (favourability). 2. Compared with other institutions in CE industry, this institution is unique (uniqueness). 3. Compared with other institutions in CE industry, this institution provides superior performance (strength). 4. This institution meets my needs. 5. I feel that I grew up with this institution.

Perceived quality

Aaker (1991) proposed perceived quality is one of the important dimensions in consumer-based brand equity. (As mentioned previously, Keller treats perceived quality as a brand association.) It refers to the customer's perception or judgement of the overall quality of a product or service. Perceived quality differs from consumer satisfaction or attitude. For example, a consumer might have a negative attitude toward a high-quality product that the product is overpriced (Aaker 1991). Aaker (1991) suggests perceived quality is an

intangible customer perception and reflects an overall feeling about a brand. Aaker (1991) further suggests that perceived quality has underlying dimensions which include product characteristics such as performance and reliability, and by itself is a summary construct. He suggests some measures for measuring sub-dimensions of perceived quality (Aaker 1991, p.91), although it is clear that the underlying dimensions of perceived quality might vary across different products and services.

Both Aaker (1991) and Keller (2003) have suggested measures of the (perceived) quality construct (Table 4-3), while Aaker (1991) further suggests that it is necessary to measure the overall feeling about the perceived quality of a brand in a general sense. Similarly, Keller (2003) also suggests four items in measuring the perceived quality construct, in which one item measures the overall feeling towards a brand. Therefore, adapted from Aaker (1991) and Keller's (2003) suggested measures, a question concerning the overall feeling about a brand was included in the study as measuring/ summarising the overall opinion of a brand's perceived quality (Question D3 in the study questionnaire).

In response to Aaker's (1991) suggestion that perceived quality is a summary construct, one of the sub-objectives of the study is to test if a single overall rating of perceived quality would be better than multi-items (perceived quality consisted of 20 items) under the dimension of perceived quality. In addition, multi-items measures have been the common practice in marketing research; nevertheless, Bergkvist and Rossiter (2007, 2009) have empirically studied that single-item and multiple-items measures of constructs in marketing are equally predictively valid. The results of single-item and multi-items measures of perceived quality construct will be presented in the Chapter 5.

Beyond overall quality, according to Aaker (1991), perceived quality has a number of underlying dimensions. From the review of literature in chapter 2 and 3, there is a lack of empirical research in measuring customer-based brand equity in the education sector. In order to accurately and comprehensively measure the sub-dimensions of perceived quality in continuing education, a series of twenty items were developed, which were mainly adapted from measures of perceived quality in an embargoed ("commercial in confidence") research report on Hong Kong continuing education (HKU SPACE 2004) and also partly adapted from other suggested items from Aaker (1991) and Keller's (2003) suggested measurements. These twenty items were reviewed by the experts and were deemed to adequately reflect the sub-dimensions of perceived quality of Hong Kong CE brands. The particular measures/ items used in the study are shown in the following Table 4-3. As with the brand associations construct, the construct of perceived quality in the study was measured by multi-items, and the reliability and validity of the suggested twenty items of perceived quality construct were assessed before the main study commenced and the details will be further discussed in Section 4.5.4.

In short, to incorporate expert opinions and the suggested measures of quality of CE institutions from a local CE research report (HKU SPACE 2004), questions D2 (with items 'a' to 't') and D3 (adapted from Aaker (1991) and Keller's (2003) perceived quality measures) were designed to measure CE perceived quality, and were measured using a 10-point ordinal scale where 1 means the lowest and 10 means the highest (adapted from the same measurement scales of a Hong Kong continuing education research report (HKU SPACE 2004).

Table 4-3. Aaker (1991) and Keller's (2003) measures of perceived quality and the suggested measures of perceived quality of the study

Author(s)	Items
Aaker (1991, p. 86, p. 91, and p.94) suggested sub-dimensions and items for perceived service quality	1. Perceived quality is an overall feeling about a brand. 2. Do the physical facilities, equipment, and appearance of personnel imply quality (tangible)? 3. Will the accounting work be performed dependably and accurately (reliability)? 4. Does the repair shop staff have the knowledge and skill to get the job done right (competence)? 5. Do they convey trust and confidence (trustworthiness)? 6. Is the sales staff willing to help customers and provide prompt service (responsiveness)? 7. Does the bank provide caring, individualised attention to its customers (empathy)? 8. Two other suggested dimensions of perceived quality for service context, credibility, and courtesy.
Keller (2003, p.97)	1. What is your overall opinion of this brand? 2. What is your assessment of the product quality of this brand? 3. To what extent does this brand fully satisfy your product needs? 4. How good a value is this brand?
Items adapted from Aaker (1991), Keller (2003) with asterisks *, and a research report (HKU SPACE 2004)	1. Academic reputation of the program. 2. Academic qualifications highly regarded by employers. 3. Good reputation of institution. 4. Good contribution to human resources training. 5. Good career opportunity of graduates. 6. Good social status of graduates. 7. Good quality of students. 8. Good quality assurance of programs/courses. 9. Good quality of tutors. 10. A wide variety of program/courses. 11. Program suiting my needs. 12. Worthwhile programs/courses. 13. Flexible in teaching and learning. 14. Good teaching and learning facilities. 15. Good services to students. 16. Convenient teaching and learning venue. 17. Give you a feeling of trust.* 18. Give you a feeling of professional (reliability).* 19. Give you a feeling of caring.* 20. Give you a feeling of prestige (credibility).* 21. How would you rate this institution overall?*

Brand loyalty

As mentioned in the previous chapter, "brand loyalty" is a measure of consumers'
attachment to a brand and it can be measured by the likelihood that a consumer will switch
to another brand when the price of the brand is increased or the product features of the
brand have been changed (Aaker 1991). Keller (2003) considers "brand resonance", as the
final step in building consumer-based brand equity in that it indicates the depth of
relationship that the consumer has with the brand. It reflects the degrees of behavioural
loyalty, or commitment, attitudinal attachment, sense of community and active engagement
of the consumer with the brand. Aaker (1991) did not propose specific questions in
measuring brand loyalty but he suggests that brand loyalty can be measured in a range of
behavioural terms, including actual purchase patterns; repurchase rates, percent of
purchases and number of brands purchased, but also reflecting switching costs, customer
satisfaction, liking of the brand and commitment. In the current study, in order to be clearly
understood by the respondents, and to avoid ambiguity and excessive questions; the single
item (and the most straight forward question) measures of behavioural loyalty suggested by
Keller (2003) was employed (Table 4-4). In addition, it was empirically confirmed that
both single- and multiple-item measures of constructs in marketing are equally predictively
valid (Bergkvist and Rossiter 2007, 2009). Specifically, single-item measures are
recommended for many constructs in marketing, such as, consumer's behavioural intention
toward the brand, and toward the advertisement (Bergkvist and Rossiter 2007).

In short, to incorporate Keller's (2003) CBBE measure, questions E2 was designed to
measure brand loyalty, and was measured using a 7-point Likert scale (interval scale). (As
further justification, it was also felt that enrolling in a CE program is not viewed as a
necessity or a frequently purchased item, and that therefore, other loyalty measures

suggested by Keller (2003) were deemed to be inappropriate in the context of continuing education.)

Table 4-4. Keller's (2003) measures of brand loyalty and the suggested measure of brand loyalty of the study.

Author(s)	Items
Keller (2003, p.98)	1. I consider myself loyal to this brand. 2. I buy this brand whenever I can. 3. I buy as much of this brand as I can. 4. I feel this is the only brand of this product I need. 5. This is the one brand I would prefer to buy/use. 6. If this brand were not available, it would make little difference to me if I had to use another brand. 7. I would go out of my way to use this brand.
Items adapted from Keller (2003)	1. I consider myself loyal to my favourite CE institutions.

In summary, this section discussed the operationalisation of the four component constructs of the customer-based brand equity model of the study. Because the constructs of brand association and perceived quality in the proposed model of CBBE consist of multiple items and the items have not been empirically tested, it was necessary to assess the item reliability and validity of these constructs. The next section discusses the methodological steps for ensuring the item reliability.

4.5   Suggested procedure for developing better measures

Churchill (1979) suggests a framework by which measures of constructs of marketing research can be developed and tested. As shown in Figure 4-2, he suggests eight steps in developing better measures for marketing research; namely, specify the domain of the construct, generate a sample of items, collect data in a pilot test, purify the measure, collect data in the main study, assess reliability, assess validity and develop norms. As discussed above, the measurement items for brand association and perceived quality were multiple-

items and constructed based on Aaker (1991), and Keller's (2003) suggestions, a local CE research report (HKU SPACE 2004) and expert review. Brand awareness has only one item each in measuring aided and unaided measures. Due to the fact that these multiple items have never been empirically tested, this study followed Churchill's (1979) suggested relevant steps as the framework for the item/ scale development of these two constructs.

	Recommended Coefficients or Techniques
1. Specify domain of construct	Literature search
2. Generate sample of items	Literature search Experience survey Insight stimulating examples Critical incidents Focus groups
3. Collect data	
4. Purify measure	Coefficient alpha Factor analysis
5. Collect data	
6. Assess reliability	Coefficient alpha Split-half reliability
7. Assess validity	Multitrait-multimethod matrix Criterion validity
8. Develop norms	Average and other statistics summarizing distribution of scores

Figure 4-2. Churchill's (1979, p.66) suggested procedure for developing better measures.

After specifying the domain of the construct based on the literature review in Chapter 2 (step 1), the second step is to generate the sample items of the constructs which was discussed in Section 4.4.1. In order to ensure the items generated are capturing the specified domain, Churchill (1979) suggests using a sample of expert persons who are qualified to provide judgement and comments on the generated items of the underlying constructs of the study in order to determine if the individual items adequately represent the construct. This process can be viewed as assessing the content validity of the study and is suggested whenever new measures/ items for constructs of interest are developed (Hair et al. 1998, 2006; Johnson and Christensen 2004).

As previously discussed, two component constructs of brand equity of the study; that is, brand associations and perceived quality consist of multi-item measures. Item reliability and validity tests were conducted in order to ensure for the quality of the instruments. In order to conduct the above tests, a pilot test is the suggested third step in scale development. The pilot test in the current study covered two tasks of questionnaire refinement and pretesting, and data collection for the pilot test.

4.5.1   Questionnaire development and refinement procedures

As discussed in Section 4.4, questionnaire design covered measurements/ items on both customer-based and financial-based brand equity constructs. Following the initial drafting of a proposed questionnaire, the same panel experts were asked separately to give comments on the draft questionnaire design. If one or more experts expressed concerns or a problem in the questions or wording of individual question, the item was rephrased or deleted. The amended version of the questionnaire was later provided to them for final comment. The final version of questionnaire was subsequently translated into Chinese and this Chinese version was screened again by the experts.

4.5.2 Questionnaire Pre-testing

A second round of pre-test of interviews with the Chinese questionnaire was conducted by the author with a new convenience sample of ten respondents who were aged 18 or above and who were also working in any local educational institutions (not limited to continuing education institutions). The respondents were briefed clearly by the research co-investigator regarding the objectives of the study and they were informed that their answers would be recorded anonymously. The author obtained their consent before the pre-tests commenced and they were informed that they could stop to answer the pre-test if they had any doubts. A high level of confidentiality was maintained and the contacts of the researcher's supervisors could also be provided in case they had any questions about the study.

The author administered the draft "pilot" questionnaire to the participants individually and after completion the author further interviewed the participants to obtain their feedback on the questionnaire. The discussions focused mainly on the content validity of the questions in terms of the research objectives, the clarity and layout of questions (testing the flow of the questionnaire), the length of personal interview, and the range of optional responses. The objective of the pre-test was to identify and rectify any deficiencies, such as if the draft of questionnaire is too long, the questions are ambiguous, double-barrelled or ill-defined, or if there was a problem in the sequence of the questions (Aaker et al. 2013). The researcher modified individual questions if there were any useful suggestions. The research supervisors subsequently endorsed the final version of the questionnaire. The questionnaire was also vetted and approved by the Research Ethics Committee of Macquarie University before the formal interviews commenced. The details will be further discussed in Section 4.10.

4.5.3　Data collection for pilot study

For the pilot study, two convenience sample classes of a continuing education institution were utilised. A convenience sample refers to a sample "that is simply available to the researcher by virtue of its accessibility" (Bryman 2008, p.183). One class consisted of 35 full-time Associate Degree students and the second class consisted of 35 part-time Diploma students. A combined total of 32 students were willing to participate in the pilot test. Aaker et al. (2013) suggest small samples are necessary for pilot tests (Usually, 15-25 respondents is sufficient, depending on the length and complexity of the questionnaire). The two sample classes were chosen because these students were the actual "customers" of the CE industry who had user experience and knowledge about the CE institution; and they represented both full-time and part-time CE programme customers. The objectives of the pilot test were to provide data to purify the measures and examine the item reliability and validity of the construct of brand association and perceived quality (Churchill 1979). The details of the item/scale reliability and validity tests will be discussed in the next section.

4.5.4　Purification of measure

In the next step, Churchill (1979) suggests purifying the measure by conducting reliability test and factor analysis in order to assess whether the items or scale is reliable and valid. Item reliability and validity tests should be conducted to identify any problematic items and purify the measure.

Reliability is "an assessment of the degree of consistency between multiple measurements of a variable." (Hair et al. 2006, p.137). The most commonly reliability measure is internal consistency which requires that the multiple-items or indicator measure of the same construct should be highly correlated; in other words, that they are coherent and refer to the

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same underlying construct (Hair et al. 1998; Bryman 2008). If the multiple-items are highly correlated, it indicates that the sample of items effectively represents the construct; that the construct measure is reliable. Cronbach's alpha is the most commonly used measure of internal liability. A popular rule of thumb of an acceptable size of coefficient Cronbach's alpha result is greater than or equal to 0.7 (Hair et al. 1998; Johnson and Christensen 2004) and greater than or equal to 0.8 is even more desirable (Bryman 2008). Another rule of thumb suggests that the item-to-total correlation should exceed 0.5 (Hair et al. 1998). If any items do not exceed the minimum requirements of Cronbach's alpha and the item-to-total correlation, this indicates that the scale items are unsatisfactory and should be deleted in order not to affect the quality of the constructs to be measured. The Cronbach's Alpha coefficients for brand association and perceived quality were 0.925 and 0.981 respectively. All item-to-total correlations for brand association and perceived quality exceed 0.734 and 0.763 respectively (Appendix B). This indicates that all items in the constructs of brand association and perceived quality are highly reliable and represent the same construct.

Churchill (1979) suggests conducting factor analysis after confirming that coefficient alpha is acceptable. Principal component analysis (PCA) was used to confirm scale validity and unidimensionality for the items of brand association and perceived quality constructs. Unidimensionality refers to the "characteristic of a set of indicators that has only one underlying trait or concept in common." (Hair et al. 1998, p.584). PCA helps to decide the minimum number of factors which account for the maximum portion of the variance represented in the original variables set (Hair et al. 1998). For PCA, only the factors with eigenvalues or latent roots greater than 1 are significant; all other factors with eigenvalues or latent roots smaller than 1 are insignificant and should be disregarded. As illustrated in Appendix B, all five items of the construct of brand association are acceptable and load on

one factor having eigenvalues greater than 1 and thus five items should be retained in the construct. On the other hand, the 20 items of the construct of perceived quality load on two factors with eigenvalues greater than 1, and therefore, the "scree test" criterion was examined in order to determine the final number of factors for the construct of perceived quality. The scree test criterion is "used to identify the optimum number of factors that can be extracted before the amount of unique variance begins to dominate the common variance structure" (Hair et al. 2006, p. 120). That is, it is useful for identifying the optimal/ maximum number of components that should be retained. The scree test is a graphical plot which requires examining the eigenvalues against the component number and checking the breaking point at which the curve begins to flatten out (Griffin and Hauser 1993; Hair et al. 1998, 2006; Thompson 2004; Costello and Osborne 2005; Larose 2005). The number of factors to retain is actually the number of data points above the breaking point, excluding the point at which the curve straightens out (Griffin and Hauser 1993; Thompson 2004; Costello and Osborne 2005; Larose 2005). The scree plot of the items of perceived quality as shown in Appendix B, clearly indicated these 20 items should be retained in one component (perceived quality construct). The PCA and scree test results therefore confirmed that the items under the construct of brand association and perceived quality are appropriate.

In short, all five items of the construct of brand association and 20 items of the construct of perceived quality were retained in the questionnaire based on the results of the item reliability and validity tests. The following sections (step 5-7 of Churchill (1979)) will discuss data collection, reliability and validity in the main study. Step 8 ("develop norm") of Churchill (1979) will not be discussed here as it is beyond the scope of the current study.

4.6 Data collection for main study

In order to test the research hypotheses of the current study, it required, in particular, data collection on respondents' attitudes, knowledge and perceptions as well as their behavioural intentions towards Hong Kong continuing education institutions and services. Based on the research objectives of the study presented in Chapter 3.1, the research population was defined as Hong Kong residents aged 18 or above. The specification of the minimum age of 18 years, was based on the assumption that "continuing" education means any formal education undertaken after formal school years, including tertiary education, that being usually at the age 18 or above. In view of this, a sample survey was chosen as the data collection method because surveys can best collect a wide variety of information from a large sample size at a single point of time (Bryman 2008; Aaker et al. 2013). In addition, respondents' attitudes, including the consumers' awareness, perceptions, image and knowledge of a product or service, such as pricing and features, are conventionally collected through surveys. Surveys are also very useful in capturing the respondents' favourability and overall assessment of a subject. A further advantage of the survey method is its versatility as it can be used in any setting or with any groups. It is also suitable for descriptive or causal research designs (Aaker et al. 2013). Survey data can be obtained by any of three methods: personal, telephone interview or by self-administered survey (Bryman 2008; Aaker et al. 2013). A potential disadvantage of the survey method is possible interviewer bias during the interaction with the respondents (Aaker et al. 2013), although this can be minimised with careful management.

For the current study, face-to-face personal interviews were adopted in preference to telephone interviews because, first, knowing that the target population size is over 5.8 million (Census and Statistics Department 2010), it is not feasible for the researcher to obtain an official list of telephone directories for people who are aged 18 or above (the

sampling frame), as governed by the Personal Privacy Ordinance in Hong Kong. Secondly, and more critically, the research needed to collect more in-depth data in order to meet the research objectives as discussed above. In this context, personal interviewing is the most effective way of enlisting respondent participation (Aaker et al. 2013) Thirdly, the questionnaire instrument consisted of a fairly extensive number of questions and longer interviews were expected and thus personal interviews were preferred over telephone interviews (Aaker et al. 2013). Fourthly, because of the detail and complexity of the questions being asked, the interviews lasted from 20 to 30 minutes, and it was felt that the respondents who are interviewed by phone might be feel bored or if in a hurry will tend to terminate the interview prematurely. (Interviews that last for 5 to 10 minutes are best suited for telephone interviews (Aaker et al. 2013)). Therefore, in order to maintain the quality, effectiveness and efficiency in data collection, coupled with the fact that it is not possible to obtain official telephone or mailing lists of the sample frame, face-to-face interviews by mall intercept survey were employed for the current study.

In view of the complexity of the questions and the length of the questionnaire, and in order to ensure the accuracy and to increase both the efficiency and effectiveness of data collection, the primary data in the current study was collected by the researcher solely through face-to-face personal structured interview with the respondents. The structured interview is the most common type of interview in quantitative survey research (Bryman 2008) and the relatively lower response rate associated with telephone or self-administered surveys can be minimised and the misinterpretation of the questions can be avoided. It has been suggested that refusal rates for a short interview on a street can be as low as 3 to 5 percent when compared with 80 percent or higher for a lengthy mail questionnaire or telephone interview (Aaker et al. 2013). It was therefore expected that the personal interviews conducted by the researcher could serve to minimise the reading time and

ambiguity compared with telephone interviews or self-administered survey and that personal interviews might further help to minimise the non-response rate due to refusals or target respondents not being at home.

Moreover, given the fact that there is no empirical research or evidence on testing the causal relationship of the variables of the study in the Hong Kong continuing education industry, coupled with the fact that there is a lack of publically available information of the variables of the target industry, and also recognising that the study required the respondents to answer a substantial number of questions in order to collect sufficient data for analysis and modelling, it was felt that the complexity of the questionnaire might adversely affect the response rate. Therefore, a mall intercept personal interview survey was considered as an appropriate method (Aaker et al. 2013). An inherent risk in the sampling method of mall-intercept survey is that the respondents are shopping centre users who are approached randomly, and therefore there is the risk of bias in selecting the sample, and thus that the results might not be generalisable to the general population (Aaker et al. 2013). Nevertheless, this risk can be minimised by some approaches discussed in the next section covering sampling frame and size.

In short, due to the characteristics of the target population and the complexity of the survey questionnaire, a personal interview survey was employed as data the primary data collection method for the study. The next section discusses the reliability and validity measures of the main study.

4.7   Reliability and validity of the main study

As outlined in Section 4.3, partial least squares (PLS) path modelling was employed as the principal multivariate statistical tool for data analysis in the current study. The PLS

procedure requires that the measurement model should be initially assessed in terms of its reliability and validity before proceeding to the evaluation of the inner model estimates. This section outlines the reliability and validity tests of the measurement model of the main study and the result of the tests will be presented in the Chapter 5, Findings.

As discussed previously, reliability relates to "the extent to which a variable or set of variables is consistent in what it is intended to measure" (Hair et al. 1998, 2006, p.3). The most widely used method for assessing reliability is the Cronbach's alpha coefficient and it should exceed 0.7 in order to be considered as satisfactory (Hair et al. 1998, 2006; Henseler et al. 2009; Vinzi et al. 2010), or it can be accepted as lowest as 0.6 in exploratory research (Hair et al. 1998, 2006; Götz et al. 2010) and 0.8 or 0.9 in more advanced stages of research (Henseler et al. 2009). In addition, two further measures: composite reliability and outer loading measures, are suggested for assessment of the reliability of the measurement model (Henseler et al. 2009; Chin 2010; Götz et al. 2010). The composite reliability scores are generated by the PLS algorithm, and should be interpreted as the same way as Cronbach's alpha; that is, the score should exceed 0.7 and should not be lower than 0.6 (Henseler et al. 2009; Götz et al. 2010; Vinzi et al. 2010; Hair et al. 2011). Moreover, since the correlations between each of indicators and a construct are different, the indicator reliability of each of its manifest variables varies and should be separately assessed by its outer loading. A rule of thumb for indicator reliability is that outer loadings should be at least 0.6 (Chin 1998a), and ideally exceed 0.7 (Chin 1998a; Götz et al. 2010; Hair et al. 2011) or even 0.707 or more (a more stringent requirement as suggested by Henseler et al. 2009; Barroso et al. 2010; Duarte and Raposo 2010).

Reliability differs from validity in that reliability is concerned with the consistency of the measures and validity is related to how well it is measured. Validity refers to "the extent to

which a measure or set of measures correctly represents the concept of the study" (Hair et al. 1998, 2006, p.3). Two types of validity measures should be assessed: Convergent validity and discriminant validity (Henseler et al. 2009; Chin 2010). An additional validity measure – content validity as suggested by Götz et al. (2010) will be discussed after convergent validity and discriminant validity.

Convergent validity concerns "the degree to which two measures of the same concept are correlated" and discriminant validity concerns "the degree to which two conceptually similar concepts are distinct" (Hair et al. 2006, p.137). Fornell and Larcker (1981) suggest using the average variance extracted (AVE) as the measure of convergent validity. AVE should exceed 0.5 as an acceptable and sufficient convergent criterion (Henseler et al. 2009; Chin 2010; Götz et al. 2010; Hair et al. 2011). On the other hand, AVE can be considered as a measure of reliability for the latent variable component because it is more conservative when compared with the composite reliability measure (Fornell and Larcker 1981; Chin 2010). Regarding the convergent validity, Chin (2010) does not impose any minimum score to indicate sufficient convergent validity at the item level. Rather, he suggests by examining the range of all items loading; that the narrower the range and the higher the lowest item loading can indicate sufficient convergent validity.

Discriminant validity can be measured in three ways; firstly, by comparing the square root of the AVE of each latent variable with the correlations of all other latent variables (Henseler et al. 2009, Chin 2010). Secondly, the AVE of each latent variable must be greater than the squared correlation among any other latent variables. The second method is an alternative and equivalent measure to the first method and it depends on the choice of researchers (Chin 2010; Götz et al. 2010; Hair et al. 2011). According to Chin (2010), the second method has two advantages: "It provides a more intuitive interpretation since it

represents the shared variance among constructs and construct to indicators and it is tends to be easier to distinguish the differences (Chin 2010, p.671). Thirdly, the item loading of each manifest variable of its construct must be higher than all other cross-loadings (Henseler et al. 2009; Chin 2010; Hair et al. 2011).

In addition, content validity is another validity measure suggested by Tenenhaus et al. (2005), Götz et al. (2010) and Vinzi et al. (2010) for validity measures of PLS measurement models which refers the extent to which manifest variables belong to the same latent variable. It aims to check for unidimensionality of manifest variables associated with the domain of the construct. Principal component analysis is recommended as the measure for content validity (Tenenhaus et al. 2004; Götz et al. 2010; Vinzi et al. 2010).

To summarise, suggested measures for reliability and validity have been discussed. These previously discussed measures will be employed to evaluate the reliability and validity of the measurement model and these will be presented in the next chapter, Chapter 5. The next section discusses the sampling frame and size of the study.

4.8 Sampling frame and size

As previously discussed, the target population of the study is defined as people who are aged 18 or above and living in Hong Kong and it is estimated at over 5.8 million people in 2009 (Census and Statistics Department 2010). A sampling frame is defined as "a list containing all or a random selection of population members used to obtain a sample" (Aaker et al. 2013, p.357) and therefore, it was not feasible to obtain the sampling frame of the study.

As discussed previously, one limitation of mall-intercept survey is the risk of bias in selecting the sample. The problem can be minimised, however, as suggested by Sudman (1980). For example, instead of using one shopping centre to collect the data, several shopping centres in different districts or suburbs or cities can be an alternative. In view of Sudman's (1980) suggestion, interviews for the study were conducted at urban districts malls, pedestrian bridges and subways in Admiralty, Central, and Tsim Sha Tsui districts – the three major CBDs of Hong Kong, where the current target population can be accessed randomly. Another suggested approach by Sudman (1980) is to use quotas, such as respondents' gender, or employment status, which can minimise the biases to an acceptable level. Thus, the sample was set with 48/52 male/female quotas reflecting the most recent Hong Kong population statistics (Census and Statistics Department, 2007), and respondents within the selected geographical areas, of both genders, were chosen at random.

Respondents were approached in public areas, such as mass transit railway stations, shopping malls, pedestrian bridges or subways in Admiralty, Central, and Tsim Sha Tsui districts – the three major CBDs of Hong Kong – and verbally requested to participate. This study relied on data collected on the busy streets of the CBDs of Hong Kong in order to maximise the response rate and to achieve an accurate representation of the population pursuing CE. Only those who indicated a willingness to participate were interviewed. This was explained in the "Introduction" section of the questionnaire (Appendix A).

In a truly random sample, a minimum random sample size of 384 is required to be 95% confident that the sample result is within ±5% of the "true" population value (Hines and Montgomery 1990; Creative Research Systems 2010). Thus, a minimum sample of 400 respondents was collected, calculated and specified to provide the necessary statistical

power for detecting differences in key demographic groups, such as age, gender and occupation, based on a desired conventional and conservative maximum confidence interval of ±5% at the 95% confidence level. There was no coercion or incentive for the respondents to participate as they were asked politely if they were willing to participate and all responses were anonymously recorded. The data were collected solely by the author as the Research Co-investigator in accordance with the approval conditions of Macquarie University's Research Ethics Committee (Appendix C).

In short, the sampling frame and sample size were discussed in this section. Based on Sudman's (1980) suggestions, personal interview surveys were conducted in three CBDs in Hong Kong in order to collect a minimum of 400 cases with 48/52 male/female quotas to minimise the possible bias of sample selection. The next section will discuss the data analysis.

4.9   Data analysis

As mentioned, a minimum sample size of 400 was determined for the study. A total of 402 respondents, approached at random, were successfully interviewed from 16 June 2010 to 31 October 2010 for the study. After collecting the data, it has to be checked and cleaned in order to identify any incomplete or missing data. Two interviews in which respondents were unable to answer the first question were regarded as incomplete and missing data and discarded from the study (Hair et al. 2006).

Statistical procedures within SPSS 20.0 were used to provide descriptive and correlation data analyses, and principal component analyses to test the content validity of the PLS model of the main study, as presented in Chapter 5 and Appendix E, and to evaluate the item reliability and validity of the constructs of brand association and perceived quality

covered in question C1 to C5 and D2a to D2t respectively in the pilot test, as discussed previously in Section 4.5.4. The data were coded and input into SPSS 20.0 by the author for quantitative analysis and for subsequent use in the brand equity model calculation, which is discussed in Chapter 5.

In addition, another statistical package, SmartPLS version 2.0M3 was used to produce the measurement and structural PLS models of the study (Ringle and Wende 2005). The measurement model should satisfy the respective statistical reliability and validity measures before entering into the next stage of analyses, assessing the quality and validity of the structural model. The results of the structural model provide interpretation of the hypothesised causal relationships among all the variables in the models and enable testing of, and conclusions to, the research questions and hypotheses. The results of the empirical analyses should contribute to the management practice and knowledge in the context of Hong Kong continuing education sector. The details of statistical results of the PLS model of the study including all the reliability and validity measures will be presented in the following chapter.

The data analysis was conducted in three phases which are presented in the following chapter. Firstly, major findings of the descriptive data analysis and the characteristics of Hong Kong CE market are summarised. This phase provided the respondents' views on aspects of the brand equity of continuing education institutions and the descriptive analysis derived from the cross-tabulations of the major variables of brand equity, including brand awareness, brand association, brand loyalty, premium price and purchase intentions of the respondents. Such information is not readily available in published form. These results are discussed in Section 5.2 of Chapter 5. In the second phase of analysis, using the survey results, the researcher applied the data to the proposed brand equity model, adapted from

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Moran (1993, 1994) approach, and as discussed in Chapter 2.9.1, in the calculation of the BE valuation of the major CE institutions, as well as the whole industry. These results are discussed in Section 5.3 of Chapter 5. The third phase of data analysis, using PLS path modelling, examined the causal interrelationships among the four dimensions or components of customer brand equity, and estimated the strengths of the paths between each of the brand equity dimensions to consumers' behavioural intentions and willingness to pay more fee for a CE programme. These findings are discussed in Section 5.5 of the next chapter. This third phase is seen as important if CE institutions seek to understand and manage brand equity and to devise brand building and management strategies.

In addition to the primary survey data, secondary data concerning the Hong Kong CE industry was considered and analysed, including published information and data from the Hong Kong Government Special Administrative Region, the FSTE, local available newspapers and publications as well as the research data regarding CE provided by the Organization of Economic Cooperation and Development (OECD). These data were analysed and discussed in the relevant sections of Chapter 5.

In short, this section outlined three phases of data analyses of the study and the statistical packages employed for descriptive data analyses and PLS path modelling including the reliability and validity measures. The research findings are discussed and presented in detail in the next chapter.

4.10 Ethical considerations

The research design including the questionnaire and the data collection procedure were reviewed and approved by the Ethics Review Committee (ERC) of Macquarie University to ensure that the research conforms to the necessary ethical standards (Appendix C). In

this context, the interviewer was required: to inform the respondents of the objectives of the study and the data collection; to obtain the prior respondents' consent to participate in the research; to exercise the utmost care in protecting the confidentiality of disclosed information, such as the anonymity of respondents, and to make provisions for secure long-term storage of the completed questionnaires.

In order to ensure the compliance of all the requirements of ethical research as stipulated by the ERC, verbal consent and confirmation of the respondent's age were obtained at the beginning of the survey in accordance with Ethics Committee approval and as respondents needed to be 18 or above (see Appendix A, "Introduction" section of the questionnaire). All the collected data will, in future, be retained securely and will be kept strictly confidential and anonymous. The author's student identification card, the contact information of the research supervisor and the ethics review committee (if necessary), were provided to the respondents if requested. A letter of consent form with Macquarie University's Letter head signed by Co-investigator was also provided to the respondents, on request, for reference.

4.11 Chapter summary

This chapter has presented an overview of the methodology employed in the present study. It covered the research design, the justification of the PLS path modelling method, questionnaire design, suggested procedures for developing measures including questionnaire development and refinement procedures; questionnaire pretesting; data collection for the pilot study and purification of measures, data collection for the main study, reliability and validity measures of the main study, sampling frame and size, data analysis and ethical considerations of the research. The next chapter presents the findings of the study.

Chapter 5 Findings

5.1 Introduction

This chapter contains the findings from the research, and is structured into 6 sections including this Introduction. Section 2 outlines the descriptive data analysis, consisting of the survey results. The research objectives aim to measure the customer-based brand equity and financial brand equity of the Hong Kong continuing education industry. In order to satisfy the objectives, findings of the financial brand equity model of the study, adapted from Moran's (1993, 1994) brand equity model will be presented in Section 3, which includes calculations of total industry brand equity, together with estimates of the brand equity of the major industry players. This is followed by a discussion on the preparation of customer-based brand equity PLS model of the study in Section 4. Next, adapted from Aaker (1991) and Keller's (1993, 2003) brand equity models, the research model of the study aims to test the causal interrelationships of the four dimensions of the construct of brand equity and their relationships to customers' behavioural intentions and willingness to pay more for a CE programme are presented in Section 5. In this Section 5, the assessment of the measurement and structural models, the comparison on the findings of quality assessments between the brand equity models A and B´, the results of the hypotheses testing and the tests of mediation effects of the model are presented. Finally, Section 6 contains a summary of the chapter.

5.2 Descriptive data analysis

This section presents a summary of the descriptive analysis of the survey results. As discussed in chapter 3, there is a lack of publically available data and information on the market and financial size of the Hong Kong CE industry; thus, one of the objectives of the

study is to collect this information on the industry. This section outlines a description of the characteristics of the data that aims to provide background information on the Hong Kong Continuing Education industry. All the quantitative data analyses were conducted using SPSS 20.0. The detailed tabulations of descriptive analysis of the survey data, where the data were not relevant to the measurement of the financial or customer brand equity models, are presented in Appendix D.

5.2.1   Respondents' demographic profiles

The survey involved 20–30-minute face-to-face interviews conducted in the streets and public areas in key business districts of Hong Kong between 16 June and 31 October 2010. Of the 633 people approached, 402 agreed to participate, representing a response rate of 63.5%. The final sample number was 400, as two female respondents had no knowledge of CE providers in Hong Kong and so were excluded from further participation. All interviews were conducted by the research co-investigator and contained identical questions. This section discusses the characteristics of the sample.

Gender

The final sample consisted of 194 males and 206 females. This gender distribution was nearly identical with the Hong Kong Government's census figures for 2006 (Census and Statistics Department 2007) and 2011 (Census and Statistics Department 2011a), as shown in Table D-1 in Appendix D.

Age

With the exception of older age groups (55–64 years and over 65 years), the age distribution of respondents (Table D-2) also corresponded with government population data for 2006 (Census and Statistics Department 2007) and 2010 (Census and Statistics

Department 2011a). The probable reason for the lower representation of older people in the survey is that most people aged 60 or above have retired, and so proportionally fewer in these older age groups were actually on the streets in the central business districts when the interviews were being conducted.

Education

For the same reasons, most survey respondents had reached a higher level of education than the overall population profile represented in the Hong Kong census for 2006 (Census and Statistics Department 2007) (Table D-3). One would expect to encounter more professional working people in the central business districts of Hong Kong, and this was one of the major objectives in choosing these areas for data collection.

Occupations

As expected, the proportion of respondents working in professional, management, administrative and clerical occupations was higher than in the general Hong Kong population as shown in the government census for 2006 (Table D-4). Other occupations – such as service workers, elementary occupations, plant and machine operators and craft and related workers – are less concentrated in central business districts and so the survey figures more closely corresponded with the distribution of professional occupations revealed in the 2006 census (Census and Statistics Department 2007).

Allowing for the particular characteristics and distribution of the population in the central business districts of Hong Kong, the respondents' demographic data (especially gender as generally in line with the latest official data published by the Hong Kong Government, the 2006 census (Census and Statistics Department 2007)). It can therefore be argued that the final sample is broadly representative of the characteristics of both the local population in

core business districts and the users or potential customers of CE. Thus while the overall sample profile differs from that of the overall Hong Kong population, the sample is more representative of the target population of CE customers.

5.2.2   Brand awareness of continuing education providers

Interviewees were first asked if they could recall, unaided, any local CE providers. Multiple answers were accepted in this question. The top three local CE institutions nominated were HKU SPACE (355 respondents, 88.8% of the sample), HKCU SCS (115 respondents, 28.8%) and HKPU SPEED (80 respondents, 20%) (Table D-5). These findings also confirmed the questionnaire design, which assumed that respondents would be able to recall one or more of the ten major CE providers. Some of the respondents (39, 9.8% of the sample) not only recalled a number of these ten major players included in the questionnaire, but they could also recall, unaided, some of the 16 other local CE providers. The findings broadly reflected how Hong Kong's CE industry is dominated by the ten major CE institutions (the "Big Ten").

Next, respondents were asked if they recalled the names of other institutions in the "Big Ten". After prompting, 390 respondents (97.5%) could recall, or had heard of, HKU SPACE, and that institution had the highest brand awareness ranking of all the Hong Kong CE providers (Table D-5). VTC/IVE and HKCU SCS were ranked second and third in brand awareness (unaided and prompted), with 83.3% and 76.3% of respondents, respectively, being aware of these two institutions.

5.2.3   Information on purchase and loyalty

Approximately two-thirds of interviewees (272 respondents, 68 %) had undertaken a CE program, with some reporting having had experience with more than one program and/or

institution. These 272 respondents had taken a total of 341 CE programs with one or more of the ten major CE institutions. Almost three-quarters of the respondents (251, 73.6%) had taken just one program; 90 respondents (26.4%) had taken more than one program in any of these institutions, and only seven (2.1%) had undertaken six or more programs in these Big Ten institutions (Table 5-2).

As seen in Table 5-1 and Table 5-2, HKU SPACE was the most popular institution in terms of student enrolment numbers and ongoing relationships with its customers, with VTC/IVE and HKMA ranking second and third, respectively. HKU SPACE and VTC/IVE were also ranked first and second, respectively, for brand awareness, with HKCU SCS ranked third.

Respondents were asked "(with) which CE institution(s) have you ever taken a course and when was the first and the latest year in studying of any CE program?" Among these ten major CE providers, 269 respondents (78.9 %) had been involved with these institutions for three years or less. Thus CE services are characterised by relatively low repurchase rates. Unlike other consumer services, CE is not a frequently purchased, or repurchased, service. Only three of the Big Ten institutions had more than ten years' relationship with their customers, but this involved only nine respondents (Table 5-1).

Table 5-1. Number of respondents who had been attending the Big Ten Hong Kong CE institutions for various periods of time

Institution	Length of candidature							Total no of respondents
	1 year	2 years	3 years	4 years	5 years	6–10 years	>10 years	
HKU SPACE	63	45	26	10	8	15	6	173
HKCU SCS	11	8	2	0	0	0	2	23
HKPU SPEED	5	3	1	0	1	1	0	11
HKBU SCE	7	6	4	2	0	2	0	21
HKCityU SCOPE	9	6	4	1	0	0	0	20
OUHK/LIPACE	15	2	1	1	0	0	0	19
HKUST CL3	1	4	0	0	1	0	0	6
HKLU LIFE	1	0	0	0	0	0	0	1
VTC/IVE	10	7	8	5	3	4	0	37
HKMA	10	1	9	2	2	5	1	30
Total	132	82	55	21	15	27	9	341

Table 5-2. Number of headcounts who had undertaken single or multiple programs at the Big Ten Hong Kong CE institutions

Institution	No of programs							Total no of headcounts
	1	2	3	4	5	6–10	>10	
HKU SPACE	119	35	12	2	1	3	1	173
HKCU SCS	14	5	2	0	1	1	0	23
HKPU SPEED	11	0	0	0	0	0	0	11
HKBU SCE	16	2	2	0	0	1	0	21
HKCityU SCOPE	19	1	0	0	0	0	0	20
OUHK/LIPACE	15	2	1	1	0	0	0	19
HKUST CL3	5	1	0	0	0	0	0	6
HKLU LIFE	1	0	0	0	0	0	0	1
VTC/IVE	28	3	3	2	0	1	0	37
HKMA	23	5	1	1	0	0	0	30
Total	251	54	21	6	2	6	1	341

Of the 272 respondents who had taken any CE program(s) in Hong Kong, 211 respondents (77.6%) had studied at least one program provided by a Big Ten institution but had no purchase experience with other institutions. Another 34 (12.4%) had taken programs in more than one Big Ten institution and another institution, while a further 27 (10%) had taken at least one CE program only in a local institution, rather than one of the Big Ten (Figure 5-1). These 61 respondents (22.4%) had studied their programs in 23 institutions that were not part of the Big Ten group. The most popular of these other institutions was

the Hong Kong Federation of Trade Unions (HKFTU), with 17 respondents (6.2%). Unlike the major CE providers, HKFTU is a provider of mainly short courses, with fees usually around HK$400 (roughly AUD$60) for each program. The 44 respondents (16.2%) who had not studied continuing programs at the Big Ten or at HKFTU had attended just 22 institutions; indeed, 19 of these 44 respondents had studied part-time at four local universities. With the exception of these four local universities, the Big Ten and HKFTU, institutions where respondents had studied provided both award-bearing programs and short courses, mostly in languages, computing, business management, accounting and finance, and health care related. These included, for example, English, Putonghua, Japanese, French languages courses, English grammar and writing skills, general and foundation accounting, introduction to various computer programs, introduction to Chinese medicine, nutrition and health.
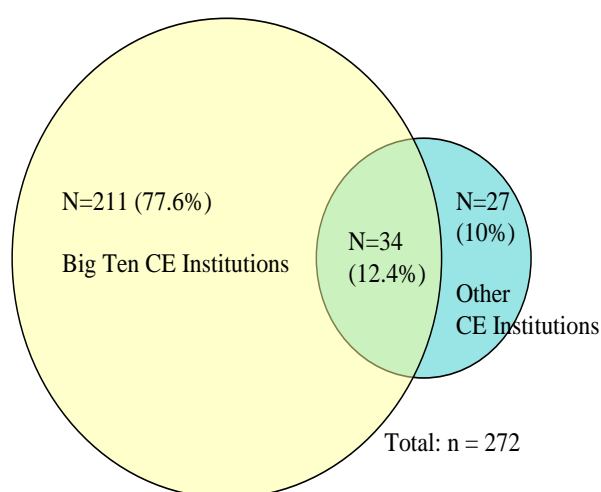
Figure 5-1. Numbers of respondents studying in various Hong Kong CE institutions

In summary, the findings demonstrated a high penetration rate of CE in Hong Kong, dominated by the Big Ten institutions. The majority of respondents (245 respondents, 90.1%) had undertaken programs in these Big Ten institutions, of which 34 (12.5%) had

also experienced other local institutions. Eight institutions in the Big Ten are the extension arms of eight local universities; the two exceptions are HKMA and VTC. This finding suggests that these eight CE providers of eight local universities successfully leverage off the well recognised brand names and the favourable reputations of their "parent" universities, thus contributing to their strong brand equity.

5.2.4   Value of CE consumption in Hong Kong in 2009

Of the 400 respondents, 129 had undertaken their programs in 2009, when the overall participation rate in Hong Kong CE programs was 32.25% of the sample population. According to the latest available data published by Organization of Economic Cooperation and Development (OECD) in 2011, the participation rate in all non-formal education in 2008 for both OECD average[5] and EU21 average[6] was 34% (OECD 2011, p.373). The OECD defines non-formal education as "an organized and sustained educational activity that does not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside educational institutions and cater to individuals of all ages" and it defines formal education as "education provided in the system of schools, colleges, universities and other formal educational institutions, and which normally constitutes a continuous 'ladder' of full-time education for children and young people" (OECD 2011, p.371). OECD's definition of non-formal education applies

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[5] According to the definition listed in the "Education at a Glance 2011" (p.25), published by the OECD: "OECD average is calculated as the unweighted mean of the data values of all OECD countries for which data are available or can be estimated." According to data provided in the "Education at a Glance 2011" (p.373), 28 member countries' data is used in calculating the OECD average on the participation rate in all non-formal education; these 28 countries including Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Korea, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States.

[6] According to the definition listed in "Education at a Glance 2011" (p.26), published by the OECD: "EU21 average is calculated as the unweighted mean of the data values of the 21 OECD countries that are members of the European Union for which data are available or can be estimated. These 21 countries are Austria, Belgium. The Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovenia, the Slovak Republic, Spain, Sweden and the United Kingdom."

to the CE being examined in this research. The participation rate in Hong Kong CE programs in 2009 was only slightly lower than the OECD average and EU21 average participation rates for non-formal education in 2008.

As shown in Table 5-3, 69 respondents had taken programs at HKU SPACE and 11 at HKMA, with program fees ranging from HK$10,000 or below to HK$80,000 or more. Four respondents had studied programs at HKCU SCS, with the program fees varying from HK$10,000 or below to HK$20,000. Only one respondent had taken a program at HKPU SPEED in 2009, with the program fee in the range HK$20,001–$30,000. Ten and six respondents, respectively, had studied at HKBU SCE and HKCityU SCOPE in 2009, with the program fees ranging from HK$10,000 or below to HK$50,000. Four respondents had taken programs at OUHK/OUHK LIPACE in 2009, with the program fee varying from HK$10,000 or below to HK$60,000. On the other hand, one and nine respondents, respectively, had studied at HKUST CL3 and VTC/IVE in 2009; the former respondent had a program fee of HK$40,001–$50,000 while the latter had program fees from HK$10,000 or below to HK$30,000.

Table 5-3. Amount spent on entire CE programs in survey year 2009 (HK$) and total number of respondents who had taken a CE program in 2009

| Name of CE Institution | Amount Spent in 2009 (HK$) | | | | | | | | | Total CE Learners in 2009 |
	10,000 or below	10,001 | 20,000	20,001 | 30,000	30,001 | 40,000	40,001 | 50,000	50,001 | 60,000	60,001 | 70,000	70,001 | 80,000	80,000 or above	
HKU SPACE	11	5	5	3	15	20	3	1	6	69
HKCU SCS	2	2	0	0	0	0	0	0	0	4
HKPU SPEED	0	0	1	0	0	0	0	0	0	1
HKBU SCE	4	5	0	0	1	0	0	0	0	10
HKCityU SCOPE	1	3	0	1	1	0	0	0	0	6
OUHK/ LIPACE	1	2	0	0	0	1	0	0	0	4
HKUST CL3	0	0	0	0	1	0	0	0	0	1
HKLU LIFE	0	0	0	0	0	0	0	0	0	0
VTC/IVE	5	3	1	0	0	0	0	0	0	9
HKMA	3	0	1	0	3	1	0	1	2	11
Others	12	3	0	1	5	2	0	0	5	28
Total	39	23	8	5	26	24	3	2	13	143

HKU SPACE had the most students enrolled in 2009 of all the major CE institutions, and it had the largest range of program fees. Furthermore, the respondents had spent more money on HKU SPACE's programs from the information given by the respondents. This result suggests that providers such as HKU SPACE are able to command premium prices – *prima facie*, an indication of strong brand equity. In fact, HKU SPACE offers one of the widest ranges of CE programs in Hong Kong; this is not surprising, given HKU SPACE's market leadership.

Table D-6 shows the subjects taken by respondents in their CE courses in 2009. The three most popular subjects were Business Management, Languages and Law. Seventy-two respondents (49.7%) had taken the same subjects as they had taken before 2009. This indicates that respondents tend to take programs in the same broad fields reflecting personal or professional interests, rather than reflecting an interest to study more widely.

5.2.5   Brand associations

Respondents who had answered the three questions about brand awareness were then asked five questions about their brand associations towards the Big Ten CE institutions. Respondents were asked whether they thought each institution was excellent, unique, showed superior performance, met their needs, and whether they felt they had grown up with it (Table D-7). Respondents rated these five items on a 7-point Likert scale, where 1 = "strongly disagree" and 7 = "strongly agree". As with brand awareness discussed above in Section 5.2.2, HKU SPACE had the highest ranking in all five questions concerning brand associations, followed by HKCU SCS, HKPU SPEED and HKCityU SCOPE. The second-highest ranked institution for brand awareness, VTC/IVE, was ranked much lower in brand associations. (This finding may reflect the perception that HKU SPACE is rated more

highly due to its connection to its parent university, whereas VTC/IVE cannot claim such a relationship.)

Rather interestingly, the ranking of institutional scores for brand associations closely mirror the market share results discussed previously. (This finding broadly supports Ehrenberg et al.'s (1997a, p.7) argument, that is, the more the number of people who view the brand as "salient", the greater the likelihood the consumers will consider purchasing the brand, the larger the market shares of the brand). This finding, that the market leader also enjoys more favourable brand associations than its competitors, is important in reflecting its strong brand equity, as will be discussed later.

5.2.6 Best CE institution

Respondents were asked their opinion of the best CE institution from their familiarity with a maximum of three institutions. A total of 374 respondents answered this question (Table D-8). Of these, 348 respondents were familiar with either two or three institutions, while 26 were familiar with only one institution and so were excluded from the dataset. HKU SPACE was considered the best CE institution by the majority of respondents (267 respondents, 71.4%), followed by HKPU SPEED (18 respondents, 4.8%), HKCU SCS (13 respondents, 3.5%), OUHK/OUHK LIPACE (11 respondents, 2.9%) and VTC/IVE (eight respondents, 2.1%). Thirty-two respondents (8.6%), including those 26 respondents who had named only one institution, were undecided about the best CE institution. Again, these ratings closely correspond with market share rankings (although this does not demonstrate the causal relationship). This finding again supports Ehrenberg et al.'s (1997a, p.7) findings, that is, the more the number of people who view the brand as "salient", the greater the likelihood that consumers will consider purchasing the brand, the larger the market shares of the brand.

5.2.7 Top three preferred CE institutions

A total of 315 (78.75%) out of 400 respondents indicated that they had their own preferences in continuing education institutions. Of the total of 315 respondents, 52 had only one preferred CE institution while 263 and 201 respondents had two and three preferred CE institutions, respectively. Unlike the results discussed in the previous Section 5.2.6, the "best CE institution" is a CE institution that the respondents perceived as the best out of all the CE institutions available in Hong Kong. Here the respondents provided the top three ranked CE institutions, at most, that they considered as their most preferred institution.

In the first preferred CE provider, 236 (74.9%) respondents said HKU SPACE was their first preference, 15 (4.8%) respondents expressed that HKPU SPEED was their first preference, another 15 (4.8%) respondents replied VTC/IVE was their first preference. HKCU SCS was rated by 14 (4.4%) respondents as their first preference. OUHK/OUHK LIPACE (2.2%), HKBU SCE (1.9%), HKCityU SCOPE (1.6%) and HKMA (1.6%) had 7, 6 and 5 respondents, respectively, who rated them as their first preference. These institutions collectively accounted for 96.2% of respondents' first preferences. These results again demonstrate that the Hong Kong continuing education industry is dominated by the "Big Ten", and particularly HKU SPACE (Table D-9).

HKU SPACE's pre-eminent position as the most preferred CE institution by three-quarters of respondents (236 respondents, 74.9%) in these survey findings (Table D-9) is echoed in the results of the Sing Tao Excellent Service Brand Award competition in which it was voted as the best CE services provider in Hong Kong for five consecutive years from 2007 to 2011 (HKU SPACE 2012b). This competition was initiated in 2006 by the Sing Tao

News Corporation and the best CE services provider was a new category added in 2007. The award for "the best CE services provider in Hong Kong" is one of 25 categories in which the public can vote. In the Sing Tao competition survey, eight institutions – including HKCityU SCOPE, HKCU SCS, HKBU SCE, HKU SPACE, HKUST CL3, HKLU LIFE, OUHK LIPACE and HKPU SPEED – were pre-set in the voting form (HKU SPACE 2008b), and all eight are extension arms of the eight local universities funded by the University Grant Committee of Hong Kong Government Special Administrative Region. In this study, two universities, Hong Kong University and Hong Kong City University, were each nominated as first preference by one respondent. Strictly speaking, these universities are not CE institutions but they have offered part-time programs for people to further their education.

5.2.8   Loyalty and price premium of top three preferred institutions

As mentioned previously in Section 5.2.7, 315 (78.75%) respondents nominated their own preferred CE institution(s). The average mean rating for respondents who considered themselves loyal to their first, second and third preferred CE institutions were 5.8, 5.03 and 4.4, respectively (out of a possible 7). These findings indicate that people tend to be much more loyal to their first preferred than the second and third preferred institutions (Table D-10). Beyond these loyalty scores there is further strong evidence that increased loyalty is accompanied by a willingness among loyal customers to pay a price premium.

Thus, 226 (71.7%), 151 (57.4 %) and 96 (47.8 %) respondents agreed they were willing to pay more for the same or comparable program if they were studying in their first, second and third preferred continuing education institution, respectively (Table D-11). Furthermore, 26 (11.5 %), 15 (9.9 %) and 14 (14.6 %) of respondents could be considered

as price insensitive to the programs offered by their first, second and third preferred institutions, respectively (Table D-12).

Table D-12 illustrates the percentage increase in course fees at respondents' favourite CE institutions that would cause them to switch to other CE providers. Of the 226 respondents, 75 had just only one preferred CE provider, 55 had two preferences and 96 had three preferences.

For those 226 respondents who nominated their first most preferred CE institution, over two-thirds (68.6%) would choose another institution if the program fees at their first most preferred institution increased between 6% and 25%. A further 14.2% of respondents would choose another institution if the program fees increased by 26% or more. Furthermore, 11.5% of respondents indicated they would not change to any other CE institutions, no matter how much the program fee at their first most preferred institution increased. This result confirmed Aaker's (1991), Keller's (1993, 2003) and others' findings that consumers are loyal to, and willing to pay more for, their preferred brand. The more favourable attitude he or she has towards his or her preferred brand, the more he or she is loyal to, and willing to pay more for it.

Of the 151 respondents who nominated second most preferred institutions, over two-thirds (68.2%) of respondents would choose another institution if the program fees at their second most preferred CE institutions increased between 6% and 25%. Only 9.9% of respondents nominating second most preferred institutions would choose other institutions if the program fees at their second most preferred institutions increased by 26% or more. Another 9.9% of respondents indicated they would not choose any other CE institutions,

no matter how much the program fee increased in their second most preferred CE institutions.

Finally, of the 96 respondents who nominated third most preferred institutions, nearly two-thirds (65.6%) would choose another institution if the program fees at their third most preferred CE institutions increased between 6% and 25%, and 9.4% of respondents would choose another institution if the program fees increased by 26% or more. Of these 96 respondents, 14.6% they would not choose any other CE institutions, no matter how much the program fees increased at their third most preferred CE institutions.

These findings indicate that the respondents were likely to pay more and be less price sensitive in dealing with their preferred institutions, particularly the most preferred. This result demonstrates a significant degree of price insensitivity of customers to their most preferred brands, as is the case here in the Hong Kong CE industry.

On the other hand, it was interesting also to find that 224 (71.1 %), 149 (56.6 %) and 98 (48.8 %) respondents considered the program fees of their first, second and third preferred continuing education institutions, respectively, were above and well above average market price (Table D-13). The results seem to reinforce the conclusion that first preference programs are more likely to command a premium price than the second and third supplier (although all preferred institutions enjoy this advantage, at least to some degree).

5.2.9   Intention to purchase a CE program

Not surprisingly, most respondents said they were likely or very likely to enrol in a CE program at one of their preferred institutions: 248 (78.7%) would enrol at their first choice of institution, 150 (57%) at their second choice and 81 (40.3%) at their third choice. In

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addition, respondents would recommend their favourite institutions to others: 282 (89.5%) would recommend their first choice of institution, 189 (71.9%) their second choice and 111 (55.2%) their third choice (Table D-14). These findings confirm earlier studies by Aaker (1991) and Keller (1993), which would suggest that the more favourable the institution, the more likely respondents would both enrol in a future program and recommend the institution to others. When combined with the previously discussed findings regarding price sensitivity (Section 5.2.8), these results point to the measurable revenue and loyalty benefits enjoyed by "preferred" providers in CE.

When asked about their intention to purchase any CE program in the following 12 months, almost half of the respondents (192, 48%) said they would pursue studies at one of the local institutions, and most of these (168 respondents, 87.5%) would pay the program fee themselves. Other means of payment were government support (25 respondents, 13%), employer (23 respondents, 12%), parents (13 respondents, 6.8%) and own business (6 respondents, 3.1%).

5.2.10 Amount respondents would spend on a CE program in following 12 months

Those who intended pursuing a CE program in the following 12 months (192 respondents) were also asked about how much they would expect to spend for the entire programs. Over half (111 respondents, 57.7%) were prepared to spend HK$10,000–HK$49,999, and 26 respondents, 13.5% would spend more than HK$50,000. Almost three-quarters (137 respondents, 71.3%) were prepared to spend HK$10,000 or more in the following 12 months. With a high proportion of prospective students willing to pay in excess of HK$10,000 per year, the total industry annual revenue is clearly substantial (and will be more accurately estimated later). Given that the respondents were likely to fund these

programs from their own resources (and with little support from employers and/or government), it further indicates the value placed on CE by the Hong Kong population. Judging from the amount that the respondents intend to spend, it would be reasonable to assume that most respondents would be more likely to pursue award-bearing programs for development, a factor institutions should consider in tailoring their program design and development to suit the substantial amount that most students are prepared to pay. These results further indicate the "virtuous circle" enjoyed by premium providers such as HKU SPACE in that they enjoy high market share, high loyalty and premium prices, a conclusion which supports Keller's (1993, 2003) and others' conclusions. (This conclusion is also reflective of the existence of, and benefits accruing from, strong brand equity.)

In conclusion, this section has described the findings of descriptive analysis of the survey in order to provide information about the characteristics of Hong Kong CE industry, of which the information is not readily, or publically, available. The next section describes the brand equity valuation model that was developed and the calculation of brand equity of the Hong Kong CE industry.

5.3   The proposed financial brand equity model

As was discussed in Chapter 2, a model was proposed to calculate the brand equity of both the overall Hong Kong CE industry and that of each individual major player in the CE industry, based on the survey data and internal data. The model here can be used by other CE institutions with a limited budget to conduct industry-wide analyses of brand equity or brand health checks for individual institutions.

Earlier sections of this chapter discussed the summarised results of the descriptive data analysis of the survey. The model uses the same survey data for the Hong Kong CE

industry and its major players to calculate brand equity in a way that would be easily understood by accounting professionals. While accountants are primarily interested in "valuing" brands as intangible assets, the emphasis in this section is on estimating the revenue streams of industry and firm brand equity, which can be attributed to an industry and each of its key competitor organisations, rather than presenting a rigorous, accounting-based methodology. While brand equity and brand valuation have clear accounting connotations, this study does not propose that its calculations generate precise values for accounting purposes. Rather they provide estimates of brand equity which demonstrate the historical and projected sales revenue.

5.3.1 Formula for calculating brand equity

It has been previously argued in Chapter 2, that the brand equity of any CE institution in the survey is a product of four items: the market share of the institution, the total industry sales revenue, the average price premium of the program paid by respondents to that particular institution, and average loyalty of respondents to that particular institution. This can be illustrated by the following formula:

$$BE_k = IR*MS_k*PP_k*AR_k \qquad\qquad \text{(formula 1)}$$

where

BE_k = brand equity of institution k

IR = total industry sales revenue

MS_k = market share of the institution k

PP_k = overall average price premium of program paid by respondents to institution k

AR_k = overall average number of years of respondents' relationship to the institution k

After calculation of the brand equity of each institution, the total amount represents the current overall brand equity value, and reflects the average number of years of customer relationships with the CE institution. This total amount has to be converted to a "Discounted Present Value" formula to reflect the present value of the brand equity value at the current year. Since different CE institutions will potentially have different overall average number of years of respondents' relationships, the brand equity amount calculated from formula 1 has to be discounted to a present value with an appropriate compounding interest rate[7] (Sizer, 1989). With the adaption of the characteristics of CE industry to the model, the number of years, n, will be replaced by the overall average number of years of customers' relationship to the institution k, AR_k. The model formula will become the following:

$$BE_k(PV) = BE_k / (1+i)^{AR_k} \qquad \text{(formula 2)}$$

where

BE_k = brand equity of institution k

i = rate of interest

AR_k = overall average number of years of customers' relationship to the institution k

This formula can thus be used to calculate the brand equity of any institution by using the relative market share of that institution, the average premium price of its programs compared with the industry average, and the average length of the respondents' relationship with that particular institution, discounted to present value. The BE calculation for all institutions can be derived from the same survey data, provided the sample size is large enough for the analysis.

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[7] According to the formula listed in Sizer, J.,(1989, p.235), the formula for calculating the discounting compound interest rate to present value is "$1/(1+i)^n$; where i is the rate of interest and n is the number of years."

5.3.2 Industry size, average program price and length of relationship with Hong Kong CE industry

In the study, all 400 respondents were asked about CE programs they had undertaken at any time and in 2009, the number of years spent on CE programs at local institutions, and the amount they had spent on CE in 2009 and the duration of their 2009 programs (which typically extend beyond one year).

As described above, 272 respondents had taken CE programs at some stage. Some respondents had taken more than one course in more than one institution. As a result, this contributed to 413 frequencies of respondents who had taken courses in various local continuing education institutions. As a whole, the respondents had taken 655 programs in the local CE institutions. Respondents had undertaken an average of 1.59 CE programs at some time. In 2009, 129 respondents had taken a CE program, representing a participation rate in CE of 32.25% for that year (Table 5-4).

The Hong Kong University School of Professional and Continuing Education (HKU SPACE) recently commissioned an independent market research agency, Consumer Search, to investigate continuing education in Hong Kong in 2009–2010. The university used an independent market research company to ensure the professional quality and accuracy of the data and the objectivity of the study (HKU SPACE 2010). This report was the first major study to be published about the Hong Kong CE sector. Most of its findings are similar to, or consistent with, the results of the current survey that was conducted as part of this research.

The Consumer Search survey involved telephone interviews with 1,500 respondents in December 2009 and January 2010 (HKU SPACE 2010). That study targeted citizens aged from 18 to 64 years. In contrast, this study included senior citizens aged 65 or over, for three reasons. First, 12.7% of the Hong Kong population in 2009 was aged 65 or over (Census and Statistics Department 2011a). Second, this age group includes early "baby boomers", who are expected to be better off in terms of health, financial circumstances and education levels than most similarly aged people a decade ago. It is reasonable to expect this age group would be prospective customers for the "Third Aged Programs" which represent a significant component of CE programs. Finally, including people aged 65 or above would provide a more comprehensive scope for this study.

The Consumer Search report noted that the participation rate in CE in 2009 was 27.8% and the overall average annual cost of CE in 2009 was HK$10,385 (HKU SPACE 2010). The total Hong Kong population of that age range, 18–64, in 2009 was 4,975,620, whereas the total population aged 18 and over was 5,869,120 (Census and Statistics Department 2011a). In the present study it was found that the participation rate in CE in 2009 was 32.25% and the overall average annual cost of CE programs in 2009 was HK$11,509. Thus the results of the Consumer Search survey provide support and a measure of external validity for the results of the current survey.

Table 5-4. CE participation, estimated volume of sales and market size of Hong Kong CE sector in 2009

Items	2009	2009: Consumer Search – HKU SPACE survey (age 18–64 only)	2009: Consumer Search – HKU SPACE survey (projected for age 18 or above)
HK Population: Age 18 or above	5,869,120 [a]	5,000,000	5,869,120 [a]
Participation rate in CE	32.25% [b]	27.80% [c]	27.8%
Projected number of adult learners	1,631,615 [d]	1,390,000	1,631,615 [d]
Average number of CE program taken by respondents	1.1 [e]	NA	NA
Average $ spent in CE program	$11,509 [f]	$10,385	$10,385
Overall average number of years of customer relationship with HK CE institutions	2.95 years [g]	NA	NA
Overall volume of sales of the industry (IV) [k]	$18.78 billion [h]	$14.44 billion [i]	$16.94 billion [j]

Notes:

a. Derived from "Hong Kong Population Projection 2010-2039", (Census and Statistics Department 2010, p.8).

b. Derived from this study: 129 respondents (out of the total 400 respondents) had taken CE program in Hong Kong.

c. Derived from "Survey on the demand for continuing education in Hong Kong 2009/10" (HKU SPACE 2010, p.6).

d. HK Population with the Age 18 or above as derived from "a" above multiplied by the participation rate adopted from the HKU SPACE survey, that is 27.80% (Using HKU SPACE data on the participation rate here is recommended because its survey was using random sampling method, and the study here was using convenient quota sample at the CBDs, it may be less objective when compared with the data collected from HKU SPACE survey) (HKU SPACE 2010, p.6).

e. the study, 129 respondents had taken 143 CE programs in 2009.

f. Total amount spent per entire CE program studying in 2009 ($4,855,000) / Total CE learners in 2009 according to the respondents' answers (143 headcounts) = Overall average amount spent per entire CE program studying in 2009 ($33,951). Mid-point of each price range preset in the answer is used to calculate the overall average amount spent in a CE program in 2009. Using "Overall average amount spent per entire CE program studying in 2009" ($33,951) / Average years of customer relationship of the CE industry (2.95 years) = Average amount spent in CE program in 2009 ($11,509).

g. 272 respondents (out of the total 400 respondents) had studied 413 frequencies in various CE institutions (some respondents had taken more than 1 CE programs in more than 1 institutions) and altogether these 413 headcounts had taken 655 CE programs ever in various Hong Kong CE institutions with a total of 1218 years of relationship with the institutions.

h. "Projected number of adult learners in 2009" (1,631,615 learners) multiplied by "Average amount spent in CE program in 2009" ($11,509). Here the average amount spent in CE program in 2009 will be using the data collected by the study as it was only a small difference (9.7%) with the findings with HKU SPACE survey. The sample collected in CBDs will be expected to be more representative to the white collars and professionals. The CE program fees for these segments will be expected to be a bit higher.

i. "Projected number of adult learners in 2009" (1,390,000 learners) multiplied by "Average amount spent in CE program in 2009" ($10,385).

j. "Projected number of adult learners in 2009" (1,631,615 learners) multiplied by "Average amount spent in CE program in 2009" ($10,385).

k. where IV = volume of sales of the industry.

The key differences between the Consumer Search study and the results of the present study, as revealed in Table 5-4 are as follows:

- Consumer Search surveyed only those in the population aged 18-64; whereas the current study included all the population aged 18 and above. Thus, the total population estimates of the Consumer Search study are lower. (The population of 65 and over was included in the current study as the "seniors" segment is a significant market segment and one which is growing with the aging population. The annual Hong Kong population growth increased slightly at a rate of 0.5%, 0.8% and 0.9% for the years 2009, 2010 and 2011, respectively, whereas the population segment of aged 65 and over (defined as senior citizens in Hong Kong by the Hong Kong SAR Government) noticeably increased at an annual rate of 2.2% (19,500 people), 2.3% (20,900 people) and 3.5% (32,900 people) in these three consecutive years. The population aged 65 and over accounted for 13% of Hong Kong's total population in 2009 (6.996 million) and 2010 (7.052 million) and 13.6% of the population for 2011(7.112 million) (Census and Statistics Department 2012b). (This growth in the aged population may represent a significant market opportunity for CE providers in the future and was thus included in the current study.)

- According to the latest statistics "Hong Kong population projection 2012-2041" released by the Hong Kong Government SAR in August 2012, it is projected that Hong Kong population will increase at an average annual rate of 0.6% from 7.07 million in mid-2011 to 8.47 million in mid-2041. Life expectancy is also expected to increase from 80.5 years for males and 86.7 years for females in 2011 to 84.4 years for males and 90.8 years for females in 2041. The proportion of senior citizen to the total Hong Kong population will rise significantly from 13% in 2011 to 30% in 2041 (Census and Statistics Department 2012a). The figures clearly indicate that

the segment of senior citizens has been increasing, and will increase markedly in the future. In addition, Hong Kong people also have very low mortality rates and longer life expectancy when compared with other economies (Census and Statistics Department 2012a). In view of the above, it is therefore reasonable and important to consider the senior citizens segment in the current research.

- Market penetration of CE programs was estimated by Consumer Search at 27.8% compared with 32.25% in the current study. Since the Consumer Search survey was based on a random sample (as compared with the convenience/quota sample of the current study), the Consumer Search result is likely to be more accurate. In particular, the current study was based on data collected in the Hong Kong CBDs and, as a consequence, is likely to overstate the market penetration of CE programs in the overall Hong Kong population.

- The average annual expenditure per a CE program recorded in the Consumer Search survey was HK\$10,385, compared with HK\$11,509 in the current survey. This difference may be partly attributable to inflation, but also to the location of the current study, as previously discussed.

In the survey conducted as part of this study, the average number of programs taken by the respondents in 2009 was 1.1 programs, and the overall average time spent at a Hong Kong CE institution was 2.95 years. However, the Consumer Search report did not include the average number of CE programs taken by the respondents, nor the overall average time spent studying at local institutions, and so the two studies cannot be directly compared in this regard.

From the above figures, the total program revenue of the CE industry in 2009 was estimated, by using the data from the current study and the data from the Consumer Search

report, to be HK$18.78 billion and HK$16.94 billion, respectively. Again, the difference of approximately 10% can be attributed largely to the data collection of the current study being concentrated in the CBD areas and the consequent bias towards the upper socio-economic population. Notwithstanding, the broad correspondence of the comparable measures of the two surveys provides some confidence in the results of the current study. However, notwithstanding these comparable results, the author believes that the total volume of sales of CE in 2009 projected by the survey and the data from the Consumer Search report, to be HK$18.78 billion and HK$16.94 billion, respectively, were overstated, largely based on the author's first-hand industry knowledge. It is suggested that this problem can be resolved by using real financial data of the industry. This process is explained in the following paragraphs.

In order to resolve the above problem of overstating the projected total sales revenue of the CE industry in 2009 by the two sample surveys, real financial data of HKU SPACE's annual volume of sales were used in the study to project the overall volume of sales of CE industry in 2009. In the Annual Report 2010/2011 published internally by HKU SPACE, it is stated that the average annual student enrolment number was 100,000 for the period 2006–2011 and the revenue for the financial year 2010/11 was HK$918 million, which was a comparable annual revenue performance with the previous year 2009/10 (HKU SPACE 2012a).

Having known that the estimated market share of HKU SPACE in 2009 from the survey was 42.4%, and by using the data of: (1) the average annual student enrolment number of HKU SPACE from 2006 to 2011 (that is, 100,000) and (2) annual revenue of HKU SPACE 2010/11 (HK$918 million), the projected overall volume of sales of the CE

industry in 2009 derived from these two approaches was HK$2.71 billion[8] and HK$2.17 billion[9], respectively. Although the two projected overall volume of sales of CE industry in 2009 derived from these two approaches were found similar, the second approach, that is, real financial data of the annual revenue of HKU SPACE 2010/11, is used in Section 5.3.3 for the calculation of brand equity of each of the major players of CE industry and the projected brand equity of the overall CE industry. In fact, this approach (i.e., the use of the firm's actual sales revenue) will be commonly available to any SME in calculating its brand equity. The first approach (i.e., based on survey projections) is not recommended for use in the following analysis because of the possibility of overstating the projected total revenue amount of the CE industry 2009. Possible explanations for overstating the total projected revenue of CE industry include:

- That the data collection of the study was concentrated in the CBDs and therefore there is a consequent bias towards the upper socio-economic population. Thus, it is reasonable to expect that the respondents would undertake the more expensive and professional CE programs due to the characteristics of the people working in the CBDs;

- Similarly, the CBD location is likely to overstate the overall penetration rate of CE in the total population; and

- The mid-value amount was used for calculation of each sub-categories of program fee, whereas actual fees paid are likely to be positively skewed.

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[8] The projected overall volume of sales of CE industry in 2009 (projected by HKU SPACE's average annual student enrolment number): HKU SPACE's average annual student enrolment number in 2009 times overall respondents' average amount of CE program fee in 2009 divided by HKU SPACE's market share in 2009; that is, (100,000*$11,509)/42.4%.

[9] The projected overall volume of sales of CE industry in 2009 (projected by HKU SPACE's annual revenue 2010/11): HKU SPACE's annual revenue 2010/11 (known that it was a comparable revenue with 2009/10) divided by HKU SPACE's market share in 2009; that is, HK$918 million/42.4%.

The HKU SPACE data (both student enrolment numbers 2009 and annual revenue 2010/11 provided by the HKU SPACE's Annual Report 2010/11) were therefore used to project the overall volume of sales of the CE industry in 2009 because they provide the most conservative estimates and because of the possibility that the estimates of both other sample surveys (including the present survey) were overstated.

From the above figures, the volume of the CE industry in 2009 was estimated, by using the real financial data published confidentially and internally by HKU SPACE, to be HK$2.17 billion. The figures for the overall average amount spent in CE and the estimated overall volume of sales of the industry were therefore used as input to the model, as described later in this section.

5.3.3 Calculation of the brand equity of the major players of the Hong Kong CE industry

As discussed above in Section 5.3.2, the projected overall annual sales revenue of the CE industry in 2009 was estimated (conservatively) at HK$2.17 billion, together with the data derived from the study including CE market volume, market share, average number of years of customer relationship and premium price of average program fee of each of the Big Ten, were substituted into the formulae 1 and 2 as mentioned in Section 5.3.1. The "discount rate" used in calculating present value is usually based on the bank interest rate (Sizer 1989), reflecting the cost of funds. Historically, the Hong Kong bank interest rate has been at historically very low levels in recent years, following the global trend in developed countries. Beyond the cost of funds, the discount rate also often reflects the inflation rate. Thus for a more conservative and realistic discount rate, the Hong Kong's average inflation rate with rounding up, will be used in current calculations. The reasons why 5% is suggested to be used in the brand equity model calculations here are:

1. As reported in the Hong Kong Government Budget 2012/13, the Hong Kong inflation rate has risen gradually since 2010 and the average underlying inflation rate for the year of 2011 was 5.3% and the Hong Kong government has estimated it would drop to 4% in 2012. The average underlying inflation rate for the year 2011 and 2012 was expected to be 4.65% (with rounding up to 5%) (Hong Kong Government Special Administrative Region 2012).

2. Hong Kong's average inflation rate from 1981 until 2012 was 4.62% and it was reported at 4.7% in April 2012 (Trading Economics 2012).

Table 5-5 presents the results of the calculation of brand equity, using the formula shown in Section 5.3.1, for the big Ten Hong Kong CE institutions. The total size of "industry equity" the Hong Kong CE market in 2009 was therefore estimated at HK$5.22 billion after discounting to the present value from the amount of HK$6.04 billion. This calculation in essence reflects the present value of total industry revenue over the average duration of years. When compared with the Government statistics, this estimated total value of "CE industry equity" (HK$5.22 billion) was accounted for 31.8% of the total value added of education services for the year 2009[10].

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[10] The value added of education services, including the CE sector, was HK$16.4 billion, HK$17.5 billion, and HK$20 billion in 2009, 2010, and 2011 respectively with an annual growth rates of 6.7%, 14.3% and 13.9% respectively (Census and Statistics Department 2011b, 2013). Value added is a term usually used in national accounting. It measures "the net output of an economic activity, that is, the value of goods and services produced less the value of goods and services (e.g. purchase of materials and supplies, rental, business services charge) used in production. Sum of value added of all economic activities in an economy equals to its Gross Domestic Product." (Census and Statistics Department 2013, p.2).

Table 5-5. Illustration of the brand equity model of Hong Kong CE institutions

CE Institution	Average no. of programs	Market share (MS)	Av. no. of years (AR)	Average cost per entire program	Av. amount per CE program in 2009	Premium $ (base amount $11,509) (PP)	Brand equity (HK$ billion) Formula 1	Brand equity (Present Value) (HK$ billion) Formula 2	Brand equity ranking
HKU SPACE	1.61	0.424	2.91	42,246	14,518	1.26	3.37	2.92	1
HKCU SCS	1.78	0.063	2.65	10,000	3,774	0.33	0.12	0.10	7
HKPU SPEED	1.00	0.017	2.45	25,000	10,204	0.89	0.08	0.07	9
HKBU SCE	1.62	0.052	2.67	14,000	5,250	0.46	0.14	0.12	5
HKCityU SCOPE	1.05	0.032	1.85	21,667	11,712	1.02	0.13	0.12	6
OUHK/LIPACE	1.37	0.040	4.11	22,500	5,474	0.48	0.17	0.14	4
HKUST CL3	1.17	0.011	2.33	45,000	19,313	1.68	0.09	0.08	8
HKLU LIFE	1.00	0.002	1.00	NA	0	NA	NA	NA	NA
VTC/IVE	1.54	0.087	3.03	10,556	3,484	0.30	0.17	0.15	3
HKMA	1.33	0.061	3.53	43,182	12,233	1.06	0.49	0.42	2
Others	1.93	0.212	3.10	32,143	10,369	0.90	1.28	1.10	NA
Overall average/Total	1.59	1.000	2.95	33,951	11,509	-	6.04	5.22	-

Notes:

a. Derived from the above Section 4.4.2: Overall volume of sales of CE industry (IV) in 2009 was HK$2.17 billion.

b. $BE_k = IR*MS_k*PP_k*AR_k$ (formula 1)

where:

BE_k = brand equity of institution k
IR   = total industry sales revenue
MS_k = market share of the institution k
PP_k = overall average price premium of program paid by respondents to institution k
AR_k = overall average number of years of respondents' relationship to the institution k

c. $BE_k(PV) = BE_k/(1+i)^{AR_k}$ (formula 2)

where:

BE_k = brand equity of institution k
i = rate of interest
AR_k = overall average number of years of respondents' relationship to the institution k

d. The mid-value amount was used for calculation of each sub-categories of program fee.
e. Since no respondent replied he/she had taken any program in HKLU LIFE in 2009, average program price, premium price and the projected brand equity of HKLU LIFE could not be provided.
f. According to the survey result, HKLU LIFE had only 0.2% of the market share of the Hong Kong CE industry. It was believed it would not significantly affect the ranking of the top five players.
g. "Others" includes other CE institutions that respondents mentioned but were not the ten major CE providers in the table. It also includes local universities that provided any CE programs.

Table 5-5 shows that HKU SPACE had the greatest brand equity, as calculated in the model. Its brand equity in 2009 was HK$3.37 billion, driven primarily by its dominant market share of 42%, and its average price premium of 1.26 times the industry average after discounting for present value, calculated from the data collected in 2010 and the average amount respondents had spent on CE in 2009. Second-ranked was Hong Kong Management Association (HKMA; HK$0.49 billion after discounting) and third-ranked

was Vocational Training Council (VTC/IVE; HK$0.17 billion after discounting). These figures also show that, beyond HKU SPACE's dominant market position, none of its competitors approach its dominant market share, price premium or brand equity. This result was further supported by secondary information that HKU SPACE is the market leader of Hong Kong CE industry. For example, HKU SPACE was awarded, the "Sing Tao Excellent Services Brand Award − Best Continuing Education Services Provider" for the seventh consecutive year since 2006 (HKU SPACE 2014a); and received a "Gold Award" and a "Platinum Award" at the "Reader's Digest Trusted Brand Awards" in 2013 and 2014 respectively. The Reader's Digest Trusted Brands Survey has been well established for 15 years and is recognised as a premier consumer-based and international measure of brand preference (HKU SPACE 2014b).

This section has presented the calculations of the values of brand equity of the major CE institutions and the overall Hong Kong CE industry. The next section discusses the preparation of the customer-based brand equity PLS model of the study.

5.4   Preparation of customer-based brand equity PLS model

5.4.1   Introduction and restatement of research objectives

The financial brand equity model of Hong Kong CE industry has been discussed in the above Section 5.3, and the brand valuations for the major CE institutions ("Big Ten") and the whole CE industry were estimated. This section revisits the research objectives and details the preparation and development of the customer-based brand equity PLS model.

As previously discussed, both Aaker (1991) and Keller (1993; 2003) argue for the strategic importance of building strong brands which are associated with positive consumer-based brand equity. Further, many marketing scholars and practitioners support the importance of

brand equity as a source of sustainable competitive advantage (Farquhar 1989; Aaker 1991; de Chernatony 1991; Keller 1993; Lassar et al. 1995; Cooper 1998; del Río et al. 2001; Keller 2001; de Chernatony and McDonald 2003; Campbell 2002; Temporal 2002; Ambler 2003; Hoeffler and Keller 2003; Pappu et al. 2005; Kapferer 2008; Christodoulides and de Chernatony 2010). In contrast, however, as discussed in Chapter 2, Ehrenberg and his followers hold contrary views on these propositions. They argue that there is no compelling evidence that there are strong or weak brands from the consumer attitudes and behaviour point of view; nor evidence that a brand with high consumer-based brand equity will eventually or automatically become a big brand. Rather, they argue there are only "big" and "small" brands (from the consumer behavior point of view). In addition, as shown in the "Double Jeopardy" (DJ) pattern, they found that the attitudinal behaviour "intention-to-purchase" is not related to brand loyalty (a dimension of brand equity) (Castleberry and Ehrenberg 1990; Ehrenberg et al. 1990; Ehrenberg 1997a, 1997b; Ehrenberg et al. 1997a; Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004). Reconciling these competing views is largely outside the scope of the current study; however, it could be argued that the "Ehrenberg school" is not denying the importance of strong brands. Instead, they are essentially disputing the attitudinal links to strong brands. Thus, this study may shed some light on this distinction by examining and estimating the "causal" links between brand attitudes and subsequent purchase behaviour and whether or not such causal links are statistically significant.

In view of the above two major streams of argument in brand equity, the following section discusses the PLS modelling based on the results for HKU SPACE, the market leader of the CE industry, as supported by the findings and the secondary information in Section 5.3.3, (the strongest brand in Aaker (1991) and Keller's (1993, 2003) views; or the biggest brand in in Ehrenberg and his followers' views (Castleberry and Ehrenberg 1990;

Ehrenberg et al. 1990; Ehrenberg 1997a, 1997b; Ehrenberg et al. 1997a; Ehrenberg and Goodhardt 2000; Ehrenberg et al. 2004). The PLS model was developed to test and understand the causal interrelationships between the four underlying dimensions of the customer-based brand equity construct and to estimate the strength of relationships between the dimensions of brand equity and the effects consumers' behavioural intentions and their willingness to pay premium prices for a program. In addition, the PLS analysis will examine possible mediation effects among all the latent variables in the model, thus testing the hypotheses of the study. As discussed in Sections 4.2 and 4.3 in chapter 4, and considering the previously stated research objectives, PLS was chosen as an appropriate statistical method for data analysis of the current study. The next section revisits the data requirements for the PLS consumer-based brand equity model of the study.

5.4.2   Data requirements for PLS

The following section revisits the data requirements for the consumer-based brand equity model when using PLS for data analysis. Given the purposes of the study are to test the causal interrelationships among four dimensions of brand equity of the CE institution, and to estimate the strength of the relationships between the four dimensions of brand equity to customers' behavioural intentions in the service context of CE. The analysis is thus primarily aimed at theory confirmation; rather than theory exploration. In this sense, PLS rather than CBSEM is better suited for the purposes.

Furthermore, the usable sample size of the market leader brand (HKU SPACE) was 69 which exceeds the minimum requirement of PLS (but does not satisfy the minimum sample size requirement of CBSEM (Reinartz et al. 2009)). In this study, PLS followed a rule of thumb suggested by Barclay et al. (1995), that the minimum sample size should be "ten times the largest number of structural paths directed at a particular construct in the

inner path model." (Barclay et al. (1995), cited by Henseler et al. 2009, p. 292). That is, the largest number of structural paths directed at a particular construct of the current inner path model is 4; the minimum sample sizes required for the current PLS research model is thus 40.

Moreover, the data requirements for PLS do not require parametric distribution, and all items are not required to be measured by interval scales (Chin 1998b, 2010; Haenlein and Kaplan 2004; Henseler et al. 2009; Reinartz et al. 2009; Fornell and Bookstein 1982, cited in Barroso et al. 2010; Hair et al. 2011). There were no missing data for these 69 cases of collected data, and these 69 cases were used for data analysis of the customer-based brand equity model. Thus, PLS is better suited than CBSEM and is thus the most appropriate SEM technique. The next section presents the preparation for PLS model evaluation of the study.

5.4.3   Preparation and settings for PLS model validation

This section describes the preparation for using PLS path modelling of the customer-based brand equity model of the study. As discussed, PLS was selected as the most appropriate data analysis technique for the study. The software package SmartPLS version 2.0M3 was used to design and perform PLS analysis, as well as running the necessary bootstrapping and blindfolding procedures (Ringle and Wende 2005). Additional statistical analysis, such as principal component analysis was conducted using SPSS version 20.0 (The relevant output generated from the software of SmartPLS and SPSS for data analysis were shown in Appendix E). Following Vinzi et al.'s (2010) recommendation, all data were standardised (with zero mean and variance equal one option). Further, there are three schemes available in SmartPLS software for estimation of the inner weights; namely, the "centroid", "factorial" and "path weighting" schemes (Tenenhaus et al. 2005; Henseler et al. 2009;

Vinzi et al. 2010), although the results produced by the three schemes do not differ significantly (Tenenhaus et al. 2005). The path weighting scheme was selected for use in the current study as this is the only one which considers the direction of relationships in the path model (Henseler et al. 2009; Vinzi et al. 2010). It works best in testing causal models such as is the current study. As mentioned in previous Chapter 4.4.1, all the hypothesised relationships of the study are positive, and thus one-tailed test of significance should be employed (Hair et al.1998).

Regarding the number of bootstrapping resamples requirement, it was noted that Tenenhaus et al. (2005) have specified the default for the number of resamples in PLS software packages is usually 100 and up to 200 to produce reasonable standard error estimates. Nevertheless, the current study followed a more conservative recommendation by Mooney and Duval (1993), Henseler et al. (2009), Henseler and Chin (2010) and Temme et al. (2010), and 500 resamples were applied in the bootstrapping procedure to estimate the t-values of each outer loading in order to validate if all the outer loadings were statistically significant. The bootstrapping procedure in SmartPLS provides three options to manipulate the signs of latent variables (no sign changes, construct level changes, and individual changes). The default option of "no sign changes" was used in this study based on the comment from Temme et al. (2010) that the other two arbitrary sign changes options actually do not guarantee sign changes would be properly managed, and if not properly controlled, can have severe impacts on bootstrap results.

Hair et al. (1998) and Henseler et al. (2009) recommend using a two-step approach for SEM analysis; first, assessment of measurement (outer) model, and second, assessment of the structural (inner) model. The measurement model defines the theoretical constructs or latent variables of the model with indicators or manifest variables. It aims to examine if the

latent variables are properly measured and related by manifest variables by checking its reliability and validity measures. On the other hand, the structural model is validated by various measures to reflect and confirm the quality and significance of the hypothesised causal relationships between the latent variables in the model (Barroso et al. 2010). In PLS, both measurement and structural models are processed by the software package, such as SmartPLS used in the current study. Assessment of the models should start with testing of the reliability and validity measurements of outer model before evaluating the inner model. Thus, the assessment of the inner path model estimates will make sense only if adequate reliability and validity scores are indicated in the outer model (Henseler et al. 2009).

Similar to Hair et al. (1998) and Henseler et al. (2009), Chin (2010) supports using the same two steps process for reporting PLS analysis and results. In addition to Hair et al. (1998) and Chin (2010), in following the PLS path modelling structure, Vinzi et al. (2010) proposes that three parts of the PLS model, the measurement model, the structural model and the overall model, should be validated. These three parts of the PLS model will be validated by three different fit indices in the study; namely, the communality index, redundancy index and Goodness of Fit (GOF) index. Following Chin's (2010) recommendation for PLS report writing, the following sections present results of PLS path modelling into two stages; first, the results of measurement model assessment (Section 5.5.2), followed by the results of structural model assessment (Section 5.5.3), including the result of GOF measures (Section 5.5.4). The next section describes two models in the study used for measuring customer-based brand equity of Hong Kong CE industry.

5.5   Customer brand equity research models

This section presents customer brand equity models of the study which consists of two models for analysis; namely Model A and Model B. As discussed in Chapter 4.4, and

adapted from Aaker's (1991) and Keller's (2003) conceptualised brand equity models, suggested measures (manifest variables) for the four dimensions or components of the brand equity construct have been discussed and developed in Chapter 4.4.1. However, it is noted that both Aaker (1991) and Keller (2003) have suggested measures for the perceived quality construct. Aaker (1991) acknowledges that it is necessary to measure the overall rating of the perceived quality of a brand (though it is in a general sense). Thus in this study, two models; model A and B, are evaluated and analysed for understanding the statistical difference between a single item (in response to one of Aaker's (1991) suggestion for measuring perceived quality) and multi-items manifest variables in measuring the latent variable "perceived quality" of the model.

In the first model (model A, Figure 5-2), the latent variable "perceived quality" is measured by one single manifest variable, the "overall score" rated by the respondents; while in the second model (model B, Figure 5-3), the latent variable "perceived quality" is measured by twenty manifest variables in order to capture different dimensions of perceived quality from respondents.
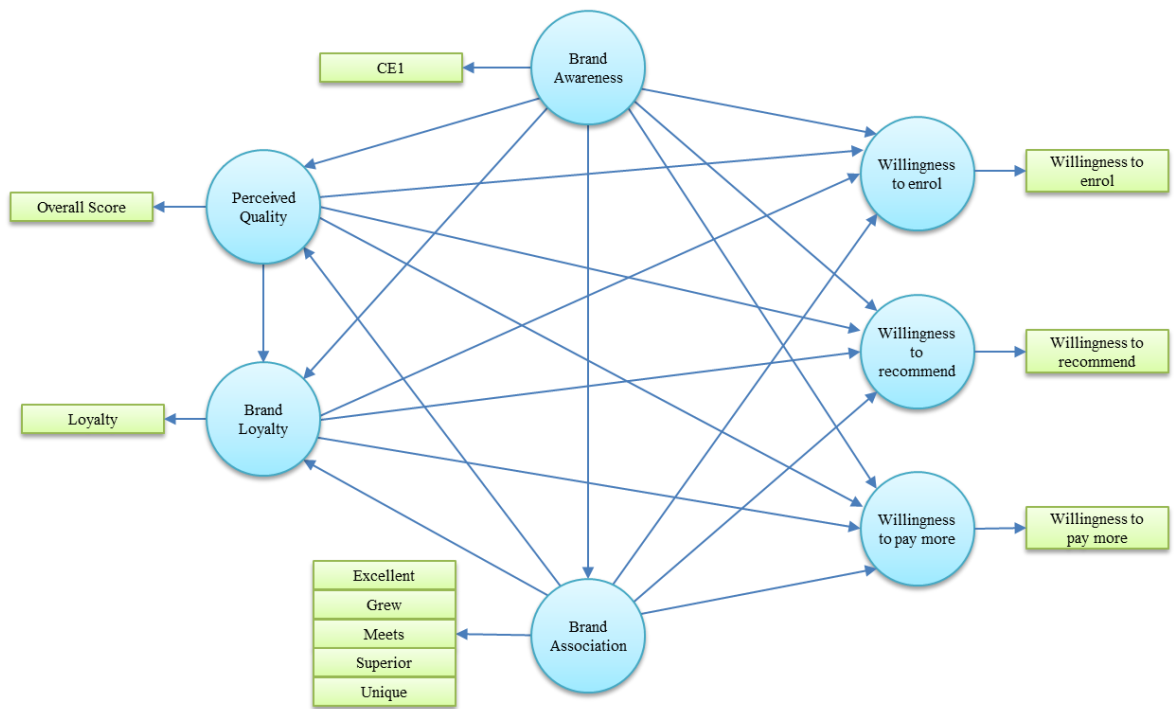
Figure 5-2. Model A: Latent variable "Perceived Quality" is measured by one single manifest variable
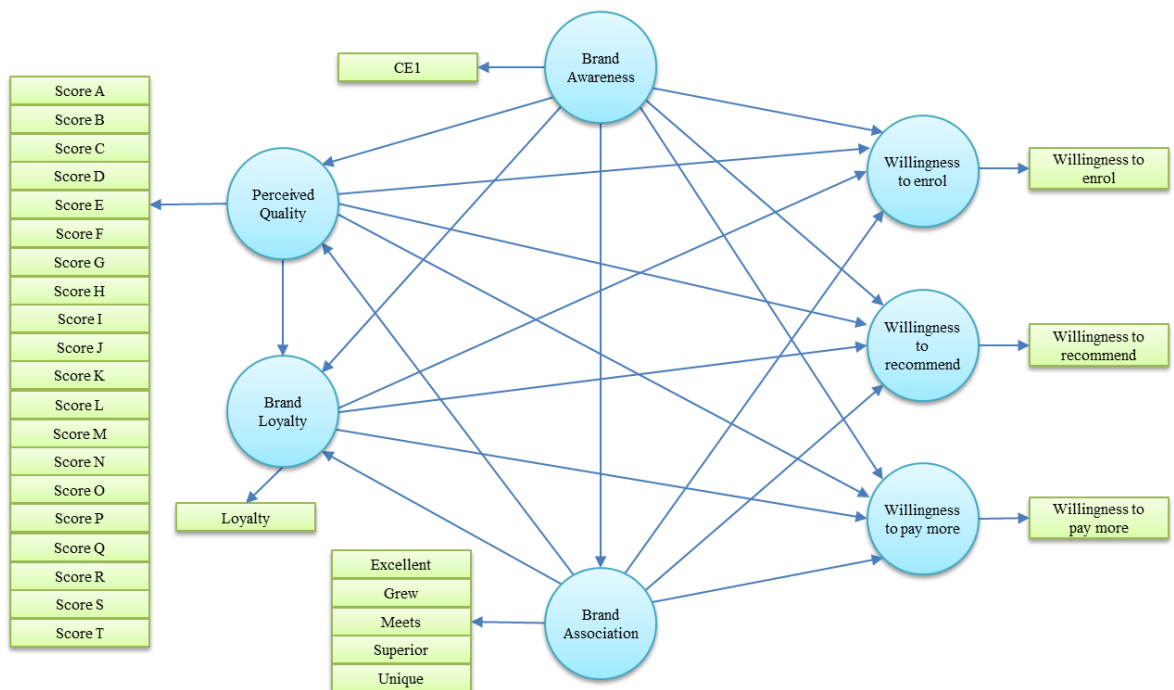
Figure 5-3. Model B: Latent variable "Perceived Quality" is measured by twenty manifest variables

In each model, reliability and validity measures of the outer model were firstly evaluated to provide evidence on how reliable and accurate the measures were and confirm if manifest variables were representing the constructs of interest (that is, the measurement or outer model). Secondly, the validity of paths between latent variables was evaluated (that is the structural or inner model). The main purpose of this assessment was to evaluate the strength of the relationship between the latent variables described by the model. Next, the goodness of fit (GoF) was calculated to understand the quality of the model, though it is generally understood that there is no overall GoF index in PLS path modelling, due to the distribution-free assumption of PLS, and the fact that PLS does not provide any global scalar function (Tenenhaus et al. 2005; Durate and Raposo 2010; Götz et al. 2010; Vinzi et al. 2010). Nevertheless, a global GoF index has been developed by Tenenhaus et al. (2005), and the GoF index for the models in the study will be further discussed in Section 5.5.4 and 5.5.7. Following that, a comparison between the two proposed models will be presented to identify a better model that could be used for evaluating hypotheses. Then, the detailed analysis of hypotheses will be presented and followed by the discussion on the mediation effects in the model.

The next section firstly presents the data analysis and findings of the measurement and structural models A and followed by the same analyses of model B for comparison.

5.5.1   Measurement model evaluation

5.5.1.1   Reliability and validity measures of the measurement models

This section follows Chin's (2010) suggested measurements (construct reliability, convergent and discriminant validities) for assessing the reliability and validity of the measurement models of the study. Furthermore, two additional measurements; namely indicator reliability (Chin 1998a; Henseler et al. 2009; Barroso et al. 2010; Duarte and

Raposo 2010; Götz et al. 2010; Hair et al. 2011) and content validity (Tenenhaus et al. 2005; Götz et al. 2010; Vinzi et al. 2010), as commonly suggested by the other scholars, were evaluated in order to more comprehensively evaluate the reliability and validity of the outer model. Thus, following Götz et al.'s (2010) recommendations, these five types of reliability and validity measures were performed to validate the quality of the measurement model. Table 5-6 summarises the benchmarking of reliability and validity measures from the available PLS literature, used in assessing the quality of the outer model of the study.

Five types of reliability and validity measurements in evaluating the measurement (outer) models of the study were performed and they have been discussed in previous Section 4.7 of the Methodology chapter. This section recaps the main points and presents the common thresholds for sufficient values of each measure according to the PLS literature.

Indicator reliability

Indicator reliability, also known as individual item reliability (Barroso et al. 2010), refers to the percentage of variance of a manifest variable can be explained by the underlying latent variable (Barroso et al. 2010). In order to accept a manifest variable as part of a underlying latent variable, each manifest variable should have a loading of at least 0.6 (Chin 1998a), or more desirable if exceeding 0.7 (Chin 1998a; Götz et al. 2010; Hair et al. 2011) or even ideally if exceeding 0.707 ($\approx \sqrt{0.5}$) (Henseler et al. 2009; Barroso et al. 2010; Duarte and Raposso 2010). In this study, the most stringent standard of 0.707 was adopted which indicated that more than 50% variance of a manifest variable had been explained by the latent variable (Götz et al. 2010). If any manifest variable's outer loading was less than 0.707, that variable would be removed from the model (Barroso et al. 2010).

Construct reliability

Construct reliability specifies how well a latent variable was measured by its manifest variables (Henseler et al. 2009; Barroso et al. 2010; Chin 2010; Götz et al. 2010). Construct reliability includes two types of measures; Cronbach's alpha and composite reliability, to evaluate the internal consistency between manifest variables and a underlying latent variable (Henseler et al. 2009; Barroso et al. 2010; Chin 2010; Götz et al. 2010; Vinzi et al. 2010) and can be considered as the measures for checking the block homogeneity (Tenehaus et al. 2005; Vinzi et al. 2010). In a general terms, Cronbach's alpha should exceed 0.7 in order to be considered as satisfactory (Hair et al. 1998, 2006; Henseler et al. 2009; Vinzi et al. 2010), or can be accepted as low as 0.6 in exploratory research (Hair et al. 1998, 2006; Götz et al. 2010) and 0.8 or more in a more advanced stage of research (Nunnally 1978; Henseler et al. 2009). In this context, the composite reliability scores should be interpreted in the same way as Cronbach's alpha; that is the score should exceed 0.7 and should not be lower than 0.6 (Henseler et al. 2009; Götz et al. 2010; Vinzi et al. 2010; Hair et al. 2011). Thus, both indices should exceed 0.7 to be deemed acceptable and these were applied in the data analysis of the study. Cronbach's alpha assumes the tau equivalence of the manifest variables in that all indicators are equally weighted in explaining the latent variable. Composite reliability does not use this assumption as it considers manifest variables have different loadings. Thus, composite reliability is regarded as a better and more reliable indicator than Cronbach's alpha (Tenehaus et al. 2005; Henseler et al. 2009).

Convergent validity

Convergent validity refers to the extent to which a block of manifest variables represents the underlying latent construct (Henseler et al. 2009). Fornell and Larcker (1981) suggested using average variance extracted (AVE) as a measure; and AVE is becoming a

widely accepted measure to evaluate convergent validity and it is suggested that an AVE should be larger than 0.5 in order to be considered as an acceptable validity measure (Fornell and Larcker 1981; Henseler et al. 2009; Wetzels et al. 2009; Barroso et al, 2010; Chin 2010; Duarte and Raposo 2010; Götz et al. 2010; Hair et al. 2011).

Content validity

Content validity refers to the extent that a group of indicators belongs to the same latent variable and it aims to check for the unidimensionality of the manifest variables with the underlying latent construct. Principal component analysis is an appropriate method for assessing the manifest variables' underlying structure. A block of indicators is confirmed unidimensional if the first eigenvalue of the correlation matrix of a block indicators is larger than 1 while the second one is smaller than 1 (Tenenhaus et al 2005; Götz et al. 2010; Vinzi et al. 2010) or the second one is greater than 1 but it is very far from the first one (Tenehaus et al. 2005). The first principal component should be positively correlated with all other manifest variables of the same block. Any manifest variables that are negatively correlated with the first principal component should be removed from the measurement model (Tenenhaus et al. 2005).

Discriminant validity

Discriminant validity specifies if a latent variable exhibits a stronger relationship with its own indicators than with any other latent variables, and it can be measured by three methods. First, comparing the square root of the AVE of each latent variable with the correlations of all other latent variables (Chin 2010). Second, as postulated by Fornell and Larcker (1981), the AVE of each latent variable must be greater than the squared correlation among any other latent variables; thus this is also known as Fornell-Larcker criterion. Third, the item loading of each manifest variable of its construct must be higher

than all other cross-loadings (Henseler et al. 2009; Chin 2010; Hair et al. 2011). Considering this range of measures of discriminant validity is more appropriate is the choice of researchers (Chin 2010; Götz et al. 2010; Hair et al. 2011). The study will evaluate the model's discriminant validity by all three methods.

Table 5-6. Summary of reliability and validity measures' benchmarks for PLS measurement model applied to the study

Outer model quality measures	Benchmark	Source of references
Indicator reliability	Outerloadings ≥ 0.707	Henseler et al. (2009) Barroso et al. (2010) Duarte and Raposso (2010)
Construct reliability	Cronbach's alpha ≥ 0.7 Composite reliability ≥ 0.7	Hair et al. (1998, 2006, 2011) Henseler et al. (2009) Götz et al. (2010) Vinzi et al. (2010)
Convergent validity	AVE ≥ 0.5	Fornell & Larcker (1981) Henseler et al. (2009) Wetzels et al. (2009) Barroso et al. (2010) Chin (2010) Duarte and Raposo (2010) Götz et al. (2010) Hair et al. (2011)
Content validity	PCA: First eigenvalue > 1 Second eigenvalue < 1	Tenenhaus et al. (2005) Götz et al. (2010) Vinzi et al. (2010)
Discriminant validity	(a) Square root of AVE for own construct > correlation with other latent variables (LVs)	Chin (2010)
	(b) Fornell-Larcker criterion: AVE for each LV > squared correlation with other LVs	Fornell & Lacker (1981) Henseler et al. (2009) Chin (2010)
	(c) Crossloadings: Items correlation with own LV > items correlations with other LVs	Henseler et al. (2009) Chin (2010) Hair et al. (2011)

This section discussed five types of reliability and validity measures which are required to evaluate the quality of measurement models; namely, indicator reliability, construct

reliability, convergent validity, content validity, and discriminant validity. The chosen thresholds of these measures are presented above. Based on these criteria, the findings of the measurement model of the study will be presented in the next section.

5.5.2 Validity assessment for measurement model A (outer model)

As previously discussed, this study follows the suggestions of Hair et al. (1998), Henseler et al. (2009), and Chin (2010) by using the two step approach for SEM analysis; first, assessment of measurement (outer) model, and second, estimation of the structural (inner) model. Followed by Vinzi et al.'s (2010) suggestion, since the PLS path modelling structure consists of three parts, the measurement model (outer model), the structural model (inner model) and the overall model, the overall model will be validated after these two stages. This section firstly presents the findings of the measurement model for the previously described Model A.

In model A (Figure 5-2), only the latent variable "Brand Association" was reflected by multiple manifest variables, while other latent variables were reflected by single manifest variables only. Thus, for the model A, based on the above suggested reliability and validity measures, the latent variable "Brand Association" was required to undergo reliability and validity assessment for evaluating the measurement model.

Evaluating for indicator reliability

Table 5-7 presented the outer loadings and *t*-values for the five manifest variables that were associated with the latent variable "Brand Association" in model A. The results show that all the indicators associated with the construct "brand association" scored greater than 0.707, and were statistically significant (Henseler et al. 2009; Barroso et al. 2010; Duarte and Raposso 2010). The indicators demonstrated sufficient indicator reliability. Of the five

factor loadings, three were greater than 0.83 and two were greater than 0.75, and all outer

loadings were statically significant ($p < 0.001$) and larger than the performance benchmark

0.707. Thus, these indicators were retained in the model (Barroso et al. 2010).

Table 5-7. Evaluation of indicator reliability for model A: Standardised outer loadings and t-values for manifest variables associated with latent variable "Brand Association"

Latent Variable	Manifest Variables	Outer Loadings	t-values[+]
Brand Association	Excellent	0.83788[***]	21.35728
	Grew	0.75388[***]	14.41062
	Meets	0.87698[***]	37.79857
	Superior	0.89257[***]	45.80766
	Unique	0.79003[***]	16.11350

[+]t-values were obtained by running bootstrapping procedure with 500 resamples
[***] $p < 0.001$

Evaluating for construct reliability

As mentioned, a performance benchmark of 0.7 was adopted for both Composite

Reliability and Cronbach's Alpha for the study. Table 5-8 summarized values of

Composite Reliability, Crobach's Alpha and Average Variance Extracted (AVE) for all the

latent variables. With the exception of "Brand Association", all latent variables were linked

to one manifest variable, and therefore values of these three indices equal one. For the

latent variable "Brand Association", its composite reliability and Cronbach's alpha were 0.

91798 and 0.88755 respectively which were larger than the benchmark of 0.7 (Hair et al.

1998, 2006, 2011; Henseler et al. 2009; Götz et al. 2010; Vinzi et al. 2010), and thus

demonstrated that the construct had sufficient construct reliability.

Evaluating for convergent validity

Fornell and Larcker (1981) suggested using average variance extracted (AVE) as a

convergent validity measure for the outer model. AVE has been a widely accepted measure

to evaluate convergent validity and it is suggested that AVE should be larger than 0.5 in

order to be considered as sufficient evidence of reliability (Fornell and Larcker 1981; Henseler et al. 2009; Wetzels et al. 2009; Barroso et al, 2010; Chin 2010; Duarte and Raposo 2010; Götz et al. 2010; Hair et al. 2011). Table 5-8 shows that the AVE for the latent variable "Brand Association" was 0.69206 which is above the acceptable minimum value and provides evidence of convergent validity.

Table 5-8. Evaluation of construct reliability and convergent validity: AVE, composite reliability and Cronbach's alpha

Latent Variables	AVE	Composite Reliability	Cronbach's Alpha
Brand Association	0.69206	0.91798	0.88755

Evaluating for content validity

Content validity, or the checking for unidemensionality, can be revealed by principal component analysis (PCA) on a set of manifest variables that are associated with the same latent variable. The set of manifest variables is unidimensional if the first eigenvalue of the set is larger than one and the second eigenvalue us smaller than one, or far from the first one (Tenenhaus et al., 2005; Götz et al. 2010; Vinzi et al. 2010). For this assessment, PCA was applied on five variables (Excellent, Grew, Meets, Superior, and Unique) that all were manifest variables of the latent variable "Brand Association". The PCA results are shown in Table 5-9. Note that the first eigenvalue (3.461) was larger than one, and the second eigenvalue (0.615) was smaller than one. Hence, the content validity, or unidemensionality, for model A could be confirmed.

Table 5-9. Evaluation of content validity: PCA analysis and first two eigenvalues of latent variables

Latent Variables	First eigenvalue	Second eigenvalue
Brand Association	3.461	0.615

<u>Evaluating for discriminant validity</u>

As discussed previously and reviewed in the literature, three evaluation methods were adopted to evaluate the discriminant validity of the study.

A. Comparing square root of AVE to latent variables' correlations

The first method was to compare the square root of AVE of a latent variable to its correlation with other latent variables. That is, the square root of AVE of a latent variable should be higher than correlations of the same latent variable with other latent variables in the model. This aims to examine if a specified latent variable is more correlated with its own manifest variables than with another latent variable. Otherwise, it is possible that the two latent variables share common factors and are not conceptually difference (Chin, 2010).

B. Comparing the AVE with the squared correlations among other latent variables

The second method was to examine and compare how each latent variable related to its associated manifest variables, and how that manifest variable related to other manifest variables in the model. This assessment, also known as the Fornell-Larcker (1981) criterion, can be performed by comparing the AVE of a latent variable and the squared correlation of the same latent variable with other latent variables (Fornell and Larcker 1981; Henseler et al. 2009; Chin 2010). The rationales of both assessment techniques are the same, and they all evaluate discriminant validity on the construct level (Henseler et al. 2009), but by using the second one, it is easier to observe the differences between the shared variance among latent variables and that latent variable to manifest variables (Chin, 2010).

Both assessment techniques were recommended and adopted by researchers. For example, Barroso et al. (2010), Duarte and Raposo (2010), Kleijinen et al. (2007) and Wetzels et al.

(2009) adopted the technique of comparing the square root of AVE to the correlations of latent variables; while Götz et al. (2010) chose to compare AVE with the squared correlations among other latent variables. Tables 5-10 and 5-11 present the comparison results using both techniques.

In table 5-10, it shows that the square root of AVE of "Brand Association" (0.83190) was much larger than all corresponding correlations with other latent variables. Similarly, the same conclusion can be drawn from comparing the AVE with squared correlations among other constructs (Table 5-11), in that the AVE of "Brand Association" (0.69206) proved to be much larger than all corresponding squared correlations with other latent variables. Both results confirm that the discriminant validity was satisfactory.

Table 5-10. Evaluation of discriminant validity: Comparing square root of AVE for latent variable "Brand Association" and its correlation coefficients with other latent variables

Latent Variables	Correlation Coefficient with Brand Association
Brand Awareness	0.02405
Brand Association	1.00000
Perceived Quality	0.68017
Brand Loyalty	0.50904
Willingness to Enrol	0.19891
Willingness to Recommend	0.49111
Willingness to Pay More	0.45013
Square root of AVE for Brand Association	0.83190

Table 5-11. Evaluation of discriminant validity: Comparing AVE for latent variable "Brand Association" and its squared correlation coefficients with other latent variables

Latent Variables	Squared Correlation Coefficient with Brand Association
Brand Awareness	0.00058
Brand Association	1.00000
Perceived Quality	0.46263
Brand Loyalty	0.25912
Willingness to Enrol	0.03957
Willingness to Recommend	0.24119
Willingness to Pay More	0.20262
AVE for Brand Association	0.69206

C. Comparing each indicator to its latent variable and to other latent variables

The third method was to examine how each manifest variable relates to other latent variables. Unlike the previous two measures of discriminant validity, the cross-loadings method evaluates the discriminant validity on the indicator level (Henseler et al. 2009). If the model is valid, each manifest variable should be strongly related to its corresponding latent variable, and should have weaker correlation with other latent variables. If this is not the case, the particular indicator may be more appropriate to reflect another construct with which it may be more highly correlated (Henseler et al., 2009; Chin, 2010). This strength of the correlation is reflected by the cross-loadings between the latent variables and manifest variables. Table 5-12 lists the cross-loadings for the latent variable "Brand Association" with all manifest variables presented in model A. Five values highlighted in bold were outer loadings for the manifest variables that were associated with the latent variable "Brand Association". All these values, ranging from 0.75388 to 0.89257, were larger than all cross-loadings that ranged from 0.02405 to 0.68017. This result indicated that the discriminant validity assessment of the construct of "Brand association" was satisfactory.

Table 5-12. Evaluation of discriminant validity: Cross-loadings for latent variables "Brand Association" with all manifest variables

Manifest Variables	Cross Loadings with Brand Association
CE1	0.02405
Excellent	**0.83788**
Grew	**0.75388**
Meets	**0.87698**
Superior	**0.89257**
Unique	**0.79003**
Overall Score	0.68017
Brand Loyalty	0.50904
Willingness to Enrol	0.19891
Willingness to Recommend	0.49111
Willingness to Pay More	0.45013

In summary, model A exceeded the minimum requirements of all five types of reliability and validity assessments for the measurement model. Next, validity measures for the structural model will be evaluated.

5.5.3 Validity assessment for structural model A (inner model)

The outer model findings were previously discussed and all the reliability and validity measures were found satisfactory. This therefore allows an evaluation of the structural model estimates. This section presents the findings of the structural model A.

Based on the theoretical reasoning discussed in chapter 4.4.1, the inner model frames the causal relationships of the hypothesised constructs. Henseler et al. (2009) recommend that PLS structural (inner) models can be evaluated by four essential criteria, 1. Coefficient of determination (R^2) of the endogenous variables; 2. Estimates for path coefficients; 3. Effect sizes (f^2); and, 4. Prediction relevance (Q^2 and q^2). In addition, both Chin (2010) and Vinzi et al. (2010) suggest that a global goodness of fit (GoF) index should be evaluated for the overall model assessment, though it has been discussed earlier that PLS path modelling lacks global fitness measures to evaluate the overall model. Nevertheless,

recently, a global criterion of the goodness of fit index for PLS has been proposed by Tenenhaus et al. (2005) and this quality index is strongly supported by Chin (2010) and Vinzi et al. (2010). Thus this was adopted in the study as an essential criterion for validation of the PLS model globally. Table 5-13 summarises the quality criteria for structural (inner) models from the available PLS literature, to provide widely acceptable standards in validating the quality of the inner model of the study.

Table 5-13. Summary of quality measures with benchmarks for PLS structural model, and GoF index applied to the study

Inner model quality measures	Benchmark		Source of references
Coefficient of determination, R^2	0.19	weak	Chin (1998b)
	0.33	moderate	
	0.67	substantial	
Estimate for path coefficients, β	> 0.20		Chin (1998a)
	+ve	support hypothesised direction	Hair et al. (2006) Henseler et al. (2009) Götz et al. (2010)
Effect size, f^2	0.02	weak	Chin (1998b)
	0.15	moderate	Cohen (1988)
	0.35	substantial	Henseler et al. (2009) Götz et al. (2010) Hair et al. (2014)
Predictive Relevance, Q^2	> 0.00		Stone (1974) Geisser (1975) Tenenhaus et al. (2005) Henseler et al. (2009) Chin (2010) Götz et al. (2010) Ringle et al. (2010) Hair et al. (2011, 2014)
q^2	0.02	small	Henseler et al. (2009), Chin (2010)
	0.15	medium	
	0.35	large	
Goodness-of-fit index, GoF	0.10	small	Wetzels et al. (2009)
	0.25	medium	
	0.36	large	

5.5.3.1 Evaluate the coefficient of determination R^2 – Model A

Based on the recommendations of Henseler et al. (2009) and Chin (2010), the coefficient of determination, R^2, was firstly reviewed in the PLS inner model evaluation. Similar to ordinary least squares regression, R^2 reflects the amount of variance of a construct that can be explained by the model. At such, the predictive power of the structural model could be examined by the coefficient of determination, R^2, of the endogenous variables (Chin 2010; Götz et al. 2010). An endogenous variable is a latent variable that is a dependent variable which is predicted by at least one other latent variable. An exogenous variable, on the other hand, is a latent variable that is used to predict one or more latent variables (Götz et al., 2010). R^2 values range between 0 and 1 (Götz et al., 2010). According to Chin (1998b), the R^2 values of 0.19, 0.33, or 0.67 for endogenous variable can be interpreted as weak, moderate, or substantial respectively. In addition, Hair et al. (2011) suggests that the judgment for acceptable levels of R^2 should be in relation to respective research disciplines. For example, R^2 value of 0.20 is considered high in the consumer behaviour discipline; whereas an R^2 value of 0.75 is considered high in success drivers research. They suggest R^2 values of 0.25, 0.5, and 0.75 for endogenous latent variables are considered as weak, moderate and substantial respectively. As a rule of thumb, the current study used Chin's (1998b) benchmark in evaluating the quality of R^2 values of the inner model.

Table 5-14 summarises the R^2 value of each endogenous variable in model A. The results indicated that the value of R^2 for the endogenous variable "Willingness to Recommend" was very substantial and that around 92.7% can be explained by the model. Similarly, the value of R^2 for the endogenous variables "Perceived Quality" and "Willingness to Pay More" were moderate to substantial and about 46.3% and 39.2% can be explained by the model respectively.   Furthermore, the value of R^2 for the endogenous variable "Brand Loyalty" was nearly moderate (28.4%), and that the R^2 for both endogenous variables

"Brand Association" (0.06%) and "Willingness to Enrol" (6.2%) were considered as very weak.

Table 5-14. Evaluation of variance explained – determination coefficient R^2

Endogenous Variables	R^2	Variance Explained
Brand Association	0.00058	Very Weak
Perceived Quality	0.46265	Moderate
Brand Loyalty	0.28363	Close to moderate
Willingness to Enrol	0.06249	Very Weak
Willingness to Recommend	0.92707	Very substantial
Willingness to Pay More	0.39186	Moderate

In summary, the R^2 values of the endogenous variables were analysed and discussed. It was acknowledged that the endogenous variables "Brand Association" and "Willingness to Enrol" were considered as very weak. Nevertheless, the R^2 for the endogenous variable "Willingness to Recommend" was considered as very substantial, and, the R^2 for the endogenous variables "Perceived Quality" and "Willingness to Pay More" were considered as moderate to substantial. According to Chin (1998b), these results (that is, the endogenous variables with R^2 values at least 0.19) illustrated that the model was statistically meaningful in predicting the dependent variables. The next section discusses the estimates for path coefficients of model A.

5.5.3.2 Evaluate the estimates for path coefficients – Model A

The following section evaluates the values of path coefficients in terms of their sign, magnitude and significance as according to Henseler et al.'s (2009) suggestion.

The standardised path coefficients were assessed in terms of sign, magnitude and significance, to judge the quality of the inner model. The path coefficients of the PLS inner model can be viewed similarly as standardised coefficients of ordinary least squares

regression (Henseler et al. 2009). If the structural paths were insignificant or indicated the path coefficients with signs contrary to the hypothesised direction, a priori hypotheses were not supported. In other words, if the paths were significant and indicated with the same hypothesised direction, these empirically supported the proposed causal relationship between the endogenous and exogenous constructs (Henseler et al. 2009; Götz et al. 2010). Chin (1998a) proposes a meaningful magnitude of standardised path coefficients should be at least 0.2. In addition, the significance of these coefficients was evaluated by means of one-tailed t-statistics that were obtained by executing bootstrapping procedure with 500 resamples (Mooney and Duval 1993; Henseler et al. 2009; Henseler and Chin 2010; Temme et al. 2010). As mentioned in the previous Chapter 4.4.1, all the hypothesised relationships of the study are in positive, thus one-tailed test of significance should be employed (Hair et al.1998).

Table 5-15 summarises the results of evaluating the path coefficients' values in terms of sign, magnitude and significance, of the inner model. From the results, it is shown that there were eight standardised paths out of eighteen hypothesised paths that were statistically significant. However, one of the eight significant paths, that is, "Brand awareness → willingness to recommend" (β = -0.07153, t = 1.76413, p < 0.05), was showed a negative sign which is contrary to the hypothesised direction, and thus it did not support the *a priori* hypothesis (Henseler et al. 2009; Götz et al. 2010).

As a result, seven significant paths empirically supported the hypothesised causal relationships. They were: 1. Brand association → Perceived quality (β = 0.68029, t = 13.70270, p < 0.001), 2. Brand Association → Brand Loyalty (β = 0.36570, t = 3.11430, p ≈ 0.001), 3. Perceived Quality → Brand Loyalty (β = 0.20965, t = 1.87262, p < 0.05), 4. Brand Loyalty → Willingness to Enrol (β = 0.16142, t = 1.48120, p < 0.1), 5. Brand

Loyalty → Willingness to Recommend (β = 0.95875, t = 45.96233, p < 0.001), 6. Brand

Association → Willingness to Pay More (β = 0.19517, t = 2.08606, p < 0.05), and 7. Brand

Loyalty → Willingness to Pay More (β = 0.49278, t = 6.62336, p < 0.001).

Table 5-15. Quality of the inner model: Evaluating standardised path coefficients and their significant levels

Paths		Beta Coefficients	t-values[+]	p-values of one-tailed test
Brand Awareness	→ Brand Association	0.02405	0.41820	*n.s.*
Brand Awareness	→ Perceived Quality	-0.00514	0.13807	*n.s.*
Brand Association	→ Perceived Quality	0.68029	13.70270	p < 0.001
Brand Awareness	→ Brand Loyalty	0.03096	0.28282	*n.s.*
Brand Association	→ Brand Loyalty	0.36570	3.11430	$p \approx 0.001$
Perceived Quality	→ Brand Loyalty	0.20965	1.87262	$p \approx 0.031$
Brand Awareness	→ Willingness to Enrol	0.04282	0.55338	*n.s.*
Brand Association	→ Willingness to Enrol	0.09717	0.78237	*n.s.*
Perceived Quality	→ Willingness to Enrol	0.02727	0.18661	*n.s.*
Brand Loyalty	→ Willingness to Enrol	0.16142	1.48120	$p \approx 0.070$
Brand Awareness	→ Willingness to Recommend	-0.07153	1.76413	$p \approx 0.039$
Brand Association	→ Willingness to Recommend	-0.00683	0.15844	*n.s.*
Perceived Quality	→ Willingness to Recommend	0.01708	0.41603	*n.s.*
Brand Loyalty	→ Willingness to Recommend	0.95875	45.96233	p < 0.001
Brand Awareness	→ Willingness to Pay More	0.08124	0.77590	*n.s.*
Brand Association	→ Willingness to Pay More	0.19517	2.08606	$p \approx 0.019$
Perceived Quality	→ Willingness to Pay More	0.00317	0.03016	*n.s.*
Brand Loyalty	→ Willingness to Pay More	0.49278	6.62336	p < 0.001

[+]t-values were obtained by running bootstrapping procedure with 500 resamples
n.s.= non-significant, p > 0.1

Furthermore, when taking into consideration the magnitude of the path coefficients, the 6

significant paths above (except the path of Brand Loyalty → Willingness to Enrol)

indicated a robust causal relationships between two variables as their standardised path

coefficients exceeded 0.20 (Chin 1998a), they ranged from 0.20 to 0.96 which indicated

they were statistically significant paths with meaningful magnitude. Some of them even

had very high values of standardised path coefficients (such as Brand Association → Brand

Loyalty, β = 0.36570; Brand Loyalty → Willingness to Pay More, β = 0.49278; and, Brand

Loyalty → Willingness to Recommend, β = 0.95875); while it was noted that the path

coefficient of Brand Association → Willingness to Pay More, was very close to 0.2; its value was 0.195. Altogether there were two paths' standardised path coefficients that were slightly smaller than 0.20, however, they were statistically significant and will be retained for comparison with the results of model B (In fact, the comparison was made between model A and model B´, an improved model of model B, after concluding the indicator reliability test), and is examined later in this chapter to evaluate if the direct path significant result was affected by the mediation effect.

5.5.3.3 Evaluate the effect size, f^2 – Model A

This section discusses effect size, f^2 as developed by Cohen (1988), another measure for evaluating the quality of inner model. The effect size, f^2 should be applied, whenever an endogenous variable has multiple exogenous variables, and further analysis can be explored to evaluate the impact of each particular exogenous variable on corresponding endogenous variables by evaluating the change of R^2 (Henseler et al. 2009; Chin 2010; Götz et al. 2010). The change of R^2 was captured as the effect size (f^2) of individual exogenous variables and can be calculated by the following formula (Henseler et al. 2009, p.303; Chin 2010 p. 675; Götz et al. 2010, p. 702):

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

where $R^2_{included}$ is the R^2 value when the named exogenous variable was included for the calculation of R^2 of corresponding endogenous variable (that is, the R^2 computed in the original model). $R^2_{excluded}$ is the R^2 value when the named exogenous variable was omitted from the R^2 calculation (Chin 2010; Götz et al. 2010; Hair et al. 2014, p.196). It was suggested that the f^2 values of 0.02, 0.15, or 0.35 for exogenous variables could be described as small, medium, or large effects on the corresponding endogenous variables (Chin 1998b, p.316, 2010; Cohen, 1988, p.413; Henseler et al., 2009; Götz et al., 2010;

Hair et al., 2014, p.196). Table 5-16 summarises the calculated results of f^2. For those seven paths that had been identified as significant in Table 5-15, the results of effect sizes indicated that the latent variable "Brand Loyalty" had an exceptionally large impact on the endogenous variable "Willingness to Recommend", a medium to large influence on the endogenous variable "Willingness to Pay More", and a small influence on the endogenous variable "Willingness to Enrol". The exogenous variable "Brand Association" also had a very large influence on the endogenous variable "Perceived Quality", and a small to medium influence on the endogenous variable "Brand Loyalty", and a small influence on the endogenous variable "Willingness to Pay More". The exogenous variable "Perceived Quality" also had a small influence on the endogenous variable "Brand Loyalty".

Table 5-16. Evaluation of effect size f^2 for exogenous variables

Endogenous Variables	Exogenous Variables	$R^2_{included}$	$R^2_{excluded}$	f^2	Effect
Perceived Quality	Brand Awareness	0.46265	0.46257	0.00015	-
	Brand Association[+]	0.46265	0.00013	0.86074	Very large
Brand Loyalty	Brand Awareness	0.28363	0.28267	0.00134	-
	Brand Association[+]	0.28363	0.21180	0.10027	Small to medium
	Perceived Quality[+]	0.28363	0.26140	0.03103	Small
Willingness to Enrol	Brand Awareness	0.06249	0.06065	0.00196	-
	Brand Association	0.06249	0.05789	0.00491	-
	Perceived Quality	0.06249	0.06214	0.00037	-
	Brand Loyalty[+]	0.06249	0.04384	0.01989	Small
Willingness to Recommend	Brand Awareness	0.92707	0.92196	0.07007	-
	Brand Association	0.92707	0.92705	0.00027	-
	Perceived Quality	0.92707	0.92693	0.00192	-
	Brand Loyalty[+]	0.92707	0.26785	9.03908	Exceptionally large
Willingness to Pay More	Brand Awareness	0.39186	0.38528	0.01082	-
	Brand Association[+]	0.39186	0.37326	0.03059	Small
	Perceived Quality	0.39186	0.39141	0.00074	-
	Brand Loyalty[+]	0.39186	0.21819	0.28558	Medium to large

[+] The corresponding path coefficients were identified as significant in Table 5-15.

In summary, the measurement of effect sizes is very useful in better understanding what is the impact of an exogenous variable on an endogenous variable, whenever there are more than one exogenous variables on a corresponding endogenous variable. From the results of effect sizes for those seven statistically significant paths, clearly, it can be concluded that

the latent variables of "Brand Association" had a large effect on "Perceived Quality"; and "Brand Loyalty" had an exceptionally large influence on "Willingness to Recommend". Moreover, the effect sizes results indicated "Brand Loyalty" had a moderate to large impact on "Willingness to Pay More". In addition, the effect size of "Brand Association to Brand Loyalty" was considered as small to medium. For the remaining three statistically significant paths, that is, 'Perceived Quality to Brand Loyalty", "Brand Loyalty to Willingness to Enrol" and "Brand Association to Willingness to Pay More", the exogenous variables had small, but still significant, influences on endogenous variables. The next section presents the predictive validity of the model.

5.5.3.4 Evaluate the predictive relevance, Q^2 and q^2 – Model A

This section discusses the measures in validating the predictive relevance of the model. As discussed previously, the coefficient of determination, R^2 indicates how much variance of the endogenous variable is explained by the model. In other words, it represents the predictive ability of the model. Alternatively, predictive relevance (also known as Stone-Geisser's Q^2) is another commonly used criterion in the evaluation of the structural model which can show the model's predictive ability (Henseler et al. 2009; Chin 2010).

The predictive relevance of the PLS model is suggested to be tested by the non-parametric Stone-Geisser Test, developed by Stone (1974) and Geisser (1975) (Tenenhaus et al. 2005; Barroso et al. 2010; Chin 2010; Götz et al. 2010; Hair et al. 2011). A cross-validated redundancy Q^2 was the criterion of the Stone-Geisser test, which was obtained from a "blindfolding" procedure. The blindfolding procedure removed the first data point, and every other D (omission distance) data point until the end of data matrix during the parameter estimations. Removed data was treated as missing values in the estimation by using methods, such as pairwise deletion, or mean substitution, and the obtained estimates

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were used to reconstruct raw data. Prediction errors were then collected for the calculation of Q^2 (Chin 2010; Götz et al. 2010). If the value of Q^2 is larger than zero, it implies that block of corresponding exogenous variables have predictive relevance for the endogenous variable in question and it indicates the model has predictive ability. Otherwise values below 0 (that means the Q^2 values, due to blindfolding, can be negative), indicates that the corresponding endogenous construct is badly predicted and the model lacks predictive relevance (Tenenhaus et al. 2005; Henseler et al. 2009; Chin 2010; Götz et al. 2010; Ringle et al. 2010; Hair et al. 2011, 2014). If a Q^2 value is significantly above 0, it demonstrates that exogenous variable has high predictive ability (Ringle et al. 2010). There are several different suggestions on the selection of omission distance *D*. For example, Chin (2010) suggested that the value of *D* should be a prime integer between the number of indicators and observed cases; Hair et al. (2014) suggests not to use an omission distance *D* such that dividing the total number of observations by *D* is an integer; while Tenenhaus et al. (2009) recommended to use 7 as the omission distance (Tenenhaus et al., p.174).

In this study, three omission distance values, 7, 37, and 67, were chosen for the assessment. The value 7 was chosen based on the suggestion of Tenenhaus et al. (2009); the value 67 was the largest prime value that is smaller than the number of observations (69 cases here) used for this analysis, and 37 was the mid-point value between 7 and 67. All three selected *D* values satisfied the requirement proposed by Chin (2010) and Hair et al. (2014). Table 5-17 lists all the values of Q^2 with three different omission distances, in which all endogenous variables had positive Q^2 no matter what omission distances were used, and hence it was concluded that all the exogenous variables had predictive relevance for the endogenous variables of the model.

Table 5-17. Evaluation of predictive relevance: Cross-validated redundancy Q^2

Endogenous Variables	Q^2		
	$D = 7$	$D = 37$	$D = 67$
Brand Association	0.00070	0.00056	0.00071
Perceived Quality	0.46918	0.46354	0.46007
Brand Loyalty	0.28108	0.28105	0.28312
Willingness to Enrol	0.08677	0.06782	0.05603
Willingness to Recommend	0.89431	0.92367	0.92719
Willingness to Pay More	0.39909	0.39218	0.38918

Similar to the coefficient of determination R^2, if an endogenous variable has multiple exogenous variables, further analysis can be done to evaluate the relative impact on the individual exogenous variable on corresponding endogenous variables by evaluating the change of Q^2 (Henseler et al. 2009; Chin 2010). The change of Q^2 was captured as q^2 of individual exogenous variables from the formula that was similar to the formula of f^2 (Henseler et al. 2009, p.303; Chin 2010, p.680):

$$q^2 = \frac{Q^2_{included} - Q^2_{excluded}}{1 - Q^2_{included}}$$

The definition of $Q^2_{included}$ and $Q^2_{excluded}$ are similar to the definitions of $R^2_{included}$ and $R^2_{excluded}$, in which $Q^2_{included}$ is the Q^2 value if the named exogenous variable was included in the calculation of Q^2 of the corresponding endogenous variable; and $Q^2_{excluded}$ is the Q^2 value when the named exogenous variable was omitted from the Q^2 calculation (Götz et al. 2010; Hair et al. 2014). As in the case of effect size f^2 interpretation, the relative impact of the predictive relevance can be evaluated by the q^2 values. The q^2 values of 0.02, 0.15, or 0.35 for exogenous variable suggest a small, medium, or large predictive relevance of the corresponding endogenous variables (Henseler et al. 2009; Chin 2010). The same set of omission distances was used for the calculation of q^2, and results are summarized in Table 5-18. Those seven paths identified as significant in Table 5-15 were evaluated and the results were similar to the interpretation of f^2. The latent variable "Brand Loyalty" has exceptionally large predictive relevance on the endogenous variable

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"Willingness to Recommend"; medium to large predictive relevance on the endogenous variable "Willingness to Pay More"; and small predictive relevance on "Willingness to Enrol". The exogenous variable "Brand Association" has a very large predictive relevance on the endogenous variables "Perceived Quality", small to medium predictive relevance on the endogenous variable "Brand Loyalty", and small predictive relevance on "Willingness to Pay More". The exogenous variable "Perceived Quality" also had a relatively small predictive relevance on "Brand Loyalty". The next section discusses the Goodness-of-Fit index of the model.

Table 5-18. Evaluation of predictive relevance: q^2 for exogenous variables

Endogenous Variables	Exogenous Variables	q^2			Impact
		$D = 7$	$D = 37$	$D = 67$	
Perceived Quality	Brand Awareness	0.04248	0.00076	0.00106	-
	Brand Association[+]	0.88226	0.86418	0.85207	Very large
Brand Loyalty	Brand Awareness	-0.00281	0.00140	0.01325	-
	Brand Association[+]	0.09208	0.09280	0.10162	Small to medium
	Perceived Quality[+]	0.03475	0.02811	0.02822	Small
Willingness to Enrol	Brand Awareness	-0.01635	0.00564	0.00884	-
	Brand Association	0.07858	0.00714	0.00257	-
	Perceived Quality	0.00994	0.00532	-0.00211	-
	Brand Loyalty[+]	0.00142	0.02232	0.02599	Small
Willingness to Recommend	Brand Awareness	-0.22604	0.04389	0.08090	-
	Brand Association	-0.23569	-0.03655	0.00412	-
	Perceived Quality	-0.03567	-0.03170	0.00714	-
	Brand Loyalty[+]	5.95335	8.52273	9.03186	Exceptionally large
Willingness to Pay More	Brand Awareness	0.03503	0.02180	0.00701	-
	Brand Association[+]	0.03473	0.03600	0.02222	Small
	Perceived Quality	0.00577	0.00528	-0.00023	-
	Brand Loyalty[+]	0.28725	0.29004	0.28514	Medium to large

[+] The corresponding path coefficients were identified as significant in Table 5-15.

5.5.4 Evaluating the overall model, Goodness-of-fit (GoF) index – Model A

As mentioned previously, unlike CBSEM, PLS path modelling lacks an index to assess the global validation of the model (Tenenhaus et al. 2005; Durate and Raposo 2010; Götz et al. 2010; Vinzi et al. 2010). Nevertheless, recently a global criterion of goodness-of-fit index for PLS has been proposed by Tenenhaus et al. (2005) and the GoF index is also strongly suggested by Chin (2010) and Vinzi et al. (2010) for use in evaluating the PLS model

globally, after evaluating the model performance of both the measurement and structural models. Thus, this section discusses the GoF index as a criterion for validating the PLS overall predictive performance of model A.

The overall predictive performance of the model can be described by an index of Goodness-of-fit (GoF), which is the geometric mean of the average of commonality and the average of R^2 (Chin 2010, p. 681; Tenenhaus et al. 2005, p.173):

$$GoF = \sqrt{\overline{Communality} \times \overline{R^2}}$$

It was suggested that the GoF values of 0.1, 0.25, or 0.36 could be described as small, medium, or large prediction performance for validating the PLS model globally (Wetzels et al. 2009). Table 5-19 lists the values of communality and R^2 of each latent variable, the average of these two indices and the calculated results of GoF for model A. The GoF value for model A was 0.58233, which exceeded the benchmark value of 0.36 of large prediction performance. Thus, it could be concluded that the model A performed very well compared to the baseline values suggested by Wetzels et al. (2009) above; and it was suggested the model was a good model as it was able to take into account 58.2% of the achievable fit.

Table 5-19. Evaluation of Goodness-of-Fit (GoF)

Latent Variables	Communality	R^2
Brand Awareness	1.00000	-
Brand Association	0.69206	0.00058
Perceived Quality	1.00000	0.46265
Brand Loyalty	1.00000	0.28363
Willingness to Enrol	1.00000	0.06249
Willingness to Recommend	1.00000	0.92707
Willingness to Pay More	1.00000	0.39186
Average	**0.95601**	**0.35471**

$$GoF = \sqrt{0.95601 \times 0.35471} = 0.58233$$

The next section presents the findings of model B and firstly the validity assessment for measurement model B is discussed.

5.5.5 Validity assessment for measurement model B and B´ (outer model)

As discussed previously in Section 5.5, both Aaker (1991) and Keller (2003) have suggested items to measure the perceived quality construct. Nevertheless, Aaker (1991) also argues that it is necessary to measure the overall rating of the perceived quality of a brand. Thus, in this study, two models; model A and B, which reflected these two perspectives were evaluated and analysed for understanding the statistical differences between a single item, (in response to Aaker's (1991) suggestion for measuring perceived quality) and multi-item manifest variables in measuring the latent variable "perceived quality". The findings of model A have been presented. This section discusses the evaluation of measurement model B.

Model B was constructed from modifying model A in that the latent variable "Perceived Quality" was reflected by 20 individual observed scores instead of one single overall score (Figure 5-3). The main purposes in evaluating the model B were, firstly, in response to Aaker (1991) and Keller's (1993, 2003) suggestions that the construct of perceived quality can be measured by multi-items, and secondly, to compare the overall model fit and prediction between using a single item measure (that is, where the construct of perceived quality was measured only by "the overall ratings" as suggested by Aaker (1991) in model A) and using multi-item measure of the perceived quality construct. In model B, two latent variables "Brand Association" and "Perceived Quality" had multiple manifest variables and, as such, they both were required to undergo reliability and validity assessment for the measurement model.

As was for model A, five types of reliability and validity assessments for the measurement model (indicator reliability, construct reliability, convergent validity, content validity, and discriminant validity) of model B were evaluated, and the results are discussed in the following.

Evaluating for indicator reliability

The results for indicator reliability of model B are shown in Table 5-20. Although all outer loadings were significant, it was found that the outer loadings of seven manifest variables (Score B, F, G, I, J, M, and T) for latent variable "Perceived Quality" were smaller than 0.707, and failed to meet for benchmark of this reliability assessment (Henseler et al. 2009; Barroso et al. 2010; Duarte and Raposso 2010). As a result, those seven manifest variables[11] with insufficient outer loadings were removed from further analysis. Thus, a new model B´ was formed (without those 7 manifest variables which had insufficient values of outer loadings) to be re-run for the assessment of indicator reliability and for further analyses in the following sections (Barroso et al. 2010). All outer loadings for model B´ were statistically significant and met the benchmark of 0.707 (Henseler et al. 2009; Barroso et al. 2010; Duarte and Raposso 2010). Table 5-20 summarized the findings of the outer loadings for both models B and B´.

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[11] Seven manifest variables with insufficient outer loadings were removed from the model for further analysis: Score B – academic qualifications highly regarded by employers, Score F – good social status of graduates, Score G – good quality of students, Score I – good quality of tutors, Score J – a wide variety of programme/courses, Score M – flexible in teaching and learning, and, Score T – give you a feeling of prestige.

Table 5-20. Evaluation of indicator reliability: Outer loadings and t-values for manifest variables associated with latent variables "Brand Association" and "Perceived Quality"

Latent Variables	Manifest Variables	Model B		Modified Model B´	
		Outer Loadings	t-values[+]	Outer Loadings	t-values[+]
Brand Association	Excellent	0.83461[***]	21.08087	0.83416[***]	19.18219
	Grew	0.75761[***]	14.52922	0.75826[***]	14.28836
	Meets	0.87858[***]	40.14134	0.87956[***]	38.07278
	Superior	0.89018[***]	41.68206	0.89062[***]	39.14621
	Unique	0.79026[***]	16.51048	0.78837[***]	15.97264
Perceived Quality	Score A	0.71210[***]	14.64426	0.73314[***]	16.39904
	Score B	0.45964[***]	3.15324	*Removed as failed to meet benchmark*	
	Score C	0.77998[***]	20.02440	0.79368[***]	20.29762
	Score D	0.76594[***]	20.27376	0.75771[***]	18.34197
	Score E	0.77146[***]	18.63279	0.72388[***]	13.33902
	Score F	0.69951[***]	10.98960	*Removed as failed to meet benchmark*	
	Score G	0.68042[***]	10.90862	*Removed as failed to meet benchmark*	
	Score H	0.86555[***]	27.36052	0.85025[***]	26.03052
	Score I	0.64838[***]	6.98183	*Removed as failed to meet benchmark*	
	Score J	0.62801[***]	7.45237	*Removed as failed to meet benchmark*	
	Score K	0.76814[***]	19.03849	0.77537[***]	20.62968
	Score L	0.86053[***]	33.02454	0.87095[***]	33.66280
	Score M	0.66914[***]	10.30319	*Removed as failed to meet benchmark*	
	Score N	0.78650[***]	18.64352	0.78367[***]	18.19105
	Score O	0.74523[***]	16.18495	0.76573[***]	20.01954
	Score P	0.75771[***]	18.01002	0.79025[***]	21.22980
	Score Q	0.81154[***]	27.23770	0.84758[***]	30.72267
	Score R	0.78191[***]	18.43898	0.77939[***]	16.67668
	Score S	0.71527[***]	10.81912	0.73825[***]	12.58526
	Score T	0.57520[***]	6.19425	*Removed as failed to meet benchmark*	

[+]t-values were obtained by running bootstrapping procedure with 500 resamples
[***]$p < 0.001$

Evaluating for construct reliability

Table 5-21 summarises the values of the composite reliability of model B´, including the Cronbach's alpha and average variance extracted (AVE) indices of all the latent variables in model B´. The composite reliability and Cronbach's alpha for the latent variable "Brand Association" were 0.91791 and 0.88755; and the composite reliability and Cronbach's alpha for the latent variable "Perceived Quality" were 0.95462 and 0.94849 respectively. The results indicated that both Cronbach's alpha (Hair et al. 1998, 2006; Henseler et al.

2009; Vinzi et al. 2010) and composite reliability (Henseler et al. 2009; Götz et al. 2010; Vinzi et al. 2010; Hair et al. 2011) indices' values for both latent variables were well above the benchmark values of 0.7, and it can be concluded the construct reliability assessment of model B´ was satisfactory.

Evaluating for convergent validity

Table 5-21 summarised values for convergent validity of model B´. The model B´ also satisfied the convergent validity assessment as AVE values for both latent variables "Brand Association" and "Perceived Quality" were 0.69183 and 0.61877 respectively, and both values were larger than the benchmark 0.5 (Fornell and Larcker 1981; Henseler et al. 2009; Wetzels et al. 2009; Barroso et al. 2010; Chin 2010; Duarte and Raposo 2010; Götz et al. 2010; Hair et al. 2011).

Table 5-21. Evaluation of construct reliability and convergent validity: AVE, composite reliability and Cronbach's alpha

Latent Variables	AVE	Composite Reliability	Cronbach's Alpha
Brand Association	0.69183	0.91791	0.88755
Perceived Quality	0.61877	0.95462	0.94849

Evaluating for content validity

Table 5-22 summarised the results for content validity of model B´. Since the latent variable "Brand Association" was reflected by the same set of manifest variables in both models A and B´, the PCA result for this variable is the same as the result in model A with the first eigenvalue larger than 1 while the second one is smaller than 1. Thus, it was concluded that its content validity was satisfactory (Tenenhaus et al. 2005; Götz et al. 2010; Vinzi et al. 2010).

For the latent variable "Perceived Quality", 13 scores were run against PCA and the results are shown in Table 5-22. Although the second eigenvalue was larger than one (1.151), it was very far from the first eigenvalue (8.057). Thus, according to the suggestion of Tenenhaus et al. (2005), both latent variables satisfied the content validity assessment.

Table 5-22. Evaluation of content validity: PCA analysis and first two eigenvalues of latent variables

Latent Variables	First eigenvalue	Second eigenvalue
Brand Association	3.461	0.615
Perceived Quality	8.057	1.151

Evaluating for discriminant validity

Similar to the evaluation of discriminant validity methods conducted on model A, three discriminant validity methods were employed in assessing model B´.

A. Comparing square root of AVE to latent variables' correlations

The first method was to compare the square root of AVE of a latent variable to its correlation with other latent variables. From Table 5-23, the square root of AVE of both latent variables "Brand Association" (0.83176) and "Perceived Quality" (0.78662) proved to be much larger than their corresponding correlations with other latent variables. It can thus be concluded that the discriminant validity tests of comparing square root of AVE to latent variables' correlations were satisfactory (Chin, 2010).

Table 5-23. Evaluation of discriminant validity: Comparing square root of AVE for latent variables and their correlation coefficients with other latent variables

Latent Variables	Correlation Coefficient	
	Brand Association	Perceived Quality
Brand Awareness	0.02514	0.05306
Brand Association	1.00000	0.58159
Perceived Quality	0.58159	1.00000
Brand Loyalty	0.50980	0.50526
Willingness to Enrol	0.20017	0.11437
Willingness to Recommend	0.49234	0.50045
Willingness to Pay More	0.45010	0.35745
Square root of AVE	0.83176	0.78662

B. Comparing the AVE with the squared correlations among other latent variables

The second test of discriminant validity test was performed by comparing the AVE of a latent variable and squared correlation of the same latent variable with other latent variables (Henseler et al. 2009; Chin 2010). Following this step, the same conclusion can be drawn when comparing AVE and squared correlations (Table 5-24), in that the AVE of both latent variables "Brand Association" (0.69183) and "Perceived Quality" (0.61877) proved to be much larger than their corresponding squared correlations with other latent variables. Both results confirmed that discriminant validity was satisfactory.

Table 5-24. Evaluation of discriminant validity: Comparing AVE for latent variables and their squared correlation coefficients with other latent variables

Latent Variables	Squared Correlation Coefficient	
	Brand Association	Perceived Quality
Brand Awareness	0.00063	0.00282
Brand Association	1.00000	0.33825
Perceived Quality	0.33825	1.00000
Brand Loyalty	0.25990	0.25529
Willingness to Enrol	0.04007	0.01308
Willingness to Recommend	0.24240	0.25045
Willingness to Pay More	0.20259	0.12777
AVE	0.69183	0.61877

C. Comparing each indicator to its latent variable and to other latent variables

The third method was the cross-loadings method which evaluates the discriminant validity on the indicator level (Henseler et al. 2009). If the model is valid, each manifest variable should be strongly related to its corresponding latent variable, and should have weaker correlation with other latent variables (Henseler et al., 2009; Chin, 2010). This strength of the correlation can be reflected by cross-loadings between the latent and manifest variables. Table 5-25 shows the cross-loadings for the latent variables of "Brand Association" and "Perceived Quality" with all manifest variables presented in model B´. Five values highlighted in bold were the outer loadings for the manifest variables that were associated with the latent variables "Brand Association" and "Perceived Quality". The outer loadings for the latent variable "Brand Association" ranged from 0.75826 to 0.89062, while its cross loadings ranged from 0.02514 to 0.55661. All its outer loadings were larger than its cross loadings. Similarly, all the outer loadings for the latent variable "Perceived Quality" ranged from 0.72388 to 0.87095, which were larger than all its cross loadings that ranged from 0.05306 to 0.60326. The results therefore indicated that the third discriminant validity assessments of the constructs of "Brand Association" and "Perceived Quality" were satisfactory.

In summary, as with the results of model A, model B´ exceeded the minimum requirements of all five types of reliability and validity assessments for the measurement model. Next, validity assessments for structural model B´ were conducted.

Table 5-25. Evaluation of discriminant validity: Cross loadings for latent variables with all manifest variables in model B´

Manifest Variables	Cross Loadings	
	Brand Association	Perceived Quality
CE1	0.02514	0.05306
Excellent	**0.83416**	0.47799
Grew	**0.75826**	0.40847
Meets	**0.87956**	0.60326
Superior	**0.89062**	0.44061
Unique	**0.78837**	0.46647
Score A	0.49229	**0.73314**
Score C	0.51165	**0.79368**
Score D	0.43146	**0.75771**
Score E	0.33409	**0.72388**
Score H	0.41689	**0.85025**
Score K	0.45059	**0.77537**
Score L	0.51490	**0.87095**
Score N	0.27869	**0.78367**
Score O	0.41714	**0.76573**
Score P	0.41318	**0.79025**
Score Q	0.55661	**0.84758**
Score R	0.50563	**0.77939**
Score S	0.50619	**0.73825**
Brand Loyalty	0.50980	0.50526
Willingness to Enrol	0.20017	0.11437
Willingness to Recommend	0.49234	0.50045
Willingness to Pay More	0.45010	0.35745

5.5.6   Validity assessment for structural model B´ (inner model)

The outer model findings of model B´ were previously discussed and all the reliability and validity measures were found satisfactory, thus allowing the evaluation of the structural model in order to provide evidence for testing the research model and hypotheses.

This section presents the findings for the structural model B´. As previously discussed, the five essential criteria which were applied in the validation of the structural model for model B´ were compared with the corresponding results of model A. This section firstly discusses the four essential criteria as suggested by Henseler et al. (2009); namely, 1. Coefficients of determination (R^2) of the endogenous variables; 2. Estimates for path

coefficients; 3. Effect sizes (f^2); and, 4. Prediction relevance (Q^2 and q^2). This is followed, in turn, by discussion of the goodness-of-fit (GoF) index, an essential criterion for validation of the PLS model globally (Tenenhaus et al. 2005; Chin 2010; Vinzi et al. 2010).

5.5.6.1 Evaluate the coefficient of determination R^2 – Model B´

Based on the recommendations of Henseler et al. (2009) and Chin (2010), the coefficient of determination, R^2, that is, the predictive power of the structural model (Chin 2010; Götz et al. 2010), was firstly reviewed in the PLS inner model evaluation. The current study used Chin's (1998b) benchmark in evaluating the quality of R^2 values of the inner model; that is, the R^2 values of 0.19, 0.33, or 0.67 for endogenous variables could be interpreted as weak, moderate, or substantial.

Table 5-26 summarises the R^2 value of each endogenous variable in model B´. The results show that the R^2 for the endogenous variables "Brand Association" (0.06%), "Willingness to Enrol", (6.5%), "Willingness to Recommend" (92.7%), and "Willingness to Pay More" (39.2%) were of similar magnitudes of the corresponding values found in model A. In addition, the R^2 for the endogenous variable "Perceived Quality" dropped from 46.3% in model A to 34% in model B´, while "Brand Loyalty rose from 28.4% in model A to 32.6% in model B´. It can thus be concluded that the inclusion of more manifest variables to reflect the latent variable "Perceived Quality" did not yield a significantly better variance explained by the model.

In summary, the coefficient of determination R^2, indicates the predictive power of the structural model, and when compared with model A, the only difference in model B´ was the use multi-manifest variables, instead of using a single item for the latent variable "Perceived Quality". The results indicated that only the R^2 value of the latent variable

"Brand Loyalty" was slightly improved from model A to model B´. However, the R^2 value of the latent variable "Perceived Quality" dropped significantly and the R^2 values of other latent variables for the models A and B´were similar. Thus, it can be concluded that model A had marginally better predictive ability than model B´. The next section discusses the estimates of the path coefficients of model B´.

Table 5-26. Evaluation of Variance Explained – determination coefficient R^2

Endogenous Variables	R^2	Variance Explained
Brand Association	0.00063	Very Weak
Perceived Quality	0.33973	Moderate
Brand Loyalty	0.32605	Moderate
Willingness to Enrol	0.06476	Very Weak
Willingness to Recommend	0.92736	Very substantial
Willingness to Pay More	0.39184	Moderate

5.5.6.2 Evaluate the estimates for path coefficients – Model B´

The following section evaluates the values of the path coefficients in terms of their sign, magnitude and significance, following Henseler et al.'s (2009) suggestion.

Table 5-27 summarises the results of evaluating the values of the path coefficients of the inner model in terms of sign, magnitude and significance. From these results, there were nine standardised paths out of eighteen hypothesised paths which were statistically significant (compared with eight significant standardised paths in model A). When compared with model A, "Brand Association → Willingness to Enrol" was the additional statistically significant path in model B´, which was insignificant in model A. The remaining eight paths had significant standardised path coefficients in both models A and B´, but had better p-values in model B´. Nevertheless, one of the nine significant paths, that is, "Brand Awareness → Willingness to Recommend" (β = -0.07252, t = 1.68661, p < 0.05), was found to be negative (as it was in model A) and contrary to the hypothesised

direction. Thus it did not support the *a priori* hypothesis (Henseler et al. 2009; Götz et al. 2010).

As a result, eight significant paths empirically supported the hypothesised casual relationships. They were: 1. Brand association → Perceived quality ($\beta = 0.58062$, $t = 9.49550$, $p < 0.001$), 2. Brand Association → Brand Loyalty ($\beta = 0.32647$, $t = 3.06221$, $p \approx 0.001$), 3. Perceived Quality → Brand Loyalty ($\beta = 0.31447$, $t = 3.16566$, $p \approx 0.001$), 4. Brand Association → Willingness to Enrol ($\beta = 0.14282$, $t = 1.38532$, $p < 0.10$), 5. Brand Loyalty → Willingness to Enrol ($\beta = 0.18247$, $t = 1.73318$, $p < 0.05$), 6. Brand Loyalty → Willingness to Recommend ($\beta = 0.95336$, $t = 39.34687$, $p < 0.001$), 7. Brand Association → Willingness to Pay More ($\beta = 0.20413$, $t = 2.18914$, $p < 0.05$), and 8. Brand Loyalty → Willingness to Pay More ($\beta = 0.49827$, $t = 6.26548$, $p < 0.001$).

Furthermore, when taking into consideration the magnitude of the path coefficients, six of the significant paths above indicated a robust causal relationships between two variables as their standardised path coefficients exceeded 0.20 (Chin 1988a), ranging from 0.20 to 0.95 which indicated they were statistically significant paths with meaningful magnitude. Some of them had very standardised path coefficients (such as Brand Association → Brand Loyalty, $\beta = 0.32647$, slightly smaller than in the model A; Brand Loyalty → Willingness to Pay More, $\beta = 0.49827$; similar as in the model A, and, Brand Loyalty → Willingness to Recommend, $\beta = 0.95336$; similar as in the model A). The exceptions were the paths of Brand Loyalty → Willingness to Enrol, which was also not significant, in model A; and Brand Association → Willingness to Enrol, which was the new statistically significant path in model B´.

Furthermore, as previously discussed, the only difference in model B´ was that the latent variable "Perceived Quality" consisted of 13 manifest variables instead of a single item as in model A. The results showed that the path coefficients and significant values were lower in model B´ for the significant paths of Brand Association → Perceived Quality (Model A: $\beta = 0.68029$, $t = 13.70270$, $p < 0.001$ versus Model B´: $\beta = 0.58062$, $t = 9.49550$, $p < 0.001$), and Brand Association →Brand Loyalty (Model A: $\beta = 0.36570$, $t = 3.11430$, $p \approx 0.001$ versus Model B´: $\beta = 0.32647$, $t = 3.06221$, $p \approx 0.001$), and were higher for the significant path of Perceived Quality → Brand loyalty (Model A: $\beta = 0.20965$, $t = 1.87262$, $p < 0.005$ versus Model B´: $\beta = 0.31447$, $t = 3.16566$, $p \approx 0.001$). The path coefficients and p values for the significant path of Brand Association → Willingness to Pay More were similar in both models A and B´.

In addition, while it was noted that the path coefficients of the significant paths of Brand Association → Willingness to Enrol (significant in model B´, but insignificant in model A); and Brand Loyalty → Willingness to Enrol, were smaller than 0.2; (with values of 0.143 and 0.182 respectively). Although these two paths' standardised path coefficients were smaller than 0.20 (indicating a weaker strength), they were statistically significant and will be retained in the comparison with model A in Section 5.5.8 in order to determine which model (A or B´) will be examined for later hypotheses testing.

In summary, the results of the estimates of the path coefficients of model B´ indicated that the standardised path coefficients for eight paths were significant and with the expected sign. Among these eight paths, the path of "Brand Association → Willingness to Enrol" was significant in model B´ (but with a weak coefficient value of 0.143, smaller than the benchmark 0.20) (Chin 1988a). The next section discusses the effect sizes in model B´.

Table 5-27. Quality of the model: Reviewing path coefficients and their significant levels

Paths			Coefficients	t-values[+]	p-values of one-tailed test
Brand Awareness	→	Brand Association	0.02514	0.39605	*n.s.*
Brand Awareness	→	Perceived Quality	0.03847	0.93243	*n.s.*
Brand Association	→	Perceived Quality	0.58062	9.49550	$p < 0.001$
Brand Awareness	→	Brand Loyalty	0.01721	0.15322	*n.s.*
Brand Association	→	Brand Loyalty	0.32647	3.06221	$p \approx 0.001$
Perceived Quality	→	Brand Loyalty	0.31447	3.16566	$p \approx 0.001$
Brand Awareness	→	Willingness to Enrol	0.04434	0.55732	*n.s.*
Brand Association	→	Willingness to Enrol#	0.14282	1.38532	$p \approx 0.083$
Perceived Quality	→	Willingness to Enrol	-0.06324	0.50186	*n.s.*
Brand Loyalty	→	Willingness to Enrol	0.18247	1.73318	$p \approx 0.042$
Brand Awareness	→	Willingness to Recommend	-0.07252	1.68661	$p \approx 0.046$
Brand Association	→	Willingness to Recommend	-0.00756	0.16541	*n.s.*
Perceived Quality	→	Willingness to Recommend	0.02700	0.65067	*n.s.*
Brand Loyalty	→	Willingness to Recommend	0.95336	39.34687	$p < 0.001$
Brand Awareness	→	Willingness to Pay More	0.08153	0.77391	*n.s.*
Brand Association	→	Willingness to Pay More	0.20413	2.18914	$p \approx 0.015$
Perceived Quality	→	Willingness to Pay More	-0.01735	0.18366	*n.s.*
Brand Loyalty	→	Willingness to Pay More	0.49827	6.26548	$p < 0.001$

[+]t-values were obtained by running bootstrapping procedure with 500 resamples
a new statistically significant path in model B´

5.5.6.3 Evaluate the effect sizes, f^2 – Model B´

This section discusses effect sizes, f^2 in model B´ (Cohen, 1988), another measure for evaluating the quality of inner model. The effect size, f^2 should be applied whenever an endogenous variable has multiple exogenous variables. Further analysis can then be undertaken to evaluate the impact of each particular exogenous variable on its corresponding endogenous variable by evaluating the change in R^2 (Henseler et al. 2009; Chin 2010; Götz et al. 2010). As a rule of thumb, it is suggested that the f^2 values of 0.02, 0.15, or 0.35 for exogenous variable could be described as small, medium, or large effect on the corresponding endogenous variables (Cohen, 1988, p.413; Chin 1998b, p.316, 2010; Henseler et al., 2009; Götz et al., 2010; Hair et al., 2014, p.196).

Table 5-28 summarises the calculated results of f^2. For those eight paths that had been identified as significant in Table 5-27, the results of effect sizes indicated that the

exogenous variable "Brand Loyalty" had exceptionally an large impact on the endogenous variable "Willingness to Recommend"; a medium to large influence on the endogenous variable "Willingness to Pay More"; and a small influence on the endogenous variable "Willingness to Enrol". In addition, the exogenous variable "Brand Association" also had a very large influence on the endogenous variable "Perceived Quality"; and a small to medium influence on the endogenous variable of "Brand Loyalty"; and a small influence on the endogenous variables of "Willingness to Enrol" and "Willingness to Pay More". Furthermore, the exogenous variable "Perceived Quality" also had a small to medium influence on the endogenous variable "Brand Loyalty". When compared with model A, the results indicated that model B´ had one additional significant path; that is, "Brand Association → Willingness to Enrol"; however, it was concluded that "Brand Association" had a only small effect size on "Willingness to Enrol" ($f^2 = 0.01306$).

In summary, from the results of the effect sizes for the eight statistically significant paths, clearly, it can be concluded that the latent variables of "Brand Association" had a very large effect on "Perceived Quality"; and "Brand Loyalty" had an exceptionally large influence on "Willingness to Recommend". Moreover, the effect sizes results indicated that "Brand Loyalty" had a moderate to large impact on "Willingness to Pay More". In addition, the effect size of "Brand Association to Brand Loyalty" was considered as small to medium. However, in the other four statistically significant paths, that is, 'Perceived Quality to Brand Loyalty", "Brand Loyalty to Willingness to Enrol", "Brand Association to Willingness to Enrol" and "Brand Association to Willingness to Pay More", the exogenous variables had small influences on the endogenous variables. Except for a new additional path found in model B´ (that is, "Brand Association → Willingness to Enrol"), all other seven statistically significant paths' effect size were essentially the same as in model A. The next section evaluates the predictive validity of the model.

Table 5-28. Evaluation of variance explained – effect Size f^2 for exogenous variables

Endogenous Variables	Exogenous Variables	$R^2_{included}$	$R^2_{excluded}$	f^2	Effect
Perceived Quality	Brand Awareness	0.33973	0.33806	0.00253	-
	Brand Association[+]	0.33973	0.00287	0.51019	Very large
Brand Loyalty	Brand Awareness	0.32605	0.32572	0.00049	-
	Brand Association[+]	0.32605	0.25704	0.10240	Small to medium
	Perceived Quality[+]	0.32605	0.26140	0.09593	Small
Willingness to Enrol	Brand Awareness	0.06476	0.06277	0.00213	-
	Brand Association[+]	0.06476	0.05255	0.01306	Very small*
	Perceived Quality	0.06476	0.06214	0.00280	-
	Brand Loyalty[+]	0.06476	0.04251	0.02379	Small
Willingness to Recommend	Brand Awareness	0.92736	0.92212	0.07214	-
	Brand Association	0.92736	0.92734	0.00028	-
	Perceived Quality	0.92736	0.92693	0.00592	-
	Brand Loyalty[+]	0.92736	0.31362	8.44906	Exceptional large
Willingness to Pay More	Brand Awareness	0.39184	0.38523	0.01087	-
	Brand Association[+]	0.39184	0.36677	0.04122	Small
	Perceived Quality	0.39184	0.39141	0.00071	-
	Brand Loyalty[+]	0.39184	0.22484	0.27460	Medium to large

[+] The corresponding path coefficients were identified as significant in Table 5-27

* a new statistically significant path in model B´

5.5.6.4 Evaluate the predictive relevance, Q^2 and q^2 – Model B´

This section discusses the measure for evaluating the predictive relevance of the model B´.

As discussed previously, Stone-Geisser's Q^2 is used to evaluate the structural model's predictive ability (Henseler et al. 2009; Chin 2010). If the value of Q^2 is larger than zero, it indicates the model has predictive ability; otherwise negative values indicate that the model lacks predictive relevance (Tenenhaus et al. 2005; Henseler et al. 2009; Chin 2010; Götz et al. 2010; Ringle et al. 2010; Hair et al. 2011, 2014). A Q^2 value significantly above 0 demonstrates that an exogenous variable has high predictive ability (Ringle et al. 2010).

Table 5-29 shows the values of Q^2 with three different omission distances, in which the Q^2 value for the endogenous variable "Brand Association" with omission distance 7 was negative. Even though the Q^2 values were positive with two other omission distances, their magnitudes were close to zero. As a result, the endogenous variable "Brand Association"

failed to demonstrate predictive relevance in model B´. The other five endogenous variables, on the contrary, had Q^2 values larger than zero, and therefore fulfilled the requirement for predictive relevance.

In short, when compared with the predictive relevance results of model A in table 5-17, model B´ was less conclusive in terms of predictive relevance as it indicated that one endogenous variable, Brand Association, lacked predictive ability in model B´. The relative impact of the predictive relevance of model B´ will be discussed in the next section.

Table 5-29. Evaluation of predictive relevance: Cross-validated redundancy Q^2

Endogenous Variables	Q^2		
	$D = 7$	$D = 37$	$D = 67$
Brand Association	-0.00052	0.00046	0.00075
Perceived Quality	0.20250	0.20145	0.20226
Brand Loyalty	0.32697	0.32498	0.32641
Willingness to Enrol	0.08146	0.06601	0.05825
Willingness to Recommend	0.89284	0.92552	0.92460
Willingness to Pay More	0.39513	0.38954	0.39229

As mentioned, the relative impact of the predictive relevance of the model can be evaluated by the q^2 values. The q^2 values of 0.02, 0.15, or 0.35 for exogenous variables suggest a small, medium, or large predictive relevance of the corresponding endogenous variables (Henseler et al. 2009; Chin 2010). The same omission distances were used for the calculation of q^2, and results are summarised in Table 5-30. Again, the eight paths identified as significant in Table 5-27 were evaluated and the result was similar to the interpretation of f^2, with one exception, which is explained and highlighted below in bracket.

The latent variable "Brand Loyalty" has exceptionally large predictive relevance to the endogenous variable "Willingness to Recommend"; a medium to large predictive relevance to the endogenous variable "Willingness to Pay More"; and a small predictive relevance to "Willingness to Enrol". The exogenous variable "Brand Association" had a medium to large predictive relevance here to the endogenous variables "Perceived Quality" (this result is different from the findings in model A, where this path was found to have a very large effect size and predictive relevance impacts in model A in which $f^2 = 0.86074$; and q^2 (where $D = 7, 37, 67) = 0.88226, 0.86418, 0.85207$; and it was found to have a large effect size and medium to large predictive relevance impacts in model B´in which $f^2 = 0.51019$; and q^2 (where $D = 7, 37, 67) = 0.25197, 0.25055, 0.25185$). Similar to the results in model A, the exogenous variable "Brand Association" had a small to medium predictive relevance to the endogenous variables "Brand Loyalty", and small predictive relevance to "Willingness to Enrol" and "Willingness to Pay More" in model B´. The exogenous variable "Perceived Quality" also had a small predictive relevance to "Brand Loyalty". The next section discusses the Goodness-of-Fit measures of the overall model B´.

Table 5-30. Evaluation of predictive relevance: q^2 for exogenous variables

Endogenous Variables	Exogenous Variables	q^2			Impact
		$D = 7$	$D = 37$	$D = 67$	
Perceived Quality	Brand Awareness	0.00876	-0.00172	0.00238	-
	Brand Association[+]	0.25197	0.25055	0.25185	Medium to large
Brand Loyalty	Brand Awareness	0.01685	-0.00650	0.00503	-
	Brand Association[+]	0.09187	0.10492	0.10160	Small to medium
	Perceived Quality[+]	0.10530	0.09502	0.09430	Small
Willingness to Enrol	Brand Awareness	0.00136	0.01080	0.00357	-
	Brand Association[+]	0.05093	0.01362	0.01175	Small
	Perceived Quality	0.00410	0.00337	0.00024	-
	Brand Loyalty[+]	0.02197	0.03183	0.02508	Small
Willingness to Recommend	Brand Awareness	-0.22574	0.09076	0.03395	-
	Brand Association	-0.20661	-0.03034	-0.04589	-
	Perceived Quality	-0.04890	-0.00765	-0.02745	-
	Brand Loyalty[+]	5.39044	8.11372	8.17613	Exceptionally Large
Willingness to Pay More	Brand Awareness	0.03080	0.00908	0.01280	-
	Brand Association[+]	0.04155	0.03850	0.03959	Small
	Perceived Quality	-0.00081	0.00093	0.00489	-
	Brand Loyalty[+]	0.28409	0.26719	0.28372	Medium to large

[+] The corresponding path coefficients were identified as significant in Table 5-27

5.5.7   Evaluate the overall model, Goodness-of-fit (GoF) index – Model B´

After evaluating the model performance of both the measurement and structural models, this section discusses the GoF index as a criterion for validating the overall predictive performance of model B´ (Tenenhaus et al. 2005; Durate and Raposo 2010; Götz et al. 2010; Vinzi et al. 2010). Wetzels et al. (2009) suggest the GoF values of 0.1, 0.25, or 0.36 could be described as small, medium, or large predictive performance for validating the overall PLS model. Table 5-31 shows the values of communality and R^2 of each latent variable, the average of these two indices and the calculated results of GoF for model B´. The GoF value for model B´ was 0.55504, which exceeded the benchmark value of 0.36 of large predictive performance. Thus, it could be concluded that the model B´ performed very well compared to the baseline values suggested by Wetzels et al. (2009) above; and it can be further concluded that the model was also a good model as it was able to account for 55.5% of the achievable fit. Nevertheless, the GoF index of model A proved to be better (at 0.58233, or 58.23%).

Table 5-31. Evaluation of Goodness of Fit (GoF)

Latent Variables	Communality	R^2
Brand Awareness	1.00000	-
Brand Association	0.69183	0.00063
Perceived Quality	0.61877	0.33973
Brand Loyalty	1.00000	0.32605
Willingness to Enrol	1.00000	0.06476
Willingness to Recommend	1.00000	0.92736
Willingness to Pay More	1.00000	0.39184
Average	**0.90151**	**0.34173**

$$GoF = \sqrt{0.90151 \times 0.34173} = 0.55504$$

5.5.8 Comparison between models A and B´

The previously discussed findings on the evaluation of measurement models and structural models of models A and B´ showed that models passed the validation assessment of the respective measurement models. For the subsequent evaluation of the quality of both structural models of both models, A and B´, five essential criteria were used.

Firstly, the results of the coefficient of determination R^2 indicated that model A (46.27%) had a larger R^2 value in explaining the perceived quality construct than model B´ (33.97%); and it was noted that the R^2 value of the brand loyalty construct was slightly larger in model B´ (32.61%) than in model A (28.36%), while the R^2 values for the other endogenous variables were similar in both models. Secondly, model A and model B´ had seven and eight statistically significant paths respectively in predicting the causal relationships of the inner models; however, the additional statistically significant path in model B´, that is "Brand Association to Willingness to Enrol", had a small magnitude value ($\beta = 0.14282$, $t = 1.38532$, $p < 0.10$) which indicated a relatively weak causal relationship. Chin (1998a) suggests the value of path coefficients should be at least 0.20. Thirdly, the results of the effect sizes f^2 of exogenous variable "Brand Association" on the endogenous variable "Perceived Quality" was better in model A than in model B´, in that this path was found to have a very large effect size in model A ($f^2 = 0.86074$) and larger than in model B´ ($f^2 = 0.51019$), while the impact of the effect sizes f^2 (small, medium or large) of other comparable significant paths of both model A and B´ were found to be the same. Fourthly, the predictive relevance tests were found to be better in model A than model B´. In particular, all values of Q^2 with three different omission distances in model A were larger than 0, which indicated that the inner model demonstrated acceptable predictive relevance, whereas in model B´, one Q^2 value was negative, indicating that the model lacked predictive relevance compared with model A. Finally, the fifth criterion, the

Goodness-of-Fit index was used in validating the PLS models globally. Both the GoF values for models A and B´ exceeded the benchmark value of 0.36 for large prediction performance and, as such, both proved to be very good models. Nevertheless, the GoF index of model A was proved to be higher (GoF = 0.58233, or 58.23%) than the model B´ (GoF = 0.55504 or 55.5%).

In conclusion, the GoF indices for both models A (58.23%) and B´ (55.5%) were higher than the benchmark value of 0.36, which demonstrates that both models were valid and very good models with large overall predictive performance. Nevertheless, the findings indicated that model B´ did not produce the expected statistical improvement over Model A in terms of various assessments of the measurement, structural and overall models. The GoF index of model B´ dropped nearly 3% over model A. In terms of their performance on variance explained, predictive relevance and overall predictive performance, model A was better than model B´. Thus, the hypotheses evaluation was employed using the results of model A and the results are presented in the next section.

5.5.9 Evaluate Hypothesis test results of direct effects of path model

As explained previously, the statistical findings for the structural model of model A were used to evaluate the 18 hypotheses proposed earlier and this section presents the results for the hypothesis testing. Table 5-32 summarises the findings of the standardised path coefficients (β), effect size (f^2), and the relative predictive relevance (q^2), of each hypothesised path in Model A. Figure 5-4 presented graphically the standardised path coefficients with their significance levels and the coefficients of determination (R^2), of all the endogenous variables.

Hypotheses H1 to H6 were used to examine if customers' brand awareness has a positive impact on different aspects including brand association, perceived quality, brand loyalty, as well as customers' willingness to enrol in a CE program of their favourite institution, their willingness to recommend a CE program of their favourite institution to others, and their willingness to pay higher fees for a CE program from their favourite institution respectively. However, from the statistical results, the standardised path coefficients and p-values associated with H1, H2, H3, H4 and H6 were not statistically significant, and thus these hypotheses could not be accepted. For H5, although the corresponding standardised path coefficient and p-value were statistically significant, the sign of the path coefficient was negative, which is contrary to the statement of H5, and therefore H5 also failed to demonstrate that customers' brand awareness has a positive impact on willingness to recommend a CE program of their favourite institution to others.

Table 5-32. Standardized path coefficients, effect size (f^2), and q^2 for each path in Model A

H.	Exogenous Variables	Endogenous Variables	Std. Path Coeff.	p-values of one-tailed test	f^2	q^2 (D = 7)
H1	Brand Awareness	Brand Association	0.02405	n.s.	0.00058 (R^2)	0.00070 (Q^2)
H2	Brand Awareness	Perceived Quality	-0.00514	n.s.	0.00015	0.04248
H3	Brand Awareness	Brand Loyalty	0.03096	n.s.	0.00134	-0.00281
H4	Brand Awareness	Willingness to Enrol	0.04282	n.s.	0.00196	-0.01635
H5	Brand Awareness	Willingness to Recommend	-0.07153	$p \approx 0.039$	0.07007	-0.22604
H6	Brand Awareness	Willingness to Pay More	0.08124	n.s.	0.01082	0.03503
H7	Brand Association	Perceived Quality	0.68029	$p < 0.001$	0.86074	0.88226
H8	Brand Association	Brand Loyalty	0.36570	$p \approx 0.001$	0.10027	0.09208
H9	Brand Association	Willingness to Enrol	0.09717	n.s.	0.00491	0.07858
H10	Brand Association	Willingness to Recommend	-0.00683	n.s.	0.00027	-0.23569
H11	Brand Association	Willingness to Pay More	0.19517	$p \approx 0.019$	0.03059	0.03473
H12	Perceived Quality	Brand Loyalty	0.20965	$p \approx 0.031$	0.03103	0.03475
H13	Perceived Quality	Willingness to Enrol	0.02727	n.s.	0.00037	0.00994
H14	Perceived Quality	Willingness to Recommend	0.01708	n.s.	0.00192	-0.03567
H15	Perceived Quality	Willingness to Pay More	0.00317	n.s.	0.00074	0.00577
H16	Brand Loyalty	Willingness to Enrol	0.16142	$p \approx 0.070$	0.01989	0.00142
H17	Brand Loyalty	Willingness to Recommend	0.95875	$p < 0.001$	9.03908	5.95335
H18	Brand Loyalty	Willingness to Pay More	0.49278	$p < 0.001$	0.28558	0.28725
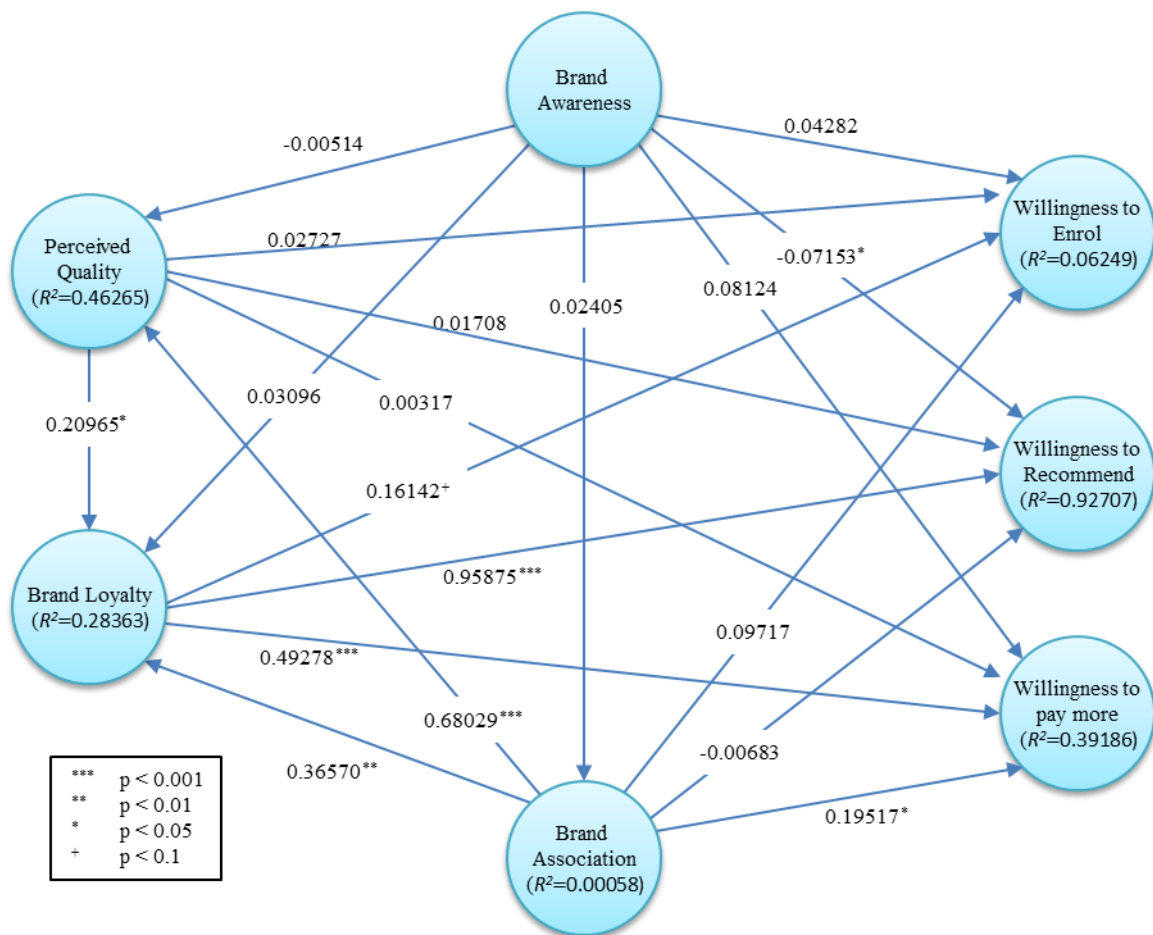
Figure 5-4. Standardised path coefficients and significant level for Model A

Hypotheses H7 to H11 were used to examine if customers' brand associations had positive impacts and predictive relevance to perceived quality, brand loyalty, willingness to enrol in a CE program of their favourite institution, willingness to recommend a CE program of their favourite institution to others, and willingness to pay higher fees for a CE program of their favourite institution respectively. Two paths, "Brand Association to Willingness to Enrol", and "Brand Association to Willingness to Recommend", were found to be statistically insignificant, and thus they both failed to support hypotheses H9 and H10. On the other hand, the paths of "Brand Association to Perceived Quality" (H7, $\beta = 0.6829$, $p < 0.001$), "Brand Association to Brand Loyalty" (H8, $\beta = 0.36570$, $p \approx 0.001$), and Brand Association to Willingness to Pay More" (H11, $\beta = 0.19517$, $p \approx 0.019$), were found to be statistically significant, and the results indicated the brand association had different levels

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of influence on, and predictive relevance to, corresponding dependent variables. At such, from the statistical results, brand association was found to have a very large influence and relative predictive relevance to perceived quality ($f^2 = 0.86074$ and q^2 (where $D=7$) = 0.88226); to have a small to medium influence and relative predictive relevance to brand loyalty ($f^2 = 0.10027$ and q^2 (where $D=7$) = 0.09208); also to have a small influence and relative predictive relevance to the willingness to pay more fees for a CE program from a favourite institution ($f^2 = 0.03059$ and q^2 (where $D=7$) = 0.03473).

Hypotheses H12 to H15 were used to evaluate if perceived quality had positive impacts and predictive relevance to brand loyalty, willingness to enrol in a CE program of their favourite institution, willingness to recommend a CE program of their favourite institution to others, and willingness to pay higher fees for a CE program of their favourite institution. It was noted that only the path of "Perceived Quality to Brand Loyalty" (H12, $\beta = 0.20965$, $p \approx 0.031$), was found statistically significant and perceived quality had a small influence and predictive relevance to brand loyalty ($f^2 = 0.03103$ and q^2 (where $D=7$) = 0.03475). The results of the paths testing for H13 to H15, however, were found to be not significant and thus failed to conclude that perceived quality had any positive impact on customers' willingness to enrol, recommend or pay more fees for a CE program of their favourite institution.

Hypotheses H16 to H18 were used to evaluate if brand loyalty was positively related to willingness to enrol in a CE program of their favourite institution, willingness to recommend a CE program of their favourite institution to others, and willingness to pay higher fees for a CE program of their favourite institution. The results indicated that all three hypotheses; that is "Brand Loyalty to Willingness to Enrol" (H16, $\beta = 0.16142$, $p \approx$ 0.070), "Brand Loyalty to Willingness to Recommend" (H17, $\beta = 0.95875$, $p < 0.001$), and

"Brand Loyalty to Willingness to Pay More" (H18, $\beta = 0.49278$, $p < 0.001$), were found to be statistically significant. Furthermore, brand loyalty had an exceptionally large influence and predictive relevance to the willingness to recommend a CE program of their favourite institution to others ($f^2 = 9.03908$ and q^2 (where $D=7$) = 5.95335); a medium to large influence and predictive relevance to the willingness to pay higher fees ($f^2 = 0.28558$ and q^2 (where $D=7$) = 0.28725); and a relatively small influence and predictive relevance to willingness to enrol ($f^2 = 0.01989$ and q^2 (where $D=7$) = 0.00142).

In summary, the findings confirmed seven hypotheses of direct causal relationships of the research model. In contrast, eleven hypotheses (including one hypothesis which was found to be statistically significant but in a negative direction) were rejected. The next section examines the mediating hypotheses in the model.

5.5.10 Mediation effect testing

According to Henseler et al. (2009), after the direct effects of the hypothesised path model are assessed, the mediating effects should then be analysed. This section discusses the mediating effects in the model.

As discussed previously, all the previous evaluations were focused on the direct effects from independent variables to dependent variables. However, it may be possible that some effects were mediated by other variables, so as to affect the significant direct path relationship between exogenous and endogenous latent variables. That is, the mediator variable may absorb partly or entirely the significant direct path effect, if the mediator is included in the model.

According to Baron and Kenny (1986), a given variable may be act as a mediator (*M*) between an independent variable *(A)* and dependent variable *(B)* when it meets the following conditions:

1. The path coefficient for variable *A* and *M* must be significant;

2. The path coefficient for variable *M* and *B* must be significant when variable *A* is included; and,

3. The path coefficient for variable *A* and *B* must be significant when variable *M* is not included.

If the three conditions are fulfilled, the next step is to examine the significance and the strength of the mediation effects. To achieve this, the Sobel Test (Sobel, 1982), has been a commonly accepted approach for testing mediating effects (Hair et al. 2014). Based on the results provided by the reports generated in SmartPLS version 2.0M3, all required data were input and calculated using a Sobel test calculator (Preacher and Leonardelli 2014) and the results are shown in Table 5-34. Hair et al. (2014, p.223-225), however, argued that the Sobel test relies on a normal distribution assumption, which is not required in PLS models. Moreover, another requirement for the Sobel test is to use unstandardised path coefficients as input which is considered to lack statistical power. Thus, another method was proposed by Hair et al. (2014) to evaluate the significance level of indirect effects which is perfectly suited for the PLS path model and demonstrates higher levels of statistical power than in the Sobel test, that is, by using bootstrapping and variance accounted for (VAF) to determine the size of the indirect effect, in which to describe the strength of mediation effect. If the values of VAF exceed 80%, it can be claimed as full mediation; if the values of VAF are between 20% and 80%, it could be considered as partial mediation; otherwise, that is where VAF is less than 20%, no mediation is assumed. In this study, both the Sobel test (1982) and the bootstrapping and VAF procedures as

suggested by Hair et al. (2014, p.226-229) were performed to evaluate the significance levels of mediation effects. A total of 500 resamples were used in executing the bootstrapping procedure (Mooney and Duval 1993; Henseler et al. 2009; Henseler and Chin 2010; Temme et al. 2010).

As previously mentioned, in order to examine if there is any mediator effects in the model, requires, firstly, to identify which paths have significant direct effects without including mediator variable in the model by conducting the bootstrapping procedure. Figure 5-5 shows a sub-graph of model A, which highlights all the significant paths with direct effects in model A and by removing the insignificant paths in model A, it is easier to identify potential paths that may have mediation effects. Secondly, the paths *A* to *M* and *M* to *B* must be significant when including a mediator variable. Collectively, these are the requisite conditions in examining the mediator effect.
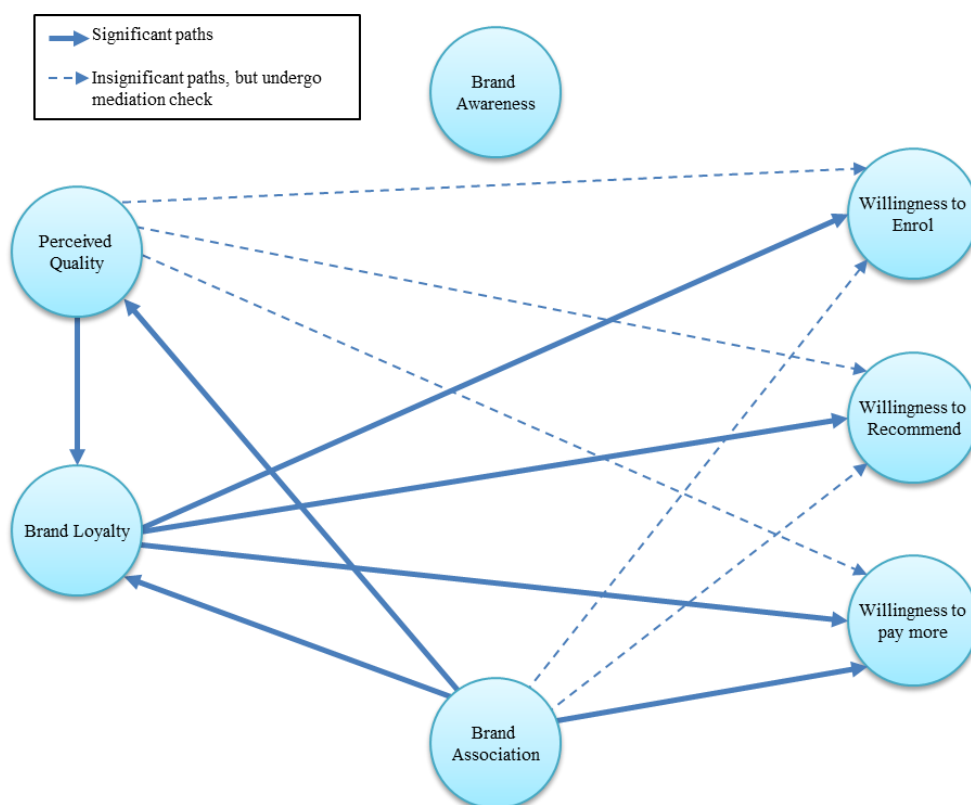
Figure 5-5. Sub-graph of model A, showing paths with potential mediation effects

From figure 5-5, firstly, it was observed that "Perceived Quality" may have a mediation effect between "Brand Association" and "Brand Loyalty" because both paths, "Brand Association" to "Perceived Quality", and "Perceived Quality" to "Brand Loyalty", were significant. Secondly, "Brand Loyalty" may have a mediation effect between "Brand Association" and "Willingness to Pay More".

On the other hand, similarly, five insignificant paths were showed as dashed in figure 5-5, might be affected by mediation, in that all of them might be mediated by "Brand Loyalty". Thus, "Brand Loyalty" may have mediation effects between 1. "Brand Association" and "Willingness to Enrol"; 2. "Brand Association" and "Willingness to Recommend"; 3. Perceived Quality" and "Willingness to Enrol; 4. "Perceived Quality" and "Willingness to Recommend"; and, 5. "Perceived Quality" and "Willingness to Pay More". For example, even though the path "Perceived Quality" to "Willingness to Enrol" was not significant, both paths, "Perceived Quality" to "Brand Loyalty", and "Brand Loyalty" to "Willingness to Enrol", were significant and therefore also fulfil the first two preconditions of mediation effects. Thus, altogether these seven paths were identified for further mediation tests.

Having identified seven paths for mediation testing, the next step was to check if any of these seven paths fulfilled the third condition by artificially removing the potential mediator from the model and checking if any path (2 paths were significant and 5 paths were insignificant) was still significant or which, from insignificant, become significant. Evaluation results were presented in Table 5-33 and it indicates that four paths had significant results after the potential mediator was removed. In conclusion, all those four paths fulfilled the three pre-requisite conditions of mediation effects. Next, the strength of

the mediation effect of those four paths was examined by using indirect effect and VAF methods (Hair et al. 2014).

Table 5-33. Mediation check – path coefficients and *t*-values after potential mediator was removed from the model

Independent variables	Potential Mediators	Dependent Variables	Path Coeff.	*t*-values[+]
Brand Association	Perceived Quality	Brand Loyalty	0.50967[***]	6.81226
Brand Association	Brand Loyalty	Willingness to Enrol	0.15635	1.18147
Brand Association	Brand Loyalty	Willingness to Recommend	0.34191[**]	2.78222
Brand Association	Brand Loyalty	Willingness to Pay More	0.37621[***]	3.84724
Perceived Quality	Brand Loyalty	Willingness to Enrol	0.06097	0.43288
Perceived Quality	Brand Loyalty	Willingness to Recommend	0.21927[*]	1.81172
Perceived Quality	Brand Loyalty	Willingness to Pay More	0.10582	0.97465

[+] *t*-values were obtained by running bootstrapping procedure with 500 resamples
[***] $p < 0.001$; [**] $p < 0.01$; [*] $p < 0.05$

Next, having identified the potential paths that might have a mediator effect, the indirect effect (bootstrapping procedure) and values of VAF have to be calculated, in order to examine the strength of mediator effect. The indirect effect aims to examine if there is any possible mediator effects of the path relationship between exogenous and endogenous latent variables. Only if the indirect effect is significant, does it prove that the mediator effect exists in the path (Hair et al. 2014).

According to Hair et al. (2014), the indirect effect of path from *A* to *B* via the mediator *M* is the value of path coefficients from A to M, multiplied by the value of path coefficient from M to B. ; The *t*-value of the study was based on the standard error of the indirect effect of 500 resamples from the bootstrapping procedure; and the values of VAF illustrates the size of the indirect effect to the total effect. The formula for VAF (Hair et al. 2014, p.225) is:

$$\text{VAF} = \frac{Indirect\ Effect}{Direct\ Effect + Indirect\ Effect} = \frac{p_{AM} \times p_{MB}}{p_{AB} + p_{AM} \times p_{MB}}$$

where

p_{AB}= path coefficient of path from A to B

p_{AM}= path coefficient of path from A to M

p_{MB}= path coefficient of path from M to B

The results of all these mediator tests are summarised in Table 5-34 and shown in Figure 5-6. From the findings, it can be concluded that the *p*-values for the Sobel test and the *p*-values of the indirect effect and the values of VAF were very similar in magnitude, and both set of *p*-values indicated that all paths had significant indirect or mediation effects. Based on the values of VAF, the paths "Brand Association" to "Willingness to Recommend", and "Perceived Quality" to "Willingness to Recommend" were fully mediated by latent variable "Brand Loyalty", as both VAF values were larger than 0.8. Furthermore, the path between "Brand Association" and "Brand Loyalty" was partially mediated by "Perceived Quality" (VAF = 0.28058), and the path between "Brand Association" and "Willingness to Pay More" was also partially mediated by "Brand Loyalty" (VAF = 0.48007).

Table 5-34. Mediation check – evaluate significant level and strength of mediation effect

Paths (IV-mediator-DV)	Indirect Effect			VAF	*p*-value for Sobel Test
	value	*t*-values	*p*-values		
Brand Association-Perceived Quality-Brand Loyalty	0.14262[+]	1.85870	0.06366	0.28058	0.06355
Brand Association-Brand Loyalty-Willingness to Recommend	0.35061[**]	3.07446	0.00222	1.01987	0.00189
Brand Association-Brand Loyalty-Willingness to Pay More	0.18021[**]	2.87996	0.00415	0.48007	0.00483
Perceived Quality-Brand Loyalty-Willingness to Recommend	0.20100[+]	1.89110	0.05919	0.92168	0.06135

[**] $p < 0.01$; [+] $p < 0.1$

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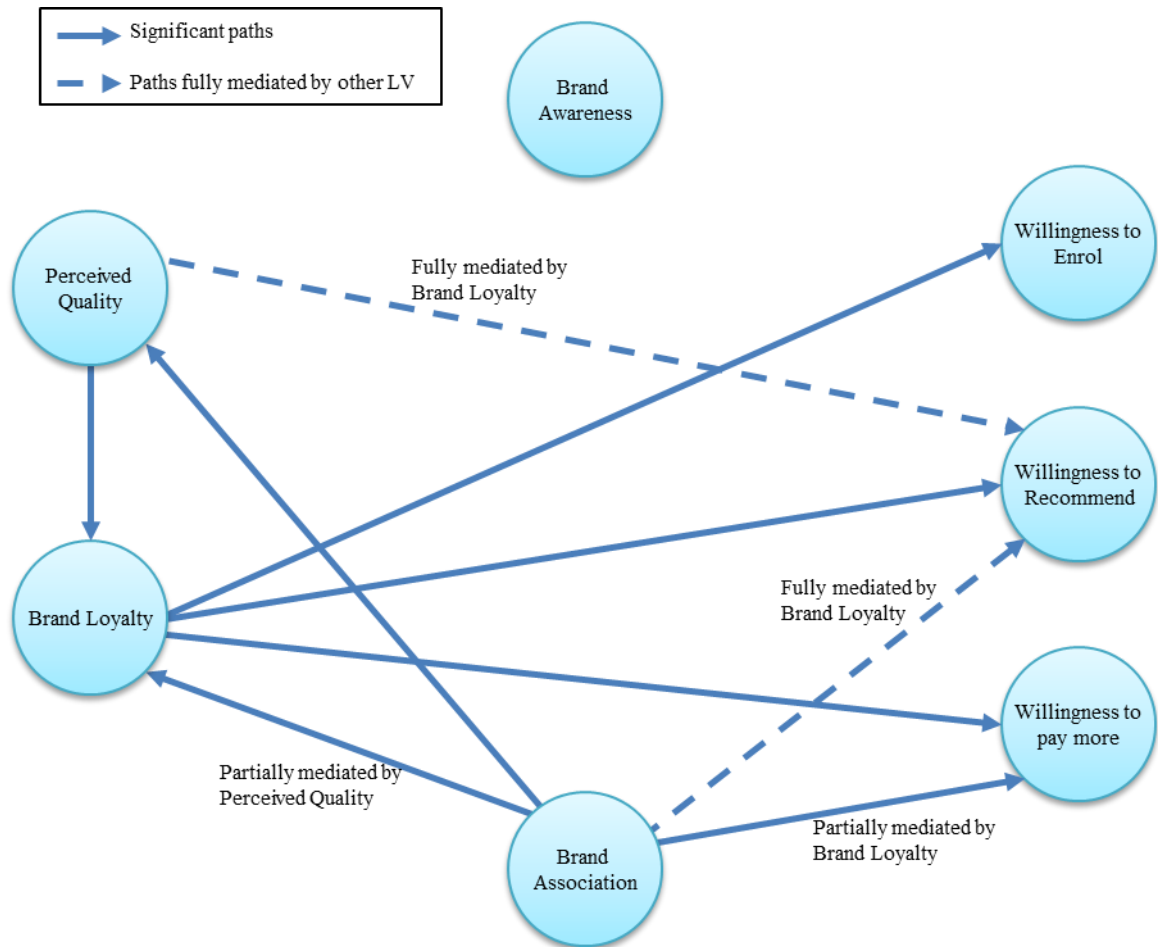
Figure 5-6. Sub-graph of model A, showing significant paths and four paths with mediation effects

On top of the above, another finding, a suppressor effect, was found on the path "Brand Association" to "Willingness to Recommend". Without including the mediator variable "Brand Loyalty", the standardised path coefficient of the path "Brand Association" to "Willingness to Recommend" was 0.34191; while the path coefficient was changed to negative (-0.00683) when the mediator was included. This kind of situation was called a suppressor effect and refers to the sign change of the direct relationship between independent and dependent variables after the mediator had been included. If a suppressor effect occurs, the path should be described as fully mediated by the mediator variable (Hair et al. 2014). Table 5-35 presents the final results of testing the hypotheses of the model.

Table 5-35. Final results of testing the hypotheses of the model

H.	Exogenous Variables	Endogenous Variables	Std. Path Coeff. β	Mediation				Results
				Mediator	Std. Path Coeff. β Without mediator	Indirect Effect via mediator	VAF	
H1	Brand Awareness	Brand Association	0.02405					Rejected
H2	Brand Awareness	Perceived Quality	-0.00514					Rejected
H3	Brand Awareness	Brand Loyalty	0.03096					Rejected
H4	Brand Awareness	Willingness to Enrol	0.04282					Rejected
H5	Brand Awareness	Willingness to Recommend	-0.07153**					Rejected (incorr. Sign)
H6	Brand Awareness	Willingness to Pay More	0.08124					Rejected
H7	Brand Association	Perceived Quality	0.68029***					**Supported**
H8	Brand Association	Brand Loyalty	0.36570**	Perceived Quality	0.50967***	0.14262+	0.28058	**Supported and partial mediated by Perceived Quality**
H9	Brand Association	Willingness to Enrol	0.09717					Rejected.
H10	Brand Association	Willingness to Recommend	-0.00683	Brand Loyalty	0.34191**	0.35061**	1.01987	**Supported as fully mediated by Brand Loyalty**
H11	Brand Association	Willingness to Pay More	0.19517*	Brand Loyalty	0.37621***	0.18021**	0.48007	**Supported and partial mediated by Brand Loyalty**
H12	Perceived Quality	Brand Loyalty	0.20965*					**Supported**
H13	Perceived Quality	Willingness to Enrol	0.02727					Rejected
H14	Perceived Quality	Willingness to Recommend	0.01708	Brand Loyalty	0.21927*	0.20100+	0.92168	**Supported as fully mediated by Brand Loyalty**
H15	Perceived Quality	Willingness to Pay More	0.00317					Rejected
H16	Brand Loyalty	Willingness to Enrol	0.16142+					**Supported**
H17	Brand Loyalty	Willingness to Recommend	0.95875***					**Supported**
H18	Brand Loyalty	Willingness to Pay More	0.49278***					**Supported**

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; +$p < 0.1$

This section confirmed that mediation effects exist in the model and four paths proved to be mediated by the mediator variables, in which two paths were partially and the other two paths were fully mediated. Due to the mediator effects, hypotheses number 10 ("Brand Association to "Willingness to Recommend") and number 14 ("Perceived Quality to Willingness to Recommend") were fully mediated by the mediator variable ("Brand Loyalty"). Thus these two paths were found not significant in the evaluation of direct path relationships, and later proved to be significant in the mediation tests. The findings thus confirmed that nine hypotheses were supported and nine hypotheses (of which 6 hypotheses were related to brand awareness construct) were rejected in the model. The next section presents the chapter summary.

5.6   Chapter summary

This chapter has presented data analysis and findings of the study. Firstly, it provided the findings on the descriptive data analysis of Hong Kong continuing education industry, which was not publically available and which provided relevant information on the background and characteristics of the industry. Secondly, adopted from Moran (1993, 1994) model, the valuation of the financial brand equity of the Hong Kong continuing education was presented. The brand equity valuation for the major CE institutions and the overall industry were calculated. Thirdly, using a PLS path modelling approach, a customer-based brand equity model was presented and tested. This discussion included the consecutive steps in preparing the data for analysis and conducting different methods in evaluating the quality of the measurement and structural models of the study, as well as examining the mediation effects in the model. Based on the results of the comprehensive tests on the measurement and structural models, the research model proved to have a high level of reliability and validity, and demonstrated overall model fit with a high level of predictive

performance. The overall conclusion was that the research model was confirmed to be a good model which demonstrated a high level of predictive ability between the causal relationship between the exogenous and endogenous variables. The next chapter presents the discussion, contributions and managerial implications, limitations and directions for future research, and conclusions of the study.

Chapter 6 Discussion

6.1 Introduction

The overall objectives of this study were to measure the customer-based brand equity and financial brand equity of the Hong Kong continuing education (CE) industry and of its key players. In order to achieve these objectives, firstly, a financial brand equity model, adapted from a model developed by Moran (1993, 1994) which was used to measure the financial brand equity of the Hong Kong CE industry and the major CE institutions. The results were presented in Chapter 5. Secondly, drawing on Aaker (1991) and Keller's (1993, 2003) brand equity models, which adopt a consumer perspective, a customer-based brand equity model of the Hong Kong CE industry was constructed to examine the causal interrelationships of the four dimensions of the construct of brand equity and their subsequent impact on customers' behavioural intentions and willingness to pay a premium price for a CE programme. The results of the customer-based PLS brand equity model were presented in Chapter 5. From the results, the research model was proved to be a satisfactory model with good predictive performance. A total of nine (out of a possible eighteen) research hypotheses were confirmed by the PLS brand equity model in this study. Based on the research results, this chapter discusses the interpretation of the results, its contributions and practical implications, followed by limitations and directions for future research, and a conclusion of the study.

6.2 Discussion of main study results

6.2.1 Financial brand equity model

As outlined previously, adapted from the Moran (1993, 1994) model, a proposed financial brand equity model was operationalised in the study. The model utilises a financial

perspective to calculate total brand equity of Hong Kong CE institutions. The total brand equity calculated by the Moran (1993, 1994) model is a product of three items: the market share of a company or a brand, the relative price of a company and durability. However, Moran (1993, 1994) did not indicate clearly how to calculate the durability, nor did he clearly define "relative unit volume change" and "relative price change market cross-elasticity". In addition, a review on literature indicated that their model had not been empirically validated. Thus, the model developed in this study used the first two components, namely, "market share" and "relative price", but replaced Moran's (1993, 1994) "durability" measure with a proxy measure of customer loyalty /durability.

One of the strengths of the research model is that it enables the calculation of the brand equity of any, and all, other institutions by using the data from the same survey of the relative market share and size of that institution, the average premium price of its programs compared with the industry average and average duration of customers' relationship with that particular institution. The brand equity calculation of all institutions in the industry, including whether they are the major players or not, can therefore be derived from the same survey data, provided the sample size for each institution is sufficient for the analysis. It was also noted that the calculations critically depend for their validity on survey data. Therefore, it was observed and suggested that the accuracy of these brand equity calculations should be further validated by cross-referencing with available internal financial data of each institution, together with secondary data researched in different local publications, such as real financial data of key players and published government statistics, in order to increase the accuracy of the brand equity valuation of individual institutions and of the Hong Kong CE industry. In this study, the brand equity valuation had been cross-referenced with the annual report of the market leader institution, government statistics, and local newspapers.

From the calculations, the total program revenue of the CE industry in 2009 was estimated, by using the data from the survey of the current study and the data from the Consumer Search report (HKU SPACE 2010), to be HK$18.78 billion and HK$16.94 billion, respectively. However, it was believed that the total volume of sales of CE in 2009 projected by the survey and the data from the Consumer Search report were overstated. In order to resolve this problem of overstating the projected total sales revenue of the CE industry in 2009 by the two sample surveys, real financial data of the market leader of Hong Kong CE industry, HKU SPACE's annual volume of sales were used in the study to project the overall volume of sales of CE industry in 2009. Thus, the volume of the CE industry in 2009 was estimated, by using the real financial data published in the Annual Report 2010/2011 published by HKU SPACE, to be HK$2.17 billion (HKU SPACE 2012a). Thus, the calculated lower figure, while conservatively estimated, is seen as more accurate and financially justified than the revenue projections estimated by sample surveys. Clearly, sample error will explain at least part of the discrepancy, and larger and more rigorous samples would reduce this error margin.

From the results of the financial brand equity valuations in the study, HKU SPACE had the greatest brand equity, as calculated in the model. Its brand equity in 2009 was HK$3.37 billion, driven primarily by its dominant market share of 42%, and its average price premium of 1.26 times the industry average after discounting for present value, calculated from the data collected in 2010 and the average amount respondents had spent on CE in 2009. From the calculations, the brand equity of all other "Big Ten" institutions and other CE institutions in the study were estimated using the common formula. The total size of "industry equity" the Hong Kong CE market in 2009 was therefore estimated at HK$5.22 billion after discounting to the present value from the amount of HK$6.04 billion. This

calculation in essence reflects the present value of total industry revenue over the average duration of years of customers' relationships, measure at a point in time. When compared with the Government statistics, this estimated total value of "CE industry equity" (HK$5.22 billion) was accounted for 31.8% of the total value added of education services for the year 2009[12]. This result was further supported by secondary information that HKU SPACE is the market leader of Hong Kong CE industry. For example, HKU SPACE was awarded, the "Sing Tao Excellent Services Brand Award – Best Continuing Education Services Provider" for the seventh consecutive year since 2006 (HKU SPACE 2014b); and received a "Gold Award" and a "Platinum Award" at the "Reader's Digest Trusted Brand Awards" in 2013 and 2014 respectively. The Reader's Digest Trusted Brands Survey has been well established for 15 years and is recognised as a reputable consumer-based and international measure of brand preference (HKU SPACE 2014c).

Based on the formula, a benefit of the model is its parsimony in enabling the calculation of the brand equity of any, and all, other institutions by using the data from the same survey of the study that can measure both the financial brand equity but also enabling the modelling the customer-based brand equity of the study. While these calculations derived from the survey results were further validated by cross-referencing with available secondary data, such as real financial data of key players and published government or industry statistics, these data and calculations are readily accessible by all institutions.

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[12] The value added of education services, including the CE sector, was HK$16.4 billion, HK$17.5 billion, and HK$20 billion in 2009, 2010, and 2011 respectively with an annual growth rates of 6.7%, 14.3% and 13.9% respectively (Census and Statistics Department 2011b, 2013). Value added is a term usually used in national accounting. It measures "the net output of an economic activity, that is, the value of goods and services produced less the value of goods and services (e.g. purchase of materials and supplies, rental, business services charge) used in production. Sum of value added of all economic activities in an economy equals to its Gross Domestic Product." (Census and Statistics Department 2013, p.2).

Thus, a further advantage of this model is that it can be used by any CE institution with a limited budget to conduct industry-wide or individual institution analyses of brand equity. As emphasised in the previous discussion, the focus of the study was on estimating the revenue streams of the industry and individual firms' brand equity, which can be attributed to an industry and each of its key competitor organisations, rather than on presenting a strict accounting-based methodology. This study does not argue that its calculations generate precise values for accounting purposes. Rather it provides estimates of brand equity which demonstrate the historical and projected sales revenue, and as a mean for marketing practitioners to conduct longitudinal brand health checks (in broad financial terms) for the industry and individual CE institutions. At such, the study aims to help management and marketing practitioners to measure financial brand equity of their CE institutions within affordable financial resources and using publically available and/ or readily estimable industry data, under conditions in which the necessary raw data and information, as suggested by various financial brand equity measures, are not readily available. It is suggested the formula of the model should be reviewed along with the consideration of future empirical research on the Moran (1993, 1994) model.

It should be noted that the difference between the Moran (1993, 1994) model and the model presented in the current study revolves around the operationalising of Moran's (1993, 1994) "durability" measure. In the current study, this was interpreted as the individual customer's financial commitment at an arbitrary point in time. It is recognised that this measure is, in fact, quite conservative as it measures only current customers' financial commitments and doesn't allow for past and potential customers' future purchase intentions. Clearly strong brands will also score highly in future and, while this will represent significant value, in strict accounting terms, this value is disregarded. In this

sense, the estimated values calculated in the current study should be seen as conservative, and, arguably, contrary to common marketing management practice.

6.2.2   Customer-based brand equity model

The customer-based brand equity model of the study was developed using partial least square path modelling. Appropriate measures as suggested in the literature were used to assess the construct validity and reliability of the measurement model, and the validity of the structural model in order to test the causal relationships between the hypothesised constructs. This section firstly discusses the results of the measurement model, followed by an evaluation of the results of the structural model and overall model fit, of the model A and B´ of the study, and the results of the research hypotheses of the study.

6.2.2.1   Measurement models A, B, and B´

The consumer brand equity models developed in the study consisted of two models for analysis and comparison in response to Aaker (1991) and Keller's (2003) suggestions that perceived quality could be measured by an overall rating of the construct itself, or by using multi-items representing the underlying dimensions of the construct. Thus, the perceived quality construct of the study consisted of a single manifest variable (overall rating) only in model A and 20 manifest variables (underlying dimensions) in model B for analysis and comparison in understanding their statistical differences.

From the results, model A exhibited sufficient outer model fit and exceeded all thresholds of reliability and validity assessments. In contrast, the latent variable of "perceived quality" with 20 manifest variables in model B did not wholly meet the benchmark of indicator reliability (although all the t-values of 20 indicators were found statistically significant, $p < 0.001$) as the outer loadings of seven manifest variables were smaller than 0.707, ranging

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from 0.45964 to 0.69951. Consequently, they were removed from the model in order to attain acceptable model fit for further analysis (Henseler et al. 2009; Barroso et al. 2010; Duarrte and Raposso 2010). These seven items were, "Academic qualifications highly regarded by employers", "Good quality of students", "Good quality of tutors", "A wide variety of programmes", "Flexible in teaching and learning", "Good social status of graduates", and "Give you a feeling of prestige". This result is somewhat surprising as the first five items were intuitively related to CE programme quality. The sixth item was related to general perceptions of graduates' social advancement after taking CE programs, and the last item was related to credibility which is one of the dimensions of the perceived service quality construct as suggested by Aaker (1991). One possible explanation for the low factor loadings may be due to the relative lack of knowledge of the items from respondents. That is, they may not possess any knowledge about the employers' perception of academic qualification, the social status of graduates, the quality of students and tutors, the flexibility of teaching and learning, and/or the variety of programs, when compared to the industry norm. Moreover, the results suggest that respondents might not have a strong feeling of prestige of the CE market leader brand, compared with the competition, even though they are customers. The PLS model in the study measured the customer-based brand equity of a market leader CE brand, and another possible explanation was that nearly 80 per cent of the market share (from the findings) was dominated by the extension arms of local universities which are universally well regarded by the Hong Kong community with seemingly little differentiation in their prestige. This explanation could be further explored in a larger sample size survey, or examined with other CE institutions for comparison in future research. As a result of the shortcomings in these results, a new model B´ was formed, without those seven manifest variables and with thirteen indicators remaining in the perceived quality construct, for further analyses. The results indicated that the new model B´ met all the benchmarks of reliability and validity tests (indicator reliability,

construct reliability, convergent validity, content validity, and discriminant validity assessments) in the measurement model.

In addition to the abovementioned five different types of reliability and validity tests, it was acknowledged that a more stringent approach was desirable, and, as a result, three different measures as suggested by various scholars (Fornell and Larcker 1981; Henseler et al. 2009; Chin 2010; Hair et al. 2011), were fully employed in the study in testing the discriminant validity of both measurement models A and B´. The results indicated both models had exceeded the thresholds of all three discriminant validity measures of the measurement models.

In addition, besides the perceived quality construct (in model B´, discussed above), brand association was also one of the two constructs in the model that consisted of multiple indicators. From the review of literature in Chapter 2 and the operationalisation of constructs of the research model of the study, it was acknowledged that brand associations was a diverse concept which consisted of a number of underlying dimensions (such as eleven types of dimensions of brand associations as proposed by Aaker (1991)) and it would not be feasible to ask the respondents all possible dimensions of brand associations in a survey in order to avoid ambiguity and fatigue for the respondents. In this context, the aims of the current study were to test the causal relationships among the constructs of brand equity and their effects on customers' behavioural intentions and willingness to pay a premium. The study did not aim to identify all possible underlying dimensions of the constructs of customer-based brand equity of the local CE industry; but rather to include a parsimonious relevant and representative set of items. From the expert opinion and the results of pilot tests, five relevant items were included for measuring the brand associations construct of the study. For future research other possible dimensions of brand association,

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such as product attributes, intangibles, customer benefits, relative price, use/application, user/customer, celebrity/person, life style/personality, product class, competitors and country/geographic area as conceptualised by Aaker (1991), and the product and non-product related attributes such as functional, experiential and symbolic benefits and other brand-related attitudes as proposed by Keller (2003) could be explored further. In the present study, the thirteen surviving brand association items satisfied strict criteria for inclusion in the final model B´.

In short, the results of measurement model A and B complied fully with all the reliability and validity requirements for PLS models. The results exceeded the thresholds of all reliability and validity assessments of PLS measurement model, and exhibited clear evidence of indicator reliability, construct reliability, convergent validity, content validity, and discriminant validity of the measurement model. Thus, the results of the measurement models confirmed that the indicators were capable of representing the latent variables of the customer-based brand equity models and that the four constructs in the model were empirically distinct. Thus, acceptable model fit for both measurement models was confirmed. The next section discusses the results of structural models of both model A and B´and the comparison between model A and B´to determine which model would be better employed in testing the research hypotheses.

6.2.2.2 Structural models A and B´

Both the measurement models of A and B´ had demonstrated acceptable model fit, and their resultant structural models in the study could be examined and eventually used in the testing of the research hypotheses.

As discussed in sections 5.5.3 and 5.5.5, the structural model was used to test the causal relationships of hypothesised constructs of model A and B´. Following the recommendation of Henseler et al. (2009), four essential criteria were employed to evaluate the quality of the structural models A and B´ in determining which model would be better in the evaluation of research hypotheses. The results of the structural model assessment were closely comparable for both models. Next, it was noted that there is no overall model fit measure for PLS models. A global criterion of a Goodness of Fit (GoF) index was proposed from Tenenhaus et al. (2005) and supported by Chin (2010) and Vinzi et al. (2010) to use for assessing the PLS model globally. The GoF indexes for both models A (58.23%) and B´ (55.5%) were larger than the benchmark value of 0.36 which proved both models were valid with good predictive performance.

As outlined previously, one of the sub-objectives of the study was to examine Aaker's (1991, p.86) suggestion on using both single item and multi-items in measuring perceived quality. Aaker (1991) emphasises the importance in measuring it as an overall rating as he explains perceived quality is an overall feeling of a brand which is a summary construct and an intangible in nature. Although both measures of perceived quality of models A and B´ satisfied the reliability and validity tests, as well as inner model quality and GoF indices, the results proved that using a single item, that is, an overall rating, is better than multi items in measuring perceived quality in the study. Finally, having evaluated the performance, in terms of variance explained, predictive relevance and overall predictive performance, of both models as discussed in section 5.5.8, model A was confirmed to evaluate 18 research hypotheses of the study.

6.2.2.3 Hypotheses results of customer–based brand equity model

In order to evaluate the research hypotheses, the path coefficients of the inner model were examined in terms of sign, magnitude and significance. The most unexpected finding was that brand awareness did not have a statistically significant direct effect on brand association (H1, β = 0.02405, *n.s.*), perceived quality (H2, β = -0.00514, *n.s.*), brand loyalty (H3, β = 0.03096, *n.s.*), willingness to enrol (H4, β = 0.04282, *n.s.*), willingness to recommend (H5, β = -0.07153, p < 0.01) or pay a premium price (H6, β = 0.08124, *n.s.*). These findings were somewhat surprising as they were contrary to the hypothetical relationships as postulated by Aaker (1991) and Keller (2003) and the findings of other studies which had concluded that brand awareness significantly impacts on other dimensions of brand equity. For example, Buil et al. (2013) tested and confirmed that brand awareness had a positive impact on brand association and perceived quality dimensions; however, they did not test if brand awareness had any impact on brand loyalty in their study. However, the findings of the current study were consistent with the study of Mourad et al. (2011). They adapted the brand equity models primarily of Keller (1993) and Aaker (1991) to a lesser extent, in order to examine the brand equity in the service sector and, in particular, in the context of higher education in Egypt. Their findings provided empirical support for the proposition that brand equity is a significant factor of the choice of University (measured as "intention to purchase"). The results of their empirical research prove partial support for their proposed brand equity model. The first dimension in their model: "brand awareness", was not a statistically significant driver of brand equity in higher education, as was the case in the current study. Brand awareness is less important when competing institutions are already widely known. On the other hand, the second dimension, "brand image"-related determinants were found to be statistically significant drivers of brand equity in their research (Mourad et al. 2011).

In the current study, aided or unaided brand recall questions were designed in the survey (Aaker 1991; Keller 1993, 2003); however, only unaided brand awareness was used in the model because, firstly, those 69 respondents included in the PLS study were all able to unaided recall the leader brand (HKU SPACE) and thus the brand recognition measure was redundant. Secondly, unaided brand recall is a more powerful indicator of brand awareness and of a brand's position among the other brands in an individual's mind (Aaker 1991; Keller 1993, 2003). Thirdly, unaided brand recall is more critical than aided recall (brand recognition) in consumer decision-making for service brands (Keller 2003) and, finally, it would be more difficult for a person in recalling a brand on the basis of unaided than aided recall (Aaker 1991; Keller 2003). Brand awareness, which includes aided (brand recognition) or unaided brand recall, is a very important component of the brand equity concept as it is a key driver in enhancing the likelihood of a consumer's purchase decision. It also has a positive impact on the formation and strength of brand association, and, in turn, influences the perceived quality and enhances brand loyalty which can increase the likelihood of a consumer's willingness to buy, willingness to recommend to others and to pay a premium price for a product or service (Aaker 1991; Keller 1993, 2003; Buil et al. 2013). Brand awareness alone might be sufficient to drive the consumers to purchase the brand, even in the absence of any brand associations, especially in low-involvement categories (Keller 2003). In addition, in Keller's (2001, 2003) consumer-based brand equity pyramid, he suggests there is an ordering of the steps in the pyramid and that, as such, brand salience (brand awareness) must be attained before going to the next level, brand meaning (brand associations). However, contrary to the broad thrust of the literature, the findings did not support the conceptualised/ hypothetical relationships between brand awareness and the other constructs of interest in the study.

One possible explanation of this finding is that the decision to enrol in a Hong Kong CE programme is not generally a low-involvement decision. This was supported by the information provided by the 272 respondents of the study that the average annual programme fee was HK$11,509 (Australian $1,650 approximately), average programme duration was 2.95 years and average numbers of CE programme studied were 1.1 programmes (Table 5-4 in Chapter 5). From the information, it was noted that the average programme fee of Hong Kong continuing education was not inexpensive, and also it was not a frequently purchased service (the average number of purchased CE programme was 1.1 programmes). Thus, when the purchase is not a low-involvement decision, as seems evident in this case, then purchase decisions are less likely to be driven by simple brand awareness, and thus it is perhaps not surprising that brand awareness was not a significant driver of the other three dimensions of brand equity, customers' behavioural intentions and willingness to recommend to others and pay a premium price for a CE programme.

As supported by the findings in Section 5.2.3 in Chapter 5, another possible explanation was that Hong Kong CE industry is dominated by the "Big Ten". Findings illustrated that nearly 80% of the market share of the Hong Kong CE industry was dominated by the "Big Ten" CE institutions. Despite the dominance of HKU SPACE, all the "Big Ten" are similar in that they are either extension arms of local universities, or have been actively providing various continuing education programs for the community for decades, and are uniformly highly regarded in Hong Kong and enjoy a high level of brand awareness. Thus, a high level of brand awareness (in which all respondents in the model could name the leader brand with unaided brand recall) did not have a statistically significant impact on other dimensions of brand equity of the study, customers' willingness to enrol a CE programme, willingness to recommend a CE institution to others and pay a premium price for a CE programme. As discussed above, this explanation is consistent with the findings of Mourad

et al. (2011) that brand awareness is less important when competing institutions are already widely known.

Next, the "causal" relationships between brand associations and the other dimensions of brand equity (perceived quality and brand loyalty) and the behavioural consequences in terms of customers' willingness to enrol, recommend a CE institution to others and pay a premium price were examined in the next 5 research hypotheses (H7 – H11). It was found that, with the exception on the construct of customers' willingness to enrol (H9 was rejected), brand association had a significant direct effect on all other four hypothesised constructs (including the mediation effects, partial or fully, highlighted in brackets). These findings confirmed a very strong and significant causal relationships between brand association on perceived quality (H7, β = 0.68029, $p < 0.001$), brand loyalty (H8, partially mediated by "perceived quality", β = 0.36570, $p < 0.01$; if removed the mediator and the direct effect was, β = 0.50967, $p< 0.001$). It also confirmed a strong and significant relationship between brand association on willingness to recommend a CE institution to others (H10, fully mediated by "brand loyalty", β =-0.00683, *n.s.*; if removed the mediator and the direct effect was, β = 0.34191, $p < 0.01$), and a significant relationship between brand association on willingness to pay a premium price of a CE brand (H11, partially mediated by "brand loyalty", β = 0.19517, $p < 0.05$; if removed the mediator and the direct effect was, β = 0.37621, $p < 0.001$). The findings reinforce Aaker (1991) and Keller's (1993; 2003) arguments on the causal interrelationships among the three dimensions (brand association, perceived quality and brand loyalty) of brand equity and their relationships with customers' willingness to recommend a CE brand to others and pay a premium price for a CE programme, with an exception of the relationship between brand association and customers' willingness to enrol a CE programme.

A possible explanation for the lack of a significant relationship between brand association and customers' willingness to enrol a CE programme is that enrolment in an education program is not a frequent decision (unlike many frequent purchases). In the current study all the respondents had at least studied one CE programme; and the average number of programme studied was 1.1 programmes, and thus, for many it may have been unlikely for them to enrol in a CE programme in the near future. Nevertheless, it is noteworthy to point out that the findings evidence the importance of brand associations from a marketing perspective. The results indicated that brand associations not only significantly impact customers' perceived quality and brand loyalty but they also significantly impact customers' willingness to recommend a CE brand to others and pay a premium price of a CE programme. In the past, other scholars have confirmed that brand associations have a significant positive impact on perceived quality, brand loyalty and consumer responses. For example, Faircloth et al. (2001) empirically confirmed that brand associations have a significant impact on consumers' purchase intentions and willingness to pay premium prices. Similarly, del Río et al. (2001) confirmed that brand associations positively impact on consumers' willingness to recommend the brand to others, to pay a premium price for a brand and to accept brand extensions. Similarly, Vázquez et al.'s (2002) study confirmed brand associations have a positive impact on consumers' willingness to recommend and pay a price premium. In Buil et al.'s (2013) study, their findings confirmed that brand associations have a significant impact on brand loyalty.

The next four hypotheses (H12-15) were related to the direct effects between perceived quality and brand loyalty, willingness to enrol, recommend a CE institution to others and to pay a premium price. It was confirmed that perceived quality did not a have significant effect on customers' willingness to enrol (as H13 was rejected; similar to the previous finding between brand association and willingness to enrol) or to pay a premium price

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(H15 was rejected). Nevertheless, the results confirmed perceived quality had a significant direct effect on the other two hypothesised constructs. Thus, it confirmed a significant causal relationships of perceived quality on brand loyalty (H12, $\beta = 0.20965$, $p < 0.05$), and willingness to recommend a CE institution to others (H14, fully mediated by "brand loyalty", $\beta = 0.01708$, $n.s.$; if removed the mediator and the direct effect was, $\beta = 0.21927$, $p < 0.05$). Perceived quality is widely recognised as an important element in brand equity and building a strong brand (Farquhar 1989; Aaker 1991; Keller 1993, 2003). It helps consumers to develop a positive evaluation of the brand in their memories; however, as argued by Farquhar (1989), positive evaluation alone is not sufficient in influencing consumer behaviour. Only those positive brand attitudes/ brand evaluation that can be accessible from the consumers' memories will effectively influence their perceptions and behaviours. In addition, as the current results suggest, perceived quality may be seen as a "given", or comparable across all providers, and thus the discriminating power of quality may be insignificant, as in the current case.

In addition, the results indicated perceived quality does not significantly impact willingness to enrol or willingness to pay a higher programme fee. (As discussed previously, this may possibly be due to the fact that CE is not a low involvement and frequently repeated purchase service.) Unlike the results for brand association and brand loyalty (which are discussed in the next section) perceived quality alone is not statistically significant in driving the customers to pay a premium price. One possible explanation is that 80 per cent of the CE industry is dominated by the Big Ten, and they all are highly regarded and expected to provide high quality programmes because they have either long history of development or because they are the extension arms of local universities. Thus, customers are not necessarily willing to pay a higher programme fee simply because of the favourable perceived quality of a CE institution, as this has been viewed as a prerequisite

in Hong Kong CE programmes, given the background of most of the CE institutions. Nevertheless, the results demonstrated that perceived quality significantly impacts both brand loyalty and willingness to recommend which in turn indirectly, increases the future income, profitability and market share of a CE institution.

Finally, in relation to the findings of the construct of brand loyalty, the results confirmed that brand loyalty has a significant direct effect on all three hypothesised constructs. It confirmed a significant direct effect between brand loyalty on willingness to enrol in a CE programme (H16, β = 0.16142, p < 0.1), and very strong and significant direct effects on willingness to recommend a CE institution to others (H17, β = 0.95875, p < 0.001) and to pay a premium price for a CE programme (H18, β = 0.49278, p < 0.001).

It is noteworthy that the findings proved the importance of brand loyalty in devising marketing and branding strategies. Previous discussion has indicated that CE programmes are not frequent purchases nor low involvement services. The results also indicated that customers were less likely to enrol in more than two programmes. Further, when compared with the results of the other three dimensions (brand awareness, brand association, and perceive quality) of the brand equity model, only brand loyalty has a direct impact on the customers' willingness to enrol a programme. Thus, the future enrolment in CE programmes would be primarily driven by brand loyalty of the customers or the students' and alumni's recommendations of a CE institution to others. (It was also noted from the results that brand loyalty can, in turn, be driven by brand association and perceived quality.) Coupled with the findings that brand loyalty can increase the likelihood of the customers paying a higher programme fee, all these findings conclude the future income, and profitability and market share of a CE institution can be best increased by leveraging the brand loyalty of existing customer.

As mentioned, though the review of the extant literature revealed a relative paucity of published empirical research, particularly in the education services sector (Krishnan and Hartline 2001), the results of the customer-based brand equity model of the current study confirmed that brand equity exists in the service context of Hong Kong continuing education industry in both financial and customer behaviour terms. Higher education is a high credence service (Mourad et al. 2011), this finding is consistent with Bharadwaj et al.'s (1993) observation that brand equity is more important for services if those services are predominated by experience or credence attributes.

The previous findings (except that brand loyalty has positive impact on customers' willingness to enrol in a CE institution) indicated that, instead of enrolling a programme for themselves, the respondents were more willing to recommend their CE brands to others and pay a premium price for a CE programme of their favourite brands. These findings indicated that customers did not consider CE programme as a frequently purchased service in that it was less likely that they will enrol in another CE programme in near future. From a marketing standpoint, these results illustrate that the future major sources of new customers, income and profitability of a CE institution and its ability to increase market share are driven by students'/ alumni's word-of-mouth and their willingness to pay a premium price. These are directly related to positive brand equity associated with strong brand loyalty, favourable brand associations and perceived quality. These were noteworthy findings and directions for practitioners in devising appropriate marketing and branding strategies for the institution.

Based on the findings of this study, CE institutions should conduct focus groups to elicit and better understand the sub-dimensions of their brand associations and perceived quality

from their students' and alumni's viewpoints. This should help CE management to further enhance the strength, favourability and uniqueness of brand associations and perceived quality. In turn, this should strengthen the brand loyalty of students and alumni to the CE institutions and increase the customers' willingness to enrol, recommend a CE institution and pay a higher fee. As suggested, having identified particular and possibly unique sub-dimensions of brand associations and perceived quality of their institutions from the customers' views via focus groups, the strength, favourability and uniqueness of brand associations are better understood. These results and the suggested subsequent research can provide one of the bases for a CE brand "health check", especially the customer perspective, which can be measured across the years for comparison. Moreover, in order to strengthen the brand loyalty of customers, the management of CE institutions should devise marketing strategies, such as marketing communication, campaigns and events and establish alumni association/ networks in order to build and strengthen the brand loyalty and word-of-mouth of the students and alumni, in order to increase their future income, profitability and market share.

As mentioned previously, it was noted there is a paucity of empirical research to test and understand the interrelationship among the dimensions of customer-based brand equity or explore the relationship between the dimensions of brand equity and consumer responses (Buil et al. 2013). Following this observation, a review of the literature of previous empirical studies shows that, typically, they do not seek to examine how the dimensions of brand equity are inter-related; rather, they have focused on testing either one or two brand equity dimensions, or overall brand equity, that has/have a positive impact on, or significant correlation with, consequences of brand equity or consumers' responses, such as, increase in market share, purchase intentions and willingness to pay a premium price, etc. (Park & Srinivasan 1994; Cobb-Walgren et al. 1995; Yoo and Donthu 2001; Tolba and

Hassan 2009; Buil et al. 2013). This study is a first attempt to develop a customer-based brand equity model for the Hong Kong continuing education industry, to test the interrelationship among the dimensions of brand equity and to identify their significant impacts on customers' behavioural intentions and willingness to pay a higher programme fee. As a result, the findings should provide diagnostic value for the management to identify the drivers of future sales performance, and a better understanding for the management to devise more practical marketing strategies for their institutions, together with ongoing customer-based brand equity measures for them to conduct brand health checks across the years and to benchmark with other competitors' brands.

In summary, with the exception of non-significant brand awareness results on other constructs of interest in the study, the results of the structural model generally validate Aaker's (1991) and Keller's conceptualised brand equity models in the context of the Hong Kong CE industry. The structural model has illustrated, and explained the interrelationships and the relative importance of the dimensions of brand equity of the customers, starting from brand awareness, via brand associations, perceived quality and brand loyalty to customers' willingness to enrol in, recommend a CE institution and pay a premium price for a CE programme fee. With the exception on the findings of the direct effects from brand awareness on other constructs of the interest in the study; brand association on willingness to enrol; perceived quality on willingness to enrol and willingness to pay more, nine research hypotheses were confirmed by the assessment of the final structural model (Table 6-1) of the study. The magnitudes of the path coefficients were significant in nine of the research hypotheses and these were highlighted in previous discussion. Some possible explanations for the rejected research hypotheses were also discussed. Based on the results of the model, some suggestions for the management and marketing professionals of the CE institution were discussed. The study therefore provides

empirical evidence of the validity of Aaker (1991) and Keller's (1993, 2003) conceptualised brand equity models in the services context of Hong Kong continuing education.

Table 6-1. Hypotheses summary

	Hypotheses	Conclusion of analysis
H1	Customers' brand awareness is positively related to brand associations.	Rejected
H2	Customers' brand awareness is positively related to perceived quality.	Rejected
H3	Customers' brand awareness is positively related to brand loyalty.	Rejected
H4	Customers' brand awareness is positively related to willingness to enrol in a CE program.	Rejected
H5	Customers' brand awareness is positively related to willingness to recommend a CE program to others.	Rejected (incorrect sign)
H6	Customers' brand awareness is positively related to willingness to pay higher fees for a CE program.	Rejected
H7	**Customers' brand association is positively related to perceived quality.**	**Supported**
H8	**Customers' brand association is positively related to brand loyalty.**	**Supported and partial mediated by Perceived Quality**
H9	Customers' brand association is positively related to willingness to enrol in a CE program.	Rejected.
H10	**Customers' brand association is positively related to willingness to recommend a CE program to others.**	**Supported as fully mediated by Brand Loyalty**
H11	**Customers' brand association is positively related to willingness to pay higher fees for a CE program.**	**Supported and partial mediated by Brand Loyalty**
H12	**Customers' perceived quality is positively related to brand loyalty.**	**Supported**
H13	Customers' perceived quality is positively related to willingness to enrol in a CE program.	Rejected
H14	**Customers' perceived quality is positively related to willingness to recommend a CE program to others.**	**Supported as fully mediated by Brand Loyalty**
H15	Customers' perceived quality is positively related to willingness to pay higher fees for a CE program.	Rejected
H16	**Customers' brand loyalty is positively related to willingness to enrol in a CE program.**	**Supported**
H17	**Customers' brand loyalty is positively related to willingness to recommend a CE program.**	**Supported**
H18	**Customers' brand loyalty is positively related to willingness to pay higher fees for a CE program.**	**Supported**

6.3 Contribution of the study and implications for practitioners

The study provides a contribution to marketing practice and the literature in several ways. First, this study has provided current data about the characteristics of the Hong Kong CE industry and consumers' behavioural intentions, especially in relation to brand equity. This information was previously not readily available.

Second, one of the contributions of the research was to propose and operationalise a model, developed by Moran (1993, 1994), to measure the financial-based brand equity of the Hong Kong continuing education industry and of individual CE institutions that can be operationalised by the institutions, at modest cost, in a local context, by using a single survey and the firm's internal data. Beyond Moran (1993, 1994) himself, the review in literature indicated that their brand equity model has not been empirically tested or documented in the public domain and the current study was the first attempt to operationalize their model of brand equity valuation. The current study also proposed a more assessable "proxy" measure of brand "durability" which could be applied in the of Hong Kong continuing education industry.

Additionally, while various brand equity valuations methods available in the literature have been discussed, there exists a continuing knowledge gap in that measurement of brand equity cannot be easily applied or aggregated for an industry, as a whole, especially when the necessary raw data and information required for calculating/ measuring of a brand are not readily available at the organisation or industry level. Thus, the emphasis in the study was on estimating the revenue streams of the industry and of individual firms' brand equity, which can be attributed to an industry and each of its key competitor organisations, rather than on presenting a rigorous, accounting-based methodology. This study does not argue

that its calculations generate precise values for accounting purposes. Rather it provided estimates of brand equity which demonstrate the historical and projected sales revenue, and as a mean for marketing practitioners to conduct a brand health check for the industry and individual CE institutions over time.

Strategically, it is worth noting that the study provides financial brand valuations for each CE institution which would potentially help to assess each brand's value for comparison in the industry and as a possible basis for future mergers or acquisitions. In fact, the scenario in which local universities may indeed sell off parts of their continuing education arms has recently become a real possibility with the announcement that City University's Community College is being prepared for sale (SUN 2014). Conceivably, any future sale price will reflect, at least in part, a calculated multiple of brand equity.

Third, it was concluded in the literature review that there is considerable interest in the conceptual and empirical research on consumer-based brand equity since it first emerged in the 1980s. As mentioned previously, it has been argued that brand equity can be applied, and is equally important, to both consumer products and services contexts; however, the review of the extant literature revealed a relative paucity of published empirical research in the services sector, generally, and this is even more limited in the higher education sub-sector. At the same time, it was noted that there is growing support from scholars for the application of branding concepts to higher education in order to develop and sustain competitive advantage (Temple 2006, 2011; Chapleo 2005, 2007, 2011; Judson et al. 2009; Wæraas and Solbakk 2009; Chapleo 2010; Durkin et al. 2012; Natale and Doran 2012; Mourad 2013; Williams and Omar 2013). The search for competitive advantage is an increasingly urgent issue, especially as nowadays competition in the higher education market has become increasingly intense and global (Chapleo 2005; Hemsley-Brown and

Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Lockwood and Hadd 2007; Judson et al. 2009; Wæraas & Solbakk 2009; Williams and Omar 2013). However, despite the growing importance of the topic over recent years, there is a relative paucity of research papers examining the issue of branding in higher education or applying branding theories in the context of higher education (Chapleo 2005, 2007, 2011; Hemsley-Brown and Oplatka 2006; Hemsley-Brown and Goonawardana 2007; Wæraas & Solbakk 2009). In this sense, unsurprisingly, information concerning brand equity in the Hong Kong continuing education context is virtually non-existent. Thus, the study provides a potentially worthwhile contribution to the marketing practice and literature in branding in the services context of continuing education.

Fourth, the study was a first attempt, in adapting Aaker (1991) and Keller's (1993, 2003) conceptualised brand equity models to develop a multi-dimensional measure of customer-based brand equity model of Hong Kong continuing education industry and to test the model to better understand the causal interrelationships among the four dimensions of consumer-based brand equity and to measure their relationships to behavioural outcomes of customers' willingness to enrol, recommend a CE institution to others and pay a higher fee. This study responded to, firstly, Aaker (1991) who argued that the causal interrelationships among the four dimensions of consumer-based brand equity remain unclear, and, secondly, to Buil et al.'s (2013) comment that only few studies had empirically examined the interrelationships among the dimensions of brand equity and their impacts on consumers' responses, such as consumers' willingness to purchase and pay a premium price (Buil et al. 2013), and thirdly, to numerous scholars' and practitioners' suggestions for more empirical study of branding in the services and higher education contexts. The results provide empirical evidence which support the multidimensionality of the consumer-based brand equity models as developed by Aaker (1991) and Keller (2003),

and confirmed the brand equity dimensions are conceptually distinct, as well as demonstrating that the concept of brand equity exists in the services context of the Hong Kong continuing education.

Consistent with the conceptualisation of Aaker (1991) and the empirical findings of other scholars, such as Pappu et al. (2005) and Buil et al. (2013), the results of the study supported the view consumer-based brand equity is a four dimensional construct. It is worth noting that Cobb-Walgren et al. (1995) only studied the perceptual components of brand awareness, brand associations and perceived quality in their study of brand equity, thus, not including brand loyalty. Similarly, Yoo and Donthu (2001, 2002) concluded that brand equity is comprised of three dimensions, including brand loyalty, perceived quality and brand awareness/ brand associations. Due to failing the discriminant validity and variance comparison tests, Yoo and Donthu (2001) combined brand awareness and brand association into one dimension in their study. Moreover, Washburn and Planks (2002) also confirmed that the brand equity construct consists of both three (of which brand awareness and brand association were combined into one dimension in their study) and four dimensions; however, their empirical findings indicated that the fit of the four dimensional brand equity model was not as strong as their three dimensional model.

Fifth, the results of customer-based brand equity model including the assessment of measurement and structural models, and the goodness-of-fit index indicated that the final research model produced high levels of reliability and validity (in terms of indicator reliability, construct reliability, convergent validity, content validity and discriminant validity), the amount of variance explained, good predictive ability and relevance, as well as overall model fit with good prediction performance. More importantly, the results supported the four-dimensional customer-based brand equity model with statistically

significant power in predicting customers' willingness to enrol a CE programme, recommend a CE institution to others and pay a premium price. In addition, the results contribute to our understanding of the existence of brand equity in the CE service context, and of the causal interrelationships between the brand equity dimensions of a Hong Kong CE institution and their ability to predict customers' intentions to enrol, recommend and willingness to pay a higher programme fee.

From a practical standpoint, the findings have implications for marketing practitioners and scholars. The results estimated the size and importance of brand equity in financial terms in the Hong Kong CE industry. Adapted from Aaker (1991) and Keller's (2003) brand equity models, the results confirmed brand equity exist in services brand; the case here was Hong Kong CE industry. From the results, however, it was shown that brand awareness of CE institutions does not have any significant effects on other dimensions of brand equity or on customers' behaviour intentions or willingness to pay a premium price for a programme. Consistent with the empirical findings of Mourad et al. (2011), the results of the current study supported that brand awareness does not have any effects on the students' intentions to enrol in a higher education program. (Possible explanations were discussed previously and it is suggested that future research could be undertaken to examine any changes in the significance of the dimensions and their consequences). Notwithstanding, it is noteworthy that the finding of the insignificance of brand awareness is contrary to the results of previous studies on the relationships between the dimensions of brand equity, such as, the results of Buil et al. (2013). Nevertheless, among the other dimensions, brand loyalty proved to have the most significant direct effects on customers' willingness to enrol, and recommend a CE programme to others as well as to pay a premium price, while brand associations were shown to have significant effects on customers' willingness to recommend a CE institution and to pay a premium price. In addition, brand associations

had direct effects on perceived quality and brand loyalty, while perceived quality had direct effects on brand loyalty and consumers' willingness to recommend a CE programme.

From a managerial perspective, the results highlight the prime importance of building and maintaining positive brand equity via customers' brand loyalty and brand associations in order to drive the future demand for CE programmes (either directly from the current or past customers themselves or through word-of-mouth of customers; both students and alumni), and to charge a premium price. In addition, the results indicated that brand loyalty is the most influential dimension in customers' willingness to enrol in, recommend to others and pay a premium price, which are the major sources of future income of CE institutions. Marketing management should therefore focus on developing customer loyalty programs as key initiatives to build brand equity.

It was also demonstrated that brand associations contribute to building customers' brand loyalty and perceived quality, and in turn perceived quality had contributed to building brand loyalty and can drive the consumers' willingness to recommend a CE programme. It is therefore important for managers of Hong Kong CE industry to devise branding strategies in building strong brand equity on the three dimensions: brand loyalty, brand associations and perceived quality, rather than focusing their advertising spending on developing brand awareness of CE institutions, which is currently a common practice by CE institutions. This recommendation is consistent with the recommendation from Mourad et al. (2011), in which they argue that it is advisable to develop and maintain the positive determinants of the brand image dimension of brand equity which will, in turn, increase brand equity, rather than simply investing and expanding the promotional campaigns and budgets of higher education institutions to create and sustain brand awareness (Mourad et al. 2011).

Following the results of the study, marketing professionals of the CE institutions should devise marketing strategies aimed at building and enhancing brand associations; in turn, to increase perceived quality of, and brand loyalty towards, the CE institution. The results show that while brand awareness is not significant, particular brand associations are significant. Thus, while the CE institutions are generally well known, there is evidence that particular brand associations will be more influential. In particular, existing and potential customers need to know why their preferred institution is different and better. Thus, a potentially fruitful suggestion for further research by individual institutions is to understand the particular attributes (or brand associations) which current customers use to distinguish their institution from the competition. Rather than focusing on brand awareness, CE institutions should give more thought to advertising content and messages and to the particular brand associations which appeal to their customers and alumni. In particular, what brand attributes attracted them to their chosen institution? What attributes most impressed them in their experience as CE students? In most cases, this should be the focus of further market research, including qualitative research, to identify those attributes (or brand associations) which would form the basis of the institutions' competitive positioning. In addition, the CE institutions should also seek to build a strong network and community among students and alumni in order to build on the strong brand loyalty, which will, in turn, increase the word-of-mouth, increase the likelihood of customers' future purchases and enable the institutions to charge a premium price. The model should help the marketing and advertising practitioners to provide a rationale and justification for branding activities and investment to the management and financial professionals of the CE institutions.

Additionally, the results supported Aaker (1991) and Keller's (2009) suggestions that a causal ordering and interrelationships exist among the dimensions of brand equity and their

consequential impacts on customers' behaviour intention and willingness to pay a premium price. The results exhibited a causal ordering among the dimensions of brand equity, that is, brand associations preceded perceived quality and brand loyalty, and perceived quality preceded the brand loyalty of the CE institution. This causal ordering suggests that a variety of marketing and communication strategies could be employed in pursuit of each of these elements of brand equity. Thus, practitioners could devise strategies which focus on the timing of effective ordering among the dimensions and allocation of marketing resources and investments more effectively and efficiently on those significant dimensions. Clearly, brand associations, perceived quality and brand loyalty are prominent attributes in customers' purchasing behaviour and these should guide future marketing campaigns. Moreover, it provided empirical evidence in suggesting several feasible and effective marketing strategies in building and strengthening the brand equity of a CE institution, increasing the likelihood of the customers' behavioural intentions and willingness to pay higher fees. These findings suggest directions for management and marketers of a firm to understand how consumers feel and react to a brand, as well as giving some indication of the drivers of their behavioural intentions. CE institutions should conduct their own qualitative research to establish the salient brand associations and their competitive positioning among current customers and alumni. In addition they could use the results of this qualitative study to adapt this study's questionnaire for future surveys, and use the findings to "fine tune" future branding planning and strategies.

6.4   Limitations and directions for future research

This study has several limitations. First, a limitation arose from using a mall-intercept sample. It was acknowledged that the target population of the study was estimated at over 5.8 million people in 2009 (Census and Statistics Department 2010), and thus it was not feasible to obtain a useful, comprehensive sampling frame of the study. In order to

overcome the limitation of using a mall-intercept sample, and following Sudman's (1980) suggestions, several shopping centres in different districts were selected and 48/52 male/female quota samples were used reflecting the most recent Hong Kong population statistics at the time of data collection period (Census and Statistics Department, 2007). While, for the current study, it is argued that the risk of bias was minimised to an acceptable level, it is recommended for future researchers to apply a more rigorous probability sampling frame in any future study in order to increase the generalisability of the results to the target population. Furthermore, the definition of the target population should be clarified. Should it be all of the adult population, if the results of the survey are projected to the total adult population? Alternatively, should it be directed to the total population of adult continuing education students? The clarification of this issue would go a considerable way to explain the discrepancies in the estimated total customer numbers and revenue of the CE market.

Second, the model of the study was validated based on respondents who were customers of the market leader of Hong Kong CE industry and further research should validate the customer-based brand equity model using different CE institutions. This would increase the generalisability of the results. In addition, the results of the study confirmed that brand equity exists (and can be measured) among Hong Kong continuing education customers and that it has significant impacts on customers' behavioural intentions and willingness to pay a premium price. By conducting research and using other CE institutions in the model, preferably using small and new brands of CE institutions, future researchers should empirically validate if the instant loyalty also exists in the Hong Kong continuing education service context as Ehrenberg and his followers' suggest. In relation to Ehrenberg's more general assertions, the results of the current study provide mixed conclusions. Clearly, market share is a key driver of total brand equity and the dominant

share of the market leader in the current study would support the Ehrenberg view. At the same time, the significant causal influence of attitudinal variables such as brand associations and perceived quality, would suggest that consumers are more considerate of their purchase decisions. These results suggest that CE purchase is a high involvement decision in which brand equity plays an important causal role.

Third, researchers in future could validate the measure by applying the model in CE industry of different cities or countries as well as different type of services to test its external generalisability. The results of the current study and the size and penetration of the CE market in Hong Kong are consistent with the view that education generally, including CE, is particularly highly valued, by world standards, in Hong Kong. Similarly, additional research should test the financial brand equity model in CE industry of other cities, or countries.

Finally, as discussed in Chapter 4.4.1, there are many potential sub-dimensions in the construct of brand association as identified by Aaker (1991) and Keller (2003). In the current study, due to limitations of time and the length of the questionnaire, only limited questions concerning the brand associations (that is, their strength, favourability and uniqueness) (Keller 1993, 2003), and only one item each for measuring brand imagery and consumers' brand judgement (attitude) as suggested by Keller (2003) were asked. It should be recognised that an objective of the study was to examine the interrelationships among the four dimensions of brand equity and their causal relationships to customers' willingness to enrol, recommend to others and to pay a premium price. The study did not aim to identify all possible sub-dimensions of brand associations in CE. Future researchers might explore other sub-dimensions of brand associations; such as product attributes, intangibles, customer benefits, relative price, use/application, user/customer,

celebrity/person, life style/personality, product class, competitors and country/geographic area as suggested by Aaker (1991), and the product and non-product related attributes, functional, experiential and symbolic benefits and other brand-related attitudes as proposed by Keller (2003). Similarly, a single measure of brand loyalty was used in the study; and future researchers should consider relevant attitudinal and behavioural measures of loyalty in future research on brand equity.

6.5   Conclusions

The concept of brand equity has drawn significant marketing attention over the last several decades. It was noted that the importance of brand equity has been widely recognised in the marketing. It has been widely researched and accepted by many scholars and practitioners. Today there is little debate that brand equity has positive effects on consumer responses and is an important source of sustainable competitive advantage. Consequently, the importance of building a strong brand and associated brand equity has achieved almost universal recognition among marketing researchers and practitioners. Notwithstanding, some scholars, such as Ehrenberg and his followers hold contrary views on the importance of brand equity and their arguments against the importance of brand equity have been discussed.

Aaker (1991) and Keller (1993) first conceptualised brand equity, and subsequent theoretical and empirical studies have enriched our understanding of the different dimensions and measurements of brand equity. It has been a general consensus that brand equity is a multi-dimensional construct, and can be viewed broadly from two perspectives; namely, consumer and financial perspectives (or some scholars argued that it can be viewed from three perspectives; consumer, firm and financial-based perspectives, as

discussed in chapter 2). As supported by Keller (1993), Christodoulides and de Chernatony (2010) and Buil et al. (2013), the financial value of brand equity to a firm is driven by the consumers' responses to the brand. The brand value at the company level is primarily a result of brand value reflected in customers' attitudes and behaviour level; that is, the power of brand ultimately lies in the minds of customers (Keller 2001, Buil et al. 2013). Thus, recognition of the importance of brand equity has raised the fundamental issue of how to measure it and what constructs should be included in its measurement. From a review of the literature, it is evident that different concepts and interpretations had led to different measurement approaches, and, there is still no consensus on its measurement. At the same time, the two perspectives (that is, financial and consumer) are equally important for the management of any businesses to understand and measure in order to devise effective and efficient marketing strategies to harness the power of brand equity.

As outlined previously, it has been argued that brand equity can be applied to both consumer product and services categories; however, the review of the extant literature revealed a relative paucity of published empirical research in the services sector, which is even more limited in the higher education sub-sector. There is, however growing recognition of, and support from, scholars for the application of branding concepts to higher education as a means of increasing competitive advantage. However, the suitability of the application of branding or brand equity from the commercial sector to the context of higher education remains unclear and more empirical research in this area is necessary. A further issue in measuring brand equity in higher education is that brand equity measures as suggested by various scholars and researchers require financial and marketing data which are commonly not readily available to higher education providers, as is the case in the Hong Kong continuing education industry. Furthermore, while various brand equity valuations methods have been discussed, there is still another knowledge gap in that the

measurement of brand equity cannot be easily applied or aggregated for an industry, as a whole, since the necessary raw data and information required for calculating/ measuring of a brand are not readily available at the organization or industry level.

In response to the above issues and the knowledge gaps identified from the literature, the current study aimed, firstly, to measure the financially-based brand equity of the continuing education service industry in Hong Kong, and secondly, to develop an integrated model to demonstrate and measure the causal interrelationships among the "antecedents" or "sources" of consumer-based brand equity and the "consequences" of customer brand equity in terms of customer loyalty, behavioural intentions and willingness to pay a premium price.

It is important to note that the study was the first attempt to propose a brand equity model – an adaptation of Aaker (1991) and Keller's (1993, 2003) brand equity models, and the Moran (1993, 1994) brand equity model – for the Hong Kong continuing education industry to measure brand equity in terms of both marketing and financial perspectives within affordable limits. The results of this study provide a worthwhile step in understanding and measuring financial brand equity and customer-based brand equity in the services context of Hong Kong continuing education industry.

This study is also the first attempt to propose a brand equity model to help the Hong Kong CE industry understand and measure the sources and value of brand equity, in an environment where competitors' financial and marketing data are rarely available. In particular, the proposed models have other benefits: it examines the relationships between brand equity dimensions and customers' behavioural intentions and willingness to pay a premium price; it calculates the value of brand equity of each of the major players, as well

as the total brand equity value of the Hong Kong CE industry; and it illustrates characteristics of the Hong Kong CE industry.

The study proposed and operationalised a financial brand equity model for the Hong Kong CE industry, suitably adapted from the Moran (1993, 1994) model, in which the necessary raw data and information, as suggested by various financial brand equity measures which are required for measuring of a financial value of a brand are not readily available. In addition, the results of the financial brand equity model of the study should be easily understood by management and accounting and marketing professionals. As discussed previously, the emphasis of the current study was on estimating the projected revenue streams based on actual consumer consumption data collected from survey which can eventually be attributed to a firm, each of its major competitors and the industry overall, rather than presenting a strict accounting-based methodology in measuring brand equity.

For the customer-based brand equity model of the study, as discussed previously, the study, adapted relevant consumer perspectives of Aaker (1991) and Keller's (1993, 2003) brand equity models, to examine and measure the causal interrelationships of the four dimensions of the construct of brand equity and their relationships to customers' loyalty, behavioural intentions and willingness to pay a premium price. The operationalisation of the items and scales in model were validated by a series of systematic procedures followed the suggestions of Churhchill (1979), including expert opinions and the scale measurement (Churhchill 1979). The proposed model exceeded the thresholds of reliability and validity assessment in the pilot test.

Based on the survey findings and secondary data sources, it was indicated that HKU SPACE is the clear market leader and the strongest or biggest brand in Hong Kong CE,

Thus the data relating to HKU SPACE was employed in the research model of the main study to test the interrelationship of the dimensions of customer-based brand equity and their impacts on consumers' willingness to enrol in, recommend a CE institution to others and pay a higher programme fee. For the main study, in response to Aaker's (1991) suggestion, one of the objectives was to test if a single overall rating of perceived quality (model A) would be better than multi-items (perceived quality consisted of 20 items in model B) under the dimension of perceived quality. Due to inadequate outer loadings of 7 items of perceived quality in model B, they were removed from the model and the remaining 13 items formed model B´. Both model A and B´exceeded the all thresholds of reliability and validity assessments. Following the recommendation of Henseler et al. (2009), four essential criteria were employed to evaluate the quality of structural model of model A and B´in determining which model would be better in the evaluation of research hypotheses. The results of the structural models assessment were good and comparable for both models. The GoF indexes for both models A (58.23%) and B´(55.5%) were larger than the benchmark value of 0.36 which proved both models were valid and a very good model with a large prediction performance. The results confirmed Aaker's (1991) suggestion that perceived quality would be more effectively represented by an overall rating item than multi sub-dimensions. Having evaluated the performance on variance explained, predictive relevance and overall model's predictive performance of both models, model A was used to evaluate 18 research hypotheses of the study.

From the results of the hypotheses testing, it provided overall empirical evidence that the brand equity concept exists in Hong Kong continuing education services context, expressed in the four dimensions of brand equity (namely, brand awareness, brand associations, perceived quality and brand loyalty). In addition, it provided a better understanding of the causal interrelationships among the dimensions of brand equity and

their relative significant impacts on customers' behavioural intentions and customers' willingness to pay a premium price, which is relevant information for both marketing practitioners and financial professionals. The empirical results proved that nine hypotheses supported Aaker (1991) and Keller's (2003) postulations indicating that brand equity has significant impact on consumers' willingness to enrol in, recommend a CE institution to others and pay a higher fee for a CE programme.

From the results of the customer-based brand equity model, specifically, brand loyalty was the most critical and influential dimension of customer-based brand equity of the research CE institution as the results confirmed it has significant impact on three consequences of positive brand equity; willingness to enrol in, recommend a CE institution to others and pay a premium price of a CE programme. Secondly, brand association has direct impacts on customers' willingness to recommend a CE institution to others and to pay a higher programme fee. Thirdly, brand associations and perceived quality have significant positive impacts on brand loyalty. Fourthly, brand associations also have positive significant impact on perceived quality. Lastly, perceived quality has significant impact on customers' willingness to recommend a CE institution to others. However, perceived quality and brand associations were found not to have significant direct impact on willingness to enrol in a continuing education institution. Further, perceived quality was found not to have a significant direct impact on customers' willingness to pay a higher programme fee. Finally, the results proved that brand awareness did not have any significant direct impacts on other three dimensions of brand equity, customers' behavioural intentions and willingness to pay a higher programme fee. The possible explanations were discussed previously.

Overall, the findings proved brand loyalty, brand associations and perceived quality are the main drivers of customer-based brand equity of the CE institution and they have positive

impacts on consumers' responses; customers' willingness to enrol in, recommend a CE institution to others and to pay a premium price. However, the results did not support brand awareness is a prerequisite driver in building other three dimensions of brand equity and customers' behavioural intentions and willingness to pay a higher programme fee (This result suggests that brand awareness could be assumed as a "given", especially among current customers.). In addition, the results proved that brand equity exists in the Hong Kong continuing education services context; and especially that brand loyalty was found to be very significant and a very strong driver to customers' behavioural intention and willingness to pay a higher fee. Based on the results, some strategies were suggested for the management and marketing practitioners of Hong Kong continuing education institutions consideration, such as, to strengthen the brand loyalty so as to enhance the likelihood of word-of-mouth of the students and alumni by establishing a community network/ student and alumni association for providing on-going connections with the customers and to act as a platform for effective marketing communication, events and campaigns of the instructions; and for developing a loyalty program for students and alumni. The findings on the causal role of brand associations suggest a need to conduct more detailed qualitative research to understand the particular brand associations held by alumni and current students of individual CE institutions as a guide to advertising and promotional campaigns. In addition, the management and marketing practitioners are encouraged to use the models (financial and consumer-based) of the study to conduct brand health check across the years. However, the findings did not support Ehrenberg and his followers' arguments on brand equity, in the case of Hong Kong continuing education industry. Future researchers should conduct research to compare the results for the same and other continuing education institutions in Hong Kong or different cities or countries.

In conclusion, the concept of brand equity and its importance has been widely recognised in marketing for a considerable period of time. Since Aaker (1991) and Keller's (1993, 2003) conceptualisation of brand equity models, there have been a considerable amount of interest in the literature. It is important to note that the current study was the first attempt to operationalise Aaker (1991) and Keller's (1993; 2003) customer perspectives brand equity models and the Moran (1993, 1994) financial brand equity model, in the services context of Hong Kong CE industry. As mentioned has been previously, while it was claimed that the conceptualised brand equity models can be equally applied to both consumer products and services, the lion's share of brand equity research has been conducted in consumer goods context. There is a general consensus that published empirical research of brand equity in higher education was negligible. The results added to the literature by providing support for the view of marketing scholars and practitioners that brand equity exists, and is important, in the services context, such as in the Hong Kong CE industry. Some dimensions, such as brand loyalty, brand associations and perceived quality were confirmed, by the results, to play an influential role in customers' behavioural intentions and willingness to pay a premium price for a programme. The results of this study indicated the customer brand equity model exhibited good fit and prediction performance in examining the causal interrelationships among the dimensions of brand equity and identifying which dimensions of customer-based brand equity have significant impacts on consumers' behavioural intentions and customers' willingness to pay a higher fee. The results also suggest some branding strategies for managers to enhance the future income, profitability and market shares of the CE institution. The models can be used by marketers to understand the brand values of their institutions, the causal interrelationships among the four dimensions of customer-based brand equity and how the different dimensions of brand equity help to predict the customers' behaviour. These measures can help practitioners not only to analyse the value of their brands as well as their competitors, but also to develop

their marketing strategies and marketing communications plans, and in building and managing their brands more effectively. The measures can also be used for longitudinal brand health checks and to evaluate the effectiveness of advertising and branding campaigns and events. In this way, the current study can be seen to make a worthwhile advance in marketing management and practice in the CE industry.

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Appendix A: Survey questionnaire

Respondent No.: _____   Interview Date: _____
Name of the Interviewer: <u>Anna Lee___</u>   Interview Time: From _____ to _____

Introduction

Read laminated "Project Information Form" to respondent.
Would you like a copy of this form? *(If so, give copy to respondent.)*
Now, may I ask you:
a. Do you understand the purposes of the research?
Yes   □
No   □
b. Are you willing to answer the questions?
Yes   □
No   □
c. Do you understand that you are free to withdraw from participation at any time?
Yes   □
No   □
Thank you, again, for agreeing to participate.

Are you age 18 or above? If the respondent says yes, continue the interview or otherwise terminate the survey, and say: "thank you for your time participating in this survey, bye bye".

Once again, we will be talking about the Hong Kong Continuing Education industry and by "continuing education" I mean education undertaken outside schools or formal tertiary education institutions and which is usually taken for personal professional and career development or those courses taken after work to enhance oneself.

Part A: Awareness of Hong Kong Continuing Education Providers

A1. Which Hong Kong continuing education institution can you firstly think of *(Top-of-mind and unaided mention)*? *(Please tick one of the following institutions under the column of "Unaided" and mark down the sequences of the answer or write down the name of the institution if not on the following list)* And;

A2. Which other Hong Kong continuing education institutions you could also recall *(unaided mention and also please fill in the answer(s) according to respondent's order of reply under the column of 'Unaided")?* And;

A3. Have you ever heard about the following continuing education institutions (prompted / aided mention)? *(No need to prompt those names of the following institutions if the respondents have already mentioned it in QA1 and QA2. If the answer in this question is "Yes", together with the answers given in QA1 and QA2, also **please record them in parallel in the answer of QC1** for further asking)*

	for Q.A1& Q.A2	for Q.A3	
	Unaided:	**Prompted:**	
	Sequence(s):	Yes or No	

Institution	Unaided	Prompted Yes	Prompted No
Hong Kong University, HKU SPACE	□ _____	□	□
Hong Kong City University, HKCU SCS	□ _____	□	□
Hong Kong Polytechnic University, HKPU SPEED	□ _____	□	□
Hong Kong Baptist University, HKBU SCE	□ _____	□	□
Hong Kong City University, HKCityU SCOPE	□ _____	□	□
Hong Kong Open University, OUHK LIPACE	□ _____	□	□
Hong Kong University of Science and Technology, HKUST CL3	□ _____	□	□
Hong Kong Lingnan University, HKLU LIFE	□ _____	□	□
Hong Kong Vocational Training Council, VTC	□ _____	□	□
Hong Kong Management Association, HKMA	□ _____	□	□
Other (please specify:) _____	□ _____	N/A	
Other (please specify:) _____	□ _____	N/A	
Other (please specify:) _____	□ _____	N/A	
Unknown	□		

(For those whose answer is "unknown", terminate the survey, and say: "thank you for your time participating in this survey, bye bye!")

Part B. Information on Purchase and Loyalty

B1. Have you ever taken any continuing education course?

□ a. Yes (go to **Question B2**)   □ b. No (go to **Question C1**)

B2. Which continuing education institution(s) have you ever taken a course? (You can name more than 1.) **<show Card A, the major CE institution list>** And

B3. How many programs that you have studied in each of these continuing education institutions? *(One program/course counts one irrespective the numbers of modules of each program/course, please write down the answer(s) in the column of Q.B3.)*

B4. and B5. When was the first and the latest year in studying of any continuing education program?

	Q. B2	Q.B3	Q. B4 first time in year of?	Q. B5 latest in year of?
Hong Kong University, HKU SPACE	□	_____	_____	_____
Hong Kong City University, HKCU SCS	□	_____	_____	_____
Hong Kong Polytechnic University, HKPU SPEED	□	_____	_____	_____
Hong Kong Baptist University, HKBU SCE	□	_____	_____	_____
Hong Kong City University, HKCityU SCOPE	□	_____	_____	_____
Hong Kong Open University, OUHK LIPACE	□	_____	_____	_____

Hong Kong University of Science and Technology, HKUST CL3 □ _____ _____ _____

Hong Kong Lingnan University, HKLU LIFE   □ _____ _____ _____

Hong Kong Vocational Training Council, VTC   □ _____ _____ _____

Hong Kong Management Association, HKMA   □ _____ _____ _____

If the respondent provides the name of institution(s) other than above mentioned, please specify the name, the number of programs enrolled and which year the respondent has firstly studied in this institution and also the latest year of studying in this institution in below; if the respondent finished the program in the same year and did not enroll in the same institution again for any other program, the answer will be the same for both first year and latest year in studying the continuing education program in that particular institution:

Other, please specify the name _____   □ _____ _____ _____
Other, please specify the name _____   □ _____ _____ _____
Other, please specify the name _____   □ _____ _____ _____

B6. Have you undertaken any continuing education program in 2009 offered by any local continuing education institutions, including collaborative program jointly offered with other institutions /local or overseas universities?

       □ a. Yes (go to **Question B7**)   □ b. No (go to **Question C1**)

B7. If "Yes", at which institution(s) have you taken the course(s) **<show Card A>,** (*Please tick the box of the institution(s) below in which the respondent has taken the course(s) in 2009)* and;

B8. Can you tell me the total program fees for your current program spent with the respective institution(s) in 2009? *(Please write down the amount spent with this/these institution(s) in 2009.* **<show Card B, the amount categories card>.** *You can choose more than 1 institution and also please refer to the following amount categories; a-i)*

	Q. B7	Q. B8
		Amount in HK$

(Please tick the box next to the institution if mentioned; show the card of amount categories a-i and write down the code accordingly)

Institution	Q.B7	Q.B8
Hong Kong University, HKU SPACE	□	_____
Hong Kong City University, HKCU SCS	□	_____
Hong Kong Polytechnic University, HKPU SPEED	□	_____
Hong Kong Baptist University, HKBU SCE	□	_____
Hong Kong City University, HKCityU SCOPE	□	_____
Hong Kong Open University, OUHK LIPACE	□	_____
Hong Kong University of Science and Technology, HKUST CL3	□	_____
Hong Kong Lingnan University, HKLU LIFE	□	_____
Hong Kong Vocational Training Council, VTC	□	_____
Hong Kong Management Association, HKMA	□	_____

If the respondent provides the name of institution(s) other than above mentioned, please specify the name and the total amount (HK$) that spent with this/these institution(s) below (please also show the card of the amount category a-i):

Other, please specify the name _____ □   _____
Other, please specify the name _____ □   _____
Other, please specify the name _____ □   _____

B9. In what fields or subject(s) have you undertaken a program in 2009 or ever? (You can choose more than 1)

	2009	ever
a. Languages (including translation)	□	□
b. IT/ computing / e-commerce	□	□
c. Arts & crafts/ design / performance arts	□	□
d. Business management	□	□
e. Finance	□	□
f. Accounting	□	□
g. Sports and recreation management	□	□
h. Engineering	□	□
i. Medical science (including Chinese Medicine)	□	□
j. Social Science	□	□
k. Education	□	□
l. Philosophy/ literary/ cultural Studies	□	□
m. Hospitality and tourism management	□	□
n. Sociology / social work and psychology	□	□
o. Housing and built environment	□	□
p. Media and communication	□	□
q. Transport, logistics and urban studies	□	□
r. Law	□	□
s. General and environmental sciences	□	□
t. Life/ biomedical and medical laboratory sciences	□	□
u. Nursing studies and health care	□	□
v. Pharmaceutical studies	□	□
w. Library and information science	□	□
x. Other (please specify) _____	□	□
y. Other (please specify) _____	□	□
z. Other (please specify) _____	□	□

Part C. Brand Associations (strength, favourite, uniqueness), Performance and Imagery of Major Continuing Education Providers

Institution (in abbrev.) / Questions	HKU SPACE	HK CU SCS	HKPU SPEED	HK BU SCE	CityU SCOPE	OUHK LIPACE	UST CL3	HKLU LIFE	VTC	HK MA
Please give a tick in the boxes next if the respondent has mentioned the name(s) in QA1 and QA2 or answered "Yes" in QA3 and then only go through the following statements with those institutions ticked.										

Now I'm going to read out a series of statements which describe continuing education institutions and I would like you to indicate your level of agreement with these statements, where 1 means you strongly disagree and 7 means you strongly agree. **<Show card C>**

 Strongly Disagree 1   2   3   4   5   6   7 Strongly Agree

(Please write down "N/A" if the respondent could not give any ratings or reply unknown to the statements.)

	HKU SPACE	HK CU SCS	HKPU SPEED	HK BU SCE	CityU SCOPE	OUHK LIPACE	UST CL3	HKLU LIFE	VTC	HK MA
C1. This institution is an **excellent** continuing education institution.										
C2. Compared with other institutions in CE industry, this institution is **unique**.										
C3. Compared with other institutions in CE industry, this institution provides **superior** performance.										
C4. This institution **meets** my needs.										
C5. I feel that I **grew up** with this institution.										

Part D. Judgments and Feelings (including the Perceived Quality, Image and Credibility of institutions)

D1. Please tell me your three most recent continuing education institutions at which you:
     a) are currently studying.
OR   b) have ever studied.
OR   c) have never studied but know of.
(Record up to 3 institutions in Table below.)

D2. And now I'm going to read out a series of statements which describe continuing education institutions and I would like you to rate your comment with these statements according to a 10-point scale, where 1 means the lowest and 10 means the highest.

(Please write down "N/A" if the respondent could not give any ratings or reply unknown to the statements.)

Institution(s) / **Items**	Name 1: a) Currently studying □ b) Ever studied □ c) Know of □	Name 2: a) Currently studying □ b) Ever studied □ c) Know of □	Name 3: a) Currently studying □ b) Ever studied □ c) Know of □
a. Academic reputation of the program			
b. Academic qualifications highly regarded by employers			
c. Good reputation of the institution			
d. Good contribution to human resources training			
e. Good career opportunity of graduates			
f. Good social status of graduates			
g. Good quality of students			
h. Good quality assurance of programs/courses			
i. Good quality of tutors			
j. A wide variety of program/courses			
k. Program suiting my needs			
l. Worthwhile programs/courses			
m. Flexible in teaching and learning			

n. Good teaching and learning facilities			
o. Good services to students			
p. Convenient teaching and learning venue			
q. Give you a feeling of trust			
r. Give you a feeling of professional			
s. Give you a feeling of caring			
t. Give you a feeling of prestige			
D3. How would you rate this institution overall?			

D4. Taking all things into consideration, which of the above institutions do you consider the best?

        a. First institution   ☐
        b. Second institution   ☐
        c. Third institution   ☐
        d. Uncertain   ☐

Part E. Price Premium and CE Intentions

Questions \ Preferences	First Preference (Please write down the name of the institution in below)	Second Preference (Please write down the name of the institution in below)	Third Preference (Please write down the name of the institution in below)
Price Premium E1. What are your **THREE** most preferred continuing education providers in order of preference? **<u>show Card A</u> for reference or write down the name of institution if not on the list> or** No preference at all □ *(go to* **Part F**, **Question F1***)*			
Again, I'd like to ask you the extent to which you agree with the following statement. E2. I consider myself loyal to your favourite continuing education institutions as answered in **Question E1** above? Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree			
E3. Generally speaking, are you willing to pay more for the same or comparable program if you are studying in your favourite continuing education institutions as answered in **Question E1**?	□ Yes □ No (Go to **Q. E5** if answer No)	□ Yes □ No (Go to **Q. E5** if answer No)	□ Yes □ No (Go to **Q. E5** if answer No)
E4. And how much percentage of increase in course fee of your favourite continuing education institutions that would cause you to switch to other continuing education providers? *(Please write down the answer in the space provided. Start with 0 and ask for each alternative until they answer 'yes')* (a) 5% or below (b) 6-10% (c) 11-15% (d) 16%-20% (e) 21%-25% (f) 26% or above (g) would not switch no matter how the course fee is increased			
E5. How do you see the charges by your top THREE preferences? *(Please write down the answer in the space provided.)* (a) well above average price (b) above average price (c) average price (d) below average price (e) well below average price			

CE Intentions E6. How likely would you be to enroll in your top **THREE** favourite institutions in the future when you want to pursue a continuing education program? *(Please write down the answer in the space provided.)* (a) very unlikely (b) unlikely (c) undecided (d) likely (e) very likely			
E7. How likely would you be to recommend your top **THREE** favourite institutions to others? (a) very unlikely (b) unlikely (c) undecided (d) likely (e) very likely			

Part F. Purchase Intention in the next 12 Months

F1. How likely will you pursue studying in any one of the local continuing education institutions in the next 12 months?

□ a. Certainly   □ b. Probably → (go to **Question F2**)
□ c. Undecided   □ d. Probably Not   □ e. Certainly Not → (go to **Part G, Question G1**)

F2. If you would attend a program within the next 12 months, who do you expect will pay for the course fees? *(You can tick more than 1)*

        a. Self   □
        b. Employer   □
        c. Own Business   □
        d. Government Support   □
        e. Other, please specify_____ □

F3. How much would you expect to spend for the program(s) that you are planning to study in local continuing education institutions in the next 12 months? **<show Card D> and tick the box in below.**

        a. Below $999   □
        b. $1000 - $2999   □
        c. $3000 - $5999   □
        d. $6,000 - $9999   □
        e. $10,000 - $19,999 □
        f. $20,000 - $29,999 □
        g. $30,000 - $49,999 □
        h. $50,000- $69,999   □
        i. $70,000- $99,999   □
        j. $100,000 or above   □

Part G. Profile of Respondents:

Finally, I'd like to ask some summary details.

G1. Gender: □ a. Male   □ b. Female

G2. Age: **<show Card E>** Can you tell me which letter corresponding to your age group?

     a. 18-24   □
     b. 25-34   □
     c. 35-44   □
     d. 45-54   □
     e. 55-59   □
     f. 60-64   □
     g. Age 65 or above   □

G3. Educational Level: **<Show Card F>** Can you tell me which letter corresponding to your highest completed educational level?

     a. Form 4 or below   □
     b. Form 5 to Form 7   □
     c. Diploma/Certificate   □
     d. Associate Degree or Equivalent   □
     e. Bachelor Degree   □
     f. Master Degree/Postgraduate Diploma □
     g. PhD / Doctoral Degree   □

G4. **Average Monthly Personal Income:** **<Show Card G>** Can you tell me which letter corresponding to your average personal monthly personal income?

     a. No income   □
     b. $6,000 or below   □
     c. $6,001 - $10,000   □
     d. $10,001 - $15,000   □
     e. $15,001 - $20,000   □
     f. $20,001 - $25,000   □
     g. $25,001 - $30,000   □
     h. $30,001 - $40,000   □
     i. $40,001 - $50,000   □
     j. $50,001 or above   □

G5. Occupation: **<Show Card H>** Can you tell me which letter corresponding to your occupational type?

     a. Manager and administrators   □
     b. Professionals   □
     c. Associate professionals   □
     d. Clerks   □
     e. Service workers and shop sales workers   □
     f. Craft and related workers   □
     g. Plant and machine operators and assemblers   □
     h. Elementary occupation   □

      i. Skilled agricultural and fishery workers   ☐

      j. Full-time Student   ☐

      k. Retired person   ☐

      l. Housewife /Domestic Engineer   ☐

      m. Unemployed   ☐

      n. Own business   ☐

      o. Others, please specify: _____

This is the end of the survey. Thank you very much for your time.

Remarks:

1. This research only focuses on local corporate brands of continuing education institutions. If the response is related to any collaborative programs jointly organized with other sub-brands, local university and/or overseas institutions, please count the program to the respective local continuing education institution.

2. Hong Kong Vocational Training Council, VTC has a number of sub-brands in providing various continuing education programs, including IVE, PEAK, SHAPE, HKDI, SBI, HITDC, CCTI, MSTI, Youth College, IVDC and Skills Centre. If respondents answer any of this/these sub-brand(s), please count it as the parent brand, VTC and write down the name of sub-brand(s) in the respective question.

Card A: The Major CE Institution List

a. Hong Kong University, HKU SPACE

b. Hong Kong City University, HKCU SCS

c. Hong Kong Polytechnic University, HKPU SPEED

d. Hong Kong Baptist University, HKBU SCE

e. Hong Kong City University, HKCityU SCOPE

f. Hong Kong Open University, OUHK LIPACE

g. Hong Kong University of Science and Technology, HKUST CL3

h. Hong Kong Lingnan University, HKLU LIFE

i. Hong Kong Vocational Training Council, VTC

j. Hong Kong Management Association, HKMA

Card B: Amount Spent for CE Program in 2009

    a. $10,000 or below

    b. $10,001 - $20,000

    c. $20,001 - $30,000

    d. $30,001 - $40,000

    e. $40,001 - $50,000

    f. $50,001- $60,000

    g. $60,001- $70,000

    h. $70,001- $80,000

    i. $80,000 or above

Card C: Likert Scale for Statements regarding Brand Association

      Strongly Disagree   1   2   3   4   5   6   7   Strongly Agree

Card D: Amount Intends to Spend for the Program(s) in the Next 12 Months
      a. Below $999
      b. $1000 - $2999
      c. $3000 - $5999
      d. $6,000 - $9999
      e. $10,000 - $19,999
      f. $20,000 - $29,999
      g. $30,000 - $49,999
      h. $50,000- $69,999
      i. $70,000- $99,999
      j. $100,000 or above

Card E: Age
      a. 18-24
      b. 25-34
      c. 35-44
      d.45-54
      e. 55-59
      f. 60-64
      g. Age 65 or above

Card F: Educational Level
      a. Form 4 or below
      b. Form 5 to Form 7
      c. Diploma/Certificate
      d. Associate Degree or Equivalent
      e. Bachelor Degree
      f. Master Degree/Postgraduate Diploma
      g. PhD / Doctoral Degree

Card G: Income
      a. No income
      b. $6,000 or below
      c. $6,001 - $10,000
      d. $10,001 - $15,000
      e. $15,001 - $20,000
      f. $20,001 - $25,000
      g. $25,001 - $30,000
      h. $30,001 - $40,000
      i. $40,001 - $50,000
      j. $50,001 or above

Card H: Occupation

a. Managers and administrators:

Including administrators, commissioners and directors in government service; consuls; councillors; directors, chief executive officers, presidents, general managers, functional managers, branch manager and small business in industry, commerce, import and export trade, wholesale and retail trade, catering and lodging services, transport, electricity, gas, water and other services and agricultural and fishery sectors.

b. Professionals

Including qualified professional scientists, doctors, dentists and other medical professionals; architects, surveyors and engineers; vice-chancellors, directors, academic staff and administrators of university, post-secondary college; principals and teachers of secondary school; statisticians; mathematicians; system analysts and computer programmers; lawyers and judges; accountants; business consultants and analysts; social workers; translators and interpreters; news editors and journalists; writers; librarians and members of religious orders.

c. Associate professionals

Including science technicians, nurses and midwives, dental assistants and other health associate professionals; architectural, surveying and engineering technicians; optical and electronic equipment controllers; ship pilot and air traffic controllers; principals and teachers of primary school and kindergarten/nursery; statistical assistants; computer operators; law clerks; accounting supervisors; public relation officers; sales representatives; designers; estate managers; social work assistants; superintendents, inspectors and officers of the police and other discipline services; performers and sportsmen.

d. Clerks

Including stenographers, secretaries and typists; bookkeeping, finance, shipping, filing and personnel clerks; cashiers and tellers; receptionists and information clerk.

e. Service workers and shop sales workers

Including air hostesses and travel guides; house stewards; cook and waiters; baby-sitters; hairdressers and beauticians; rank and file staff of the police and other discipline services; transport conductors and other service workers; wholesale and retail salesman in shops; shop assistants and fashion models.

f. Craft and related workers

Including miners and quarrymen; bricklayers, carpenters and other construction workers; metal moudlers; blacksmiths; machinery, electric and electronic instrument mechanics; jewellery workers and watch makers; potters; typesetters; bakers, food and beverage processors; painters; craft workers in textile, garment, leather, rubber and plastic trades and other craft workers.

g. Plant and machine operators and assemblers

Including well drillers and borers; ore smelting furnace operators; brick and tile kilnmen; sawmill sawyers; paper makers; chemical processing plant operators; power-generating plant and boiler operators; asbestos cement products makers; metal finishers and electroplaters; dairy and other food processing machine operators; printing machine operators; machine operators for production of textile, rubber and plastic products; assemblers; drivers; seamen and other plant and machine operators.

h. Elementary occupation

Including street vendors; domestic helpers and cleaners; messengers; private security guards; watchmen; freight handlers; lift operators; construction labourers; hand packers; agricultural and fishery labourers.

i. Skilled agricultural and fishery workers

   Including farm workers, animal husbandry workers and fishermen.

j. Full-time Student

k. Retired person

   A person who has worked previously but is not currently working because of old age.

l. Housewife /Domestic Engineer

m. Unemployed

n. Own business

Source:

a-i and k above adapted from "Definition of Terms in English", 2006 population by-census, Hong Kong Government.

Appendix B: Reliability and validity test of pilot test

1. Brand Association

Table B-1. SPSS output of Reliability Statistics (Cronbach's Alpha) for Brand Association

Reliability Statistics

Cronbach's Alpha	N of Items
.925	5

Table B-2. SPSS output of Item-Total Statistics for Brand Association

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C1_ce1. This institution is an excellent continuing education institution. (HKU SPACE)	24.41	9.539	.734	.922
C2_ce1. Compared with other institutions in CE industry, this institution is unique. (HKU SPACE)	24.44	8.835	.869	.895
C3_ce1. Compared with other institutions in CE industry, this institution provides superior performance. (HKU SPACE)	24.22	9.918	.858	.902
C4_ce1. This institution meets my needs. (HKU SPACE)	24.25	9.871	.886	.898
C5_ce1. I feel I grew up with this institution. (HKU SPACE)	24.69	8.738	.754	.924

Table B-3. SPSS output of validity check (Factor Analysis) for Brand Association

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.962	79.238	79.238	3.962	79.238	79.238
2	.430	8.591	87.829			
3	.332	6.636	94.465			
4	.188	3.768	98.233			
5	.088	1.767	100.000			

Extraction Method: Principal Component Analysis.
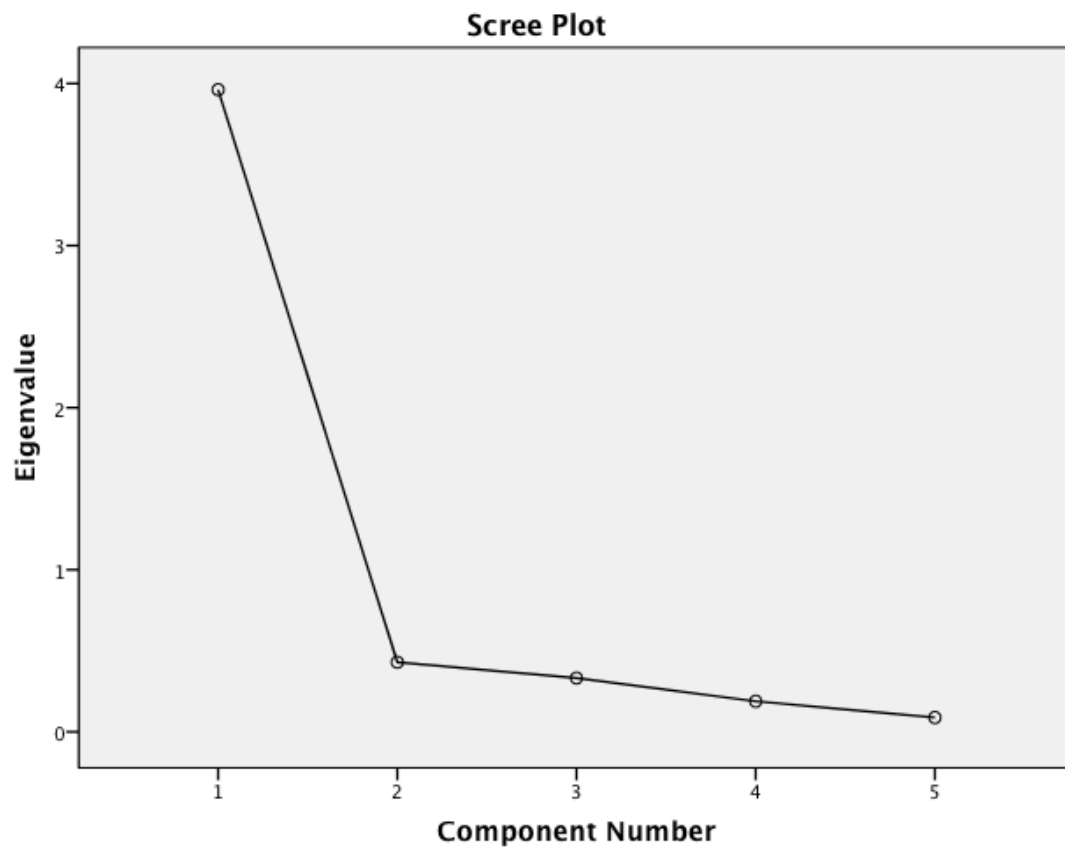
Figure B-1. Scree Plot for Brand Association

2. Perceived Quality

Table B-4. SPSS output of Reliability Statistics (Cronbach's Alpha) for Perceived Quality

Reliability Statistics

Cronbach's Alpha	N of Items
.981	20

Table B-5. SPSS output of Item-Total Statistics for Perceived Quality

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
D2a_1. Score- Academic reputation of the program	165.94	285.415	.867	.980
D2b_1. Score: Academic qualifications highly regarded by employers	166.13	287.597	.763	.981
D2c_1. Score: Good reputation of the institution	165.69	287.383	.891	.980
D2d_1. Score: Good contribution to human resources training	166.00	284.452	.851	.980
D2e_1. Score: Good career opportunity of graduates	166.22	290.886	.682	.982
D2f_1. Score: Good social status of graduates	166.22	286.693	.832	.980
D2g_1. Score: Good quality of students	166.31	285.383	.843	.980
D2h_1. Score: Good quality assurance of programs/courses	165.94	283.738	.918	.980
D2i_1. Score: Good quality of tutors	166.06	286.512	.925	.980
D2j_1. Score: A wide variety of programs/courses	165.78	285.854	.829	.980
D2k_1. Score: Program suiting my needs	166.03	285.322	.845	.980
D2l_1. Score: Worthwhile programs/courses	166.09	282.604	.914	.980
D2m_1. Score: Flexible in teaching and learning	166.38	284.371	.826	.980
D2n_1. Score: Good teaching and learning facilities	166.06	284.383	.840	.980
D2o_1. Score: Good services to students	166.34	285.265	.777	.981
D2p_1. Score: Convenient teaching and learning venue	165.91	289.636	.804	.981
D2q_1. Score: Give you a feeling of trust	165.84	285.168	.910	.980
D2r_1. Score: Give you a feeling of professional	165.75	286.839	.905	.980
D2s_1. Score: Give you a feeling of caring	166.31	281.899	.846	.980
D2t_1. Score: Give you a feeling of prestige	165.84	285.555	.839	.980

Table B-6. SPSS output of validity check (Factor Analysis) for Perceived Quality

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.903	74.514	74.514	14.903	74.514	74.514
2	1.072	5.362	79.876	1.072	5.362	79.876
3	.746	3.728	83.603			
4	.654	3.272	86.875			
5	.534	2.672	89.547			
6	.430	2.150	91.698			
7	.359	1.796	93.494			
8	.294	1.472	94.965			
9	.252	1.260	96.226			
10	.184	.919	97.145			
11	.156	.779	97.924			
12	.110	.549	98.473			
13	.082	.408	98.881			
14	.065	.323	99.204			
15	.052	.258	99.462			
16	.039	.196	99.658			
17	.035	.175	99.833			
18	.017	.084	99.917			
19	.009	.047	99.964			
20	.007	.036	100.000			

Extraction Method: Principal Component Analysis.
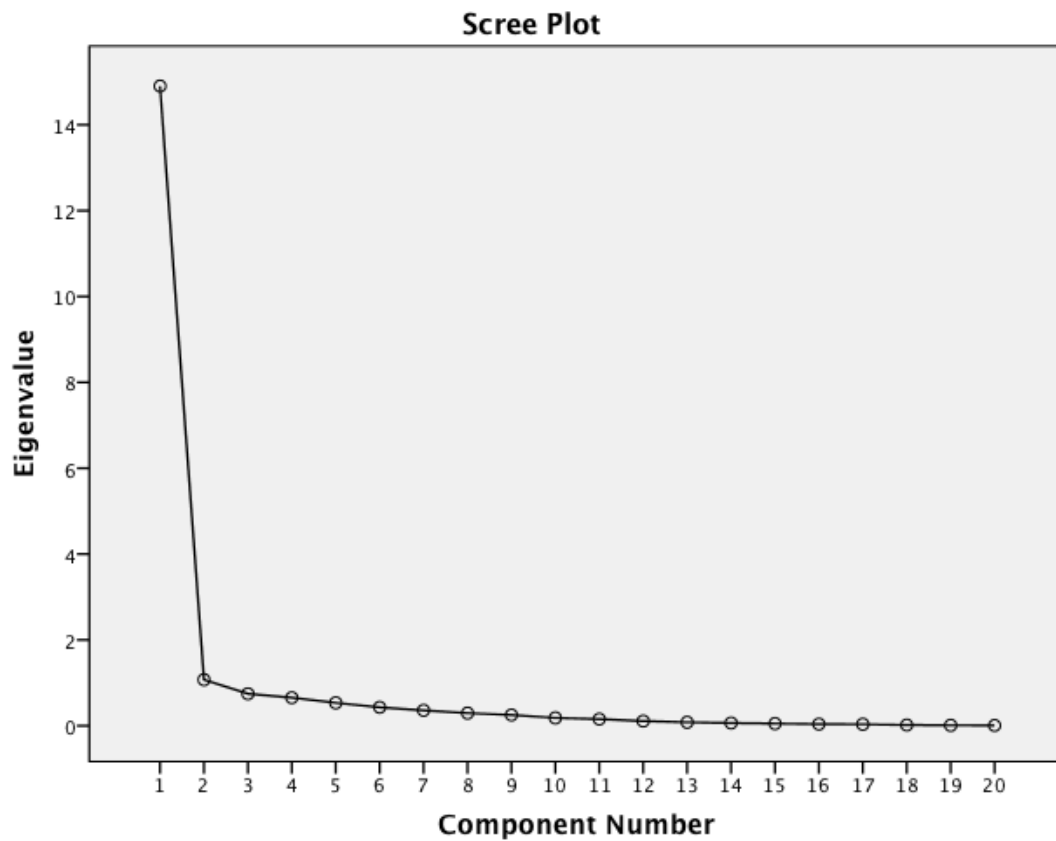
Figure B-2. Scree Plot for Perceived Quality

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Appendix C: Ethics approval letter

MACQUARIE UNIVERSITY

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15 June 2010

Professor Greg Elliott
Associate Dean, International
Faculty of Business and Economics
Macquarie University NSW 2109

Reference: 5201000693(D)

Dear Professor Elliott

FINAL APPROVAL

Title of project: *"Towards an integrated Model of Brand Valuation: The Case of Hong Kong Continuing Education Program"*.

Thank you for your recent correspondence. Your response has addressed the issues raised by the Human Research Ethics Committee and you may now commence your research. The following personnel are authorised to conduct this research:

Professor Greg Elliott - Chief Investigator/Supervisor
Ms Nga Yee Lee - Co-Investigator

Please note the following standard requirements of approval:

1. The approval of this project is **conditional** upon your continuing compliance with the *National Statement on Ethical Conduct in Human Research (2007)*.

2. Approval will be for a period of five (5 years) subject to the provision of annual reports. **Your first progress report is due on 15 June 2011**

   If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report on the project.

   Progress Reports and Final Reports are available at the following website:
   http://www.research.mq.edu.au/researchers/ethics/human_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. Please notify the Committee of any amendment to the project.

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that might affect continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at: http://www.research.mq.edu.au/policy

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HUMAN RESEARCH ETHICS COMMITTEE
MACQUARIE UNIVERSITY

http://www.research.mq.edu.au/researchers/ethics/human_ethics

ABN 90 952 801 237 : CRICOS Provider No 00002J

www.mq.edu.au

Appendix D: Descriptive data of CE industry

Table D-1. Gender of study respondents compared with Hong Kong Government census figures for 2006 and 2011

Gender	Survey 2010	% of total	HK Govt census 2006[a]	% of total	HK Govt census 2010[b] (projection)	% of total
Male	194	48.5	3,272,956	47.7	3,310,500	46.8
Female	206	51.5	3,591,390	52.3	3,757,300	53.2
Total	400	100.0	6,864,346	100.0	7,067,800	100.0

Source:
a. Hong Kong Government by-census 2006, (Census and Statistics Department, 2007).
b. Women and Men in Hong Kong Key Statistics 2011 Edition, (Census and Statistics Department, 2011a).

Table D-2. Age of study respondents compared with Hong Kong Government census figures for 2006 and 2010

Age	Survey 2010	% of total	HK by census 2006[a]	% of total	HK mid-year Population 2010[b] (Projection)	% of total
18–24 (survey) 15–24 (census)	79	19.7	909,005	15.3	891,000	14.3
25–34	116	28.9	1,052,126	17.8	1,085,200	17.5
35–44	85	21.2	1,248,855	21.1	1,159,100	18.7
45–54	78	19.5	1,193,788	20.1	1,297,900	20.9
55–64	29	7.2	668,101	11.3	864,500	13.9
65+	14	3.5	852,796	14.4	912,100	14.7
Total	400	100.0	5,924,671	100.0	6,209,800	100.0

Source:
a. Hong Kong Government by-census 2006, (Census and Statistics Department, 2007).
b. Women and Men in Hong Kong Key Statistics 2011 Edition, (Census and Statistics Department, 2011a).

Table D-3. Highest level of education of study respondents compared with Hong Kong Government census figures for 2006

Highest level of education	Survey 2010	% of total	HK Govt census 2006	% of total
Form 4 or below	11	2.8	2,969,268	75.0
Forms 5–7	89	22.3	366,424	6.2
Diploma/certificate	65	16.3	170,524	2.9
Associate degree or equivalent	35	8.8	180,822	3.1
Bachelor degree	119	29.8	767,256[#]	13.0
Masters degree/postgraduate diploma	73	18.3		
PhD/doctoral degree	8	2.0		
Total	400	100.0	5,924,671	100.0

#: Government census figure includes Bachelor degree, Masters degree/postgraduate diploma and PhD/doctoral degree holders.
Source: Hong Kong Government by-census 2006, (Census and Statistics Department, 2007).

Table D-4. Occupation of study respondents compared with Hong Kong Government census figures for 2006

Occupation	Survey 2010	% of total	HK Govt census 2006	% of total
Managers and administrators	63	15.8	361,891	10.8
Professionals	66	16.5	205,435	6.1
Associate professionals	42	10.5	542,309	16.1
Clerks	87	21.8	567,964	16.9
Service workers	47	11.8	550,855	16.4
Craft and related workers	5	1.3	286,007	8.5
Plant and machine operators	1	0.3	208,409	6.2
Elementary occupation	8	2.0	633,227	18.7
Others	81	23.4	9,639	0.3
Total	400	100.0	3,365,736	100.0

Source: Hong Kong Government by-census 2006, (Census and Statistics Department, 2007).

Table D-5. Respondents' unaided and prompted brand awareness of Hong Kong CE institutions

Institution	Number who recalled unaided	% who recalled unaided	Unaided ranking	Number who recalled when prompted	% who recalled when prompted	Number who recalled (unaided + prompted)	% who recalled (unaided + prompted)	Unaided + prompted ranking
HKU SPACE	355	88.8	1	35	8.8	390	97.5	1
HKCU SCS	115	28.8	2	190	47.5	305	76.3	3
HKPU SPEED	80	20.0	3	213	53.3	293	73.3	4
HKBU SCE	52	13.0	6	179	44.8	231	57.8	6
HKCityU SCOPE	64	16.0	5	190	47.5	254	63.5	5
OUHK/ LIPACE	52	13.0	6	164	41.0	216	54.0	8
HKUST CL3	12	3.0	9	122	30.5	134	33.5	10
HKLU LIFE	9	2.3	10	137	34.3	146	36.5	9
VTC/IVE	74	18.5	4	259	64.8	333	83.3	2
HKMA	23	5.8	8	200	50.0	223	55.8	7
HKFTU	28	7.0	7	NA	NA			
Others (16 institutions)	39	9.8 (average <1%)	NA	NA	NA			

Table D-6. Subjects taken at CE institutions by respondents in 2009

Subject taken in 2009	Number of students in 2009	Number who had studied this subject before 2009
Business management	30	19
Languages	25	11
Law	24	9
Finance	14	6
Medicine science	10	5
Accounting	9	3
IT/computing/e-commerce	5	5
Others	5	2
Education	4	3
Pharmaceutical	4	2
Arts & crafts/design/performance arts	3	1
Housing & built environment	3	1
Social science	2	0
Life/biomedical & medical laboratory	2	2
Sports and recreation management	1	1
Engineering	1	0
Philosophy/literary/cultural studies	1	0
Sociology/social work & psychology	1	0
Transport, logistics and urban studies	1	2
Hospitality & tourism	0	0
Media & communication	0	0
General & environment sciences	0	0
Nursing studies and health care	0	0
Library and information science	0	0
Total	**145**	**72**

Table D-7. Respondents' mean ratings on brand association

Name of CE	Excellent institution	Unique	Superior performance	Meets my needs	Feel I grew up with	No of respondents answering questions	% of respondents answering questions
HKU SPACE	5.78	5.49	5.65	5.43	5.04	390	97.5%
HKCU SCS	4.51	4.29	4.29	3.98	3.68	305	76.3%
HKPU SPEED	4.30	4.08	4.15	3.91	3.29	293	73.3%
HKBU SCE	3.58	3.46	3.42	3.34	2.91	231	57.8%
HKCityU SCOPE	3.97	3.77	3.82	3.64	3.07	254	63.5%
OUHK/LIPACE	3.56	3.56	3.50	3.26	3.04	216	54.0%
HKUST CL3	3.49	3.47	3.40	3.13	2.74	134	33.5%
HKLU LIFE	2.98	2.84	2.77	2.68	2.44	146	36.5%
VTC/IVE	3.71	3.77	3.59	3.06	3.06	333	83.3%
HKMA	3.73	3.64	3.56	3.47	3.13	223	55.8%

Table D-8. Respondents' opinion of best CE institution

Name of CE Institution	Frequency	Per cent
HKU SPACE	267	71.4
HKPU SPEED	18	4.8
HKCU SCS	13	3.5
OUHK/OUHK LIPACE	11	2.9
VTC/IVE	8	2.1
HKBU SCE	6	1.6
HKMA	6	1.6
HKCityU SCOPE	5	1.3
HKUST CL3	3	0.8
HKCityU	1	0.3
HKFTU	1	0.3
KAPLAN Education	1	0.3
Unisoft	1	0.3
Wall Street Institute	1	0.3
Undecided	32	8.6
Total	374	100.0

Table D-9. Respondents' ratings of top three preferred CE institutions in the study

Name of CE Institution	1st preferred CE institution	%	2nd preferred CE institution	%	3rd preferred CE institution	%
HKU SPACE	236	74.9	37	14.1	10	5.0
HKPU SPEED	15	4.8	45	17.1	39	19.4
VTC/IVE	15	4.8	20	7.6	27	13.4
HKCU SCS	14	4.4	75	28.5	37	18.4
OUHK/OUHK LIPACE	7	2.2	19	7.2	12	6.0
HKBU SCE	6	1.9	14	5.3	24	11.9
HKCityU SCOPE	5	1.6	28	10.6	20	10.0
HKMA	5	1.6	15	5.7	19	9.5
HKUST CL3	4	1.3	3	1.1	7	3.5
KAPLAN Education	2	0.6	1	0.4	0	0.0
HKU	1	0.3	0	0.0	0	0.0
HKCityU	1	0.3	0	0.0	0	0.0
HKFTU	1	0.3	2	0.8	0	0.0
Unisoft	1	0.3	0	0.0	0	0.0
HK British Council	1	0.3	0	0.0	0	0.0
Fevawork	1	0.3	0	0.0	0	0.0
HKCU	0	0.0	2	0.8	0	0.0
First Japanese School	0	0.0	1	0.4	0	0.0
HKICPA	0	0.0	1	0.4	0	0.0
Caritas Education	0	0.0	0	0.0	1	0.5
HKLU LIFE	0	0.0	0	0.0	4	2.0
HKUST	0	0.0	0	0.0	1	0.5
Total	315	100.0	263	100.0	201	100.0

Table D-10. Respondents' loyalty towards top three preferred CE institutions

Loyalty to	1st preferred CE institution	%	2nd preferred CE institution	%	3rd preferred CE institution	%
Loyal to strongly loyal	276	87.6	201	76.4	106	52.7
Neutral	14	4.4	25	9.5	43	21.4
Not loyal to strongly not loyal	25	8	37	14.1	52	25.9
Total	315	100.0	263	100.0	201	100.0

Table D-11. Respondents' willingness to pay more program fee for the program offered by their top three preferred CE institutions

Willingness to pay more for the program fee of:	1st preferred CE institution	%	2nd preferred CE institution	%	3rd preferred CE institution	%
Yes	226	71.7	151	57.4	96	47.8
No	89	28.3	112	42.6	105	52.2
Total	315	100.0	263	100.0	201	100.0

Table D-12. Respondents' willingness to shift to other CE institutions if the program fees of their top three preferred CE institutions were higher

Shift to other CE institutions if the program fee is increased:	1st most preferred CE institution	%	2nd most preferred CE institution	%	3rd most preferred CE institution	%
5% or below	13	5.8	18	11.9	10	10.4
6-10%	36	15.9	27	17.9	13	13.5
11-15%	49	21.7	31	20.5	22	22.9
16-20%	35	15.5	22	14.6	14	14.6
21-25%	35	15.5	23	15.2	14	14.6
26% or more	32	14.2	15	9.9	9	9.4
price inelastic	26	11.5	15	9.9	14	14.6
Total	226	100.0	151	100.0	96	100.0

Table D-13. Respondents' perceived CE program fees of their top three preferred CE institutions

Perceived CE program fees	1st preferred CE institution	%	2nd preferred CE institution	%	3rd preferred CE institution	%
Above and well above av. price	224	71.1	149	56.6	98	48.8
Average	86	27.3	105	39.9	89	44.3
Below and well below av. price	4	1.3	8	3.1	13	6.5
Unknown	1	0.3	1	0.4	1	0.5
Total	315	100.0	263	100.0	201	100

Table D-14. Respondents' intention to buy and recommend to others a CE program of their top three preferred CE institutions

Respondents Likely & very likely:	1st preferred CE institution	%	2nd preferred CE institution	%	3rd preferred CE institution	%
To buy a CE program of	248	78.7	150	57.0	81	40.3
To recommend a CE program to others if the program offered by	282	89.5	189	71.9	111	55.2

Appendix E: PCA and SmartPLS output of main study

1. Model A

Table E-1. SPSS output of PCA for Model A

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.461	69.228	69.228	3.461	69.228	69.228
2	.615	12.300	81.528			
3	.392	7.834	89.362			
4	.331	6.625	95.987			
5	.201	4.013	100.000			

Extraction Method: Principal Component Analysis.

Table E-2. SmartPLS output of AVE, R^2, and Cronbach's Alpha for Model A

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
B asso	0.692058	0.917984	0.000578	0.887548	0.692058	0.000321
B awareness	1.000000	1.000000		1.000000	1.000000	
B loyalty	1.000000	1.000000	0.283633	1.000000	1.000000	0.238576
Paymore	1.000000	1.000000	0.391859	1.000000	1.000000	0.137612
Pursue	1.000000	1.000000	0.062494	1.000000	1.000000	0.029213
Quality	1.000000	1.000000	0.462650	1.000000	1.000000	0.462624
Recommend	1.000000	1.000000	0.927068	1.000000	1.000000	-0.006757

Table E-3. SmartPLS output of Latent Variable Correlations for Model A

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
B asso	1.000000						
B awareness	0.024047	1.000000					
B loyalty	0.509041	0.042106	1.000000				
Paymore	0.450125	0.106717	0.597000	1.000000			
Pursue	0.198910	0.052257	0.225194	0.386618	1.000000		
Quality	0.680165	0.011217	0.458733	0.362883	0.167884	1.000000	
Recommend	0.491105	-0.031131	0.960093	0.623861	0.226429	0.451438	1.000000

Table E-4. SmartPLS output of Cross Loadings for Model A

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
CE1	0.024047	1.000000	0.042106	0.106717	0.052257	0.011217	-0.031131
Excellent_ce1	0.837875	-0.004580	0.443367	0.373417	0.101182	0.607180	0.369909
Grew_ce1	0.753880	-0.019618	0.448959	0.331570	0.126095	0.458885	0.462227
Loyal_1	0.509041	0.042106	1.000000	0.597000	0.225194	0.458733	0.960093
Meets_ce1	0.876978	0.129484	0.468529	0.371978	0.295608	0.642515	0.452494
PAYMOREFEE_1	0.450125	0.106717	0.597000	1.000000	0.386618	0.362883	0.623861
Pursue	0.198910	0.052257	0.225194	0.386618	1.000000	0.167884	0.226429
Recommend_1	0.491105	-0.031131	0.960093	0.623861	0.226429	0.451438	1.000000
ScoreOverall_1	0.680165	0.011217	0.458733	0.362883	0.167884	1.000000	0.451438
Superior_ce1	0.892570	-0.010796	0.406129	0.376279	0.191609	0.569469	0.413894
Unique_ce1	0.790033	-0.013056	0.342110	0.423856	0.089065	0.536310	0.339067

Table E-5. SmartPLS bootstrapping result of Path Coefficients for Model A

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
B asso -> B loyalty	0.365700	0.368968	0.117426	0.117426	3.114303
B asso -> Paymore	0.195173	0.192718	0.093560	0.093560	2.086062
B asso -> Pursue	0.097165	0.097347	0.124194	0.124194	0.782365
B asso -> Quality	0.680288	0.678221	0.049646	0.049646	13.702695
B asso -> Recommend	-0.006832	-0.007760	0.043119	0.043119	0.158439
B awareness -> B asso	0.024047	0.036220	0.057501	0.057501	0.418204
B awareness -> B loyalty	0.030960	0.068696	0.109471	0.109471	0.282815
B awareness -> Paymore	0.081240	0.053802	0.104705	0.104705	0.775895
B awareness -> Pursue	0.042818	0.067573	0.077376	0.077376	0.553379
B awareness -> Quality	-0.005142	-0.014123	0.037241	0.037241	0.138066
B awareness -> Recommend	-0.071527	-0.065065	0.040545	0.040545	1.764134
B loyalty -> Paymore	0.492775	0.504196	0.074399	0.074399	6.623363
B loyalty -> Pursue	0.161423	0.146359	0.108981	0.108981	1.481197
B loyalty -> Recommend	0.958748	0.956303	0.020859	0.020859	45.962328
Quality -> B loyalty	0.209649	0.199639	0.111955	0.111955	1.872616
Quality -> Paymore	0.003170	0.002811	0.105103	0.105103	0.030164
Quality -> Pursue	0.027265	0.036690	0.146109	0.146109	0.186607
Quality -> Recommend	0.017077	0.020535	0.041049	0.041049	0.416025

Table E-6. SmartPLS bootstrapping result of Outer Loadings for Model A

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
CE1 <- B awareness	1.000000	1.000000	0.000000		
Excellent_ce1 <- B asso	0.837875	0.837715	0.039231	0.039231	21.357279
Grew_ce1 <- B asso	0.753880	0.748984	0.052314	0.052314	14.410621
Loyal_1 <- B loyalty	1.000000	1.000000	0.000000		
Meets_ce1 <- B asso	0.876978	0.875349	0.023201	0.023201	37.798574
PAYMOREFEE_1 <- Paymore	1.000000	1.000000	0.000000		
Pursue <- Pursue	1.000000	1.000000	0.000000		
Recommend_1 <- Recommend	1.000000	1.000000	0.000000		
ScoreOverall_1 <- Quality	1.000000	1.000000	0.000000		
Superior_ce1 <- B asso	0.892570	0.893081	0.019485	0.019485	45.807656
Unique_ce1 <- B asso	0.790033	0.787991	0.049029	0.049029	16.113502

Table E-7. SmartPLS output of R^2 when Latent Variable "Brand Awareness" was removed from Model A

	R Square
B asso	
B loyalty	0.282670
Paymore	0.385283
Pursue	0.060645
Quality	0.462567
Recommend	0.921962

Table E-8. SmartPLS output of R^2 when Latent Variable "Brand Association" was removed from Model A

	R Square
B awareness	
B loyalty	0.211802
Paymore	0.373264
Pursue	0.057885
Quality	0.000126
Recommend	0.927045

Table E-9. SmartPLS output of R^2 when Latent Variable "Perceived Quality" was removed from Model A

	R Square
B asso	0.000556
B awareness	
B loyalty	0.261396
Paymore	0.391413
Pursue	0.062137
Recommend	0.926925

Table E-10. SmartPLS output of R^2 when Latent Variable "Brand Loyalty" was removed from Model A

	R Square
B asso	0.000587
B awareness	
Paymore	0.218193
Pursue	0.043844
Quality	0.462993
Recommend	0.267854

Table E-11. SmartPLS blindfolding output of Q^2, with D = 7, for Model A

	CV Red.
B asso	0.000698
Quality	0.469179
B loyalty	0.281079
Pursue	0.086765
Recommend	0.894307
Paymore	0.399085

Table E-12. SmartPLS blindfolding output of Q^2, with D = 37, for Model A

	CV Red.
B asso	0.000564
Quality	0.463543
B loyalty	0.281050
Pursue	0.067818
Recommend	0.923674
Paymore	0.392175

Table E-13. SmartPLS blindfolding output of Q^2, with D = 67, for Model A

	CV Red.
B asso	0.000711
Quality	0.460073
B loyalty	0.283120
Pursue	0.056028
Recommend	0.927190
Paymore	0.389184

Table E-14. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Awareness" was removed from Model A

	CV Red.
Quality	0.446632
B loyalty	0.283101
Pursue	0.101697
Recommend	0.918204
Paymore	0.378035

Table E-15. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Awareness" was removed from Model A

	CV Red.
Quality	0.463131
B loyalty	0.280037
Pursue	0.062555
Recommend	0.920323
Paymore	0.378934

Table E-16. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Awareness" was removed from Model A

	CV Red.
Quality	0.459503
B loyalty	0.273615
Pursue	0.047687
Recommend	0.921303
Paymore	0.384901

Table E-17. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Association" was removed from Model A

	CV Red.
Quality	0.000862
B loyalty	0.214876
Pursue	0.015014
Recommend	0.919220
Paymore	0.378215

Table E-18. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Association" was removed from Model A

	CV Red.
Quality	-0.000059
B loyalty	0.214333
Pursue	0.061157
Recommend	0.926457
Paymore	0.370298

Table E-19. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Association" was removed from Model A

	CV Red.
Quality	0.000009
B loyalty	0.210269
Pursue	0.053600
Recommend	0.926886
Paymore	0.375613

Table E-20. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Perceived Quality" was removed from Model A

	CV Red.
B loyalty	0.256101
Pursue	0.077687
Recommend	0.898083
Paymore	0.395616

Table E-21. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Perceived Quality" was removed from Model A

	CV Red.
B loyalty	0.260844
Pursue	0.062863
Recommend	0.926088
Paymore	0.388968

Table E-22. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Perceived Quality" was removed from Model A

	CV Red.
B loyalty	0.262891
Pursue	0.058020
Recommend	0.926674
Paymore	0.389322

Table E-23. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Loyalty" was removed from Model A

	CV Red.
Pursue	0.085465
Recommend	0.265103
Paymore	0.226478

Table E-24. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Loyalty" was removed from Model A

	CV Red.
Pursue	0.047009
Recommend	0.273126
Paymore	0.215885

Table E-25. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Loyalty" was removed from Model A

	CV Red.
Pursue	0.031504
Recommend	0.269581
Paymore	0.215005

2. Model B

Table E-26. SmartPLS output of AVE, R^2, and Cronbach's Alpha for Model B

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
B asso	0.691877	0.917936	0.000620	0.887548	0.691877	0.000320
B awareness	1.000000	1.000000		1.000000	1.000000	
B loyalty	1.000000	1.000000	0.317217	1.000000	1.000000	0.229353
Paymore	1.000000	1.000000	0.391880	1.000000	1.000000	0.140200
Pursue	1.000000	1.000000	0.063840	1.000000	1.000000	0.036048
Quality	0.533180	0.957381	0.347132	0.952800	0.533180	0.174760
Recommend	1.000000	1.000000	0.927051	1.000000	1.000000	-0.002558

Table E-27. SmartPLS output of Latent Variable Correlations for Model B

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
B asso	1.000000						
B awareness	0.024891	1.000000					
B loyalty	0.509589	0.042106	1.000000				
Paymore	0.450470	0.106717	0.597000	1.000000			
Pursue	0.199638	0.052257	0.225194	0.386618	1.000000		
Quality	0.588985	0.029793	0.492934	0.357843	0.119037	1.000000	
Recommend	0.492076	-0.031131	0.960093	0.623861	0.226429	0.482918	1.000000

Table E-28. SmartPLS output of Cross Loadings for Model B

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
CE1	0.024891	1.000000	0.042106	0.106717	0.052257	0.029793	-0.031131
Excellent_ce1	0.834606	-0.004580	0.443367	0.373417	0.101182	0.487789	0.369909
Grew_ce1	0.757614	-0.019618	0.448959	0.331570	0.126095	0.411574	0.462227
Loyal_1	0.509589	0.042106	1.000000	0.597000	0.225194	0.492934	0.960093
Meets_ce1	0.878582	0.129484	0.468529	0.371978	0.295608	0.599069	0.452494
PAYMOREFEE_1	0.450470	0.106717	0.597000	1.000000	0.386618	0.357843	0.623861
Pursue	0.199638	0.052257	0.225194	0.386618	1.000000	0.119037	0.226429
Recommend_1	0.492076	-0.031131	0.960093	0.623861	0.226429	0.482918	1.000000
ScoreA_1	0.492656	0.025976	0.380686	0.245667	-0.025299	0.712100	0.383671
ScoreB_1	0.232531	0.017414	0.153201	0.240512	0.099064	0.459642	0.150424
ScoreC_1	0.512071	0.043810	0.439424	0.285963	0.015109	0.779982	0.423646
ScoreD_1	0.431773	0.029399	0.320746	0.205141	0.148624	0.765940	0.360974
ScoreE_1	0.334854	0.026338	0.301488	0.169825	0.040522	0.771459	0.285946
ScoreF_1	0.285011	-0.011068	0.259172	0.287784	0.179144	0.699508	0.249594
ScoreG_1	0.372335	-0.020929	0.201053	0.162019	-0.056568	0.680417	0.232632
ScoreH_1	0.417493	-0.006630	0.398530	0.228964	0.037056	0.865551	0.384745
ScoreI_1	0.325922	-0.088355	0.323743	0.204069	-0.080076	0.648381	0.346576
ScoreJ_1	0.482964	0.040673	0.396901	0.128664	0.094756	0.628010	0.339547
ScoreK_1	0.449537	0.101440	0.491818	0.296787	0.127223	0.768136	0.485464
ScoreL_1	0.514682	0.009564	0.497923	0.354110	0.094788	0.860529	0.508018
ScoreM_1	0.339099	-0.103071	0.173471	0.184749	0.182262	0.669136	0.174402
ScoreN_1	0.279062	0.004457	0.307876	0.177376	0.081269	0.786503	0.296196
ScoreO_1	0.417409	-0.046874	0.314506	0.235353	0.109431	0.745230	0.309045
ScoreP_1	0.412805	0.082763	0.387361	0.328684	0.174210	0.757709	0.388731
ScoreQ_1	0.556685	0.110887	0.502465	0.366938	0.090049	0.811540	0.505354
ScoreR_1	0.505555	0.005519	0.365079	0.351884	0.174963	0.781910	0.340483
ScoreS_1	0.505652	0.107803	0.336038	0.298132	0.091499	0.715265	0.317386
ScoreT_1	0.461310	-0.046617	0.298739	0.313160	0.149724	0.575200	0.229830
Superior_ce1	0.890181	-0.010796	0.406129	0.376279	0.191609	0.434490	0.413894
Unique_ce1	0.790259	-0.013056	0.342110	0.423856	0.089065	0.497360	0.339067

Table E-29. SmartPLS bootstrapping result of Path Coefficients for Model B

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
B asso -> B loyalty	0.335440	0.319966	0.106855	0.106855	3.139211
B asso -> Paymore	0.200023	0.207494	0.088026	0.088026	2.272331
B asso -> Pursue	0.137932	0.136330	0.109399	0.109399	1.260814
B asso -> Quality	0.588608	0.594827	0.061259	0.061259	9.608475
B asso -> Recommend	-0.002592	-0.003096	0.042337	0.042337	0.061227
B awareness -> B asso	0.024891	0.038932	0.064473	0.064473	0.386075
B awareness -> B loyalty	0.024978	0.077038	0.124469	0.124469	0.200680
B awareness -> Paymore	0.081094	0.044398	0.107447	0.107447	0.754732
B awareness -> Pursue	0.042843	0.074393	0.085542	0.085542	0.500840
B awareness -> Quality	0.015142	0.006666	0.045897	0.045897	0.329910
B awareness -> Recommend	-0.071809	-0.059507	0.043464	0.043464	1.652139
B loyalty -> Paymore	0.494741	0.506475	0.079346	0.079346	6.235254
B loyalty -> Pursue	0.178463	0.156500	0.097870	0.097870	1.823467
B loyalty -> Recommend	0.957157	0.953464	0.021932	0.021932	43.641933
Quality -> B loyalty	0.294621	0.304216	0.102479	0.102479	2.874925
Quality -> Paymore	-0.006259	-0.017392	0.098587	0.098587	0.063482
Quality -> Pursue	-0.051450	-0.037827	0.126431	0.126431	0.406940
Quality -> Recommend	0.014769	0.017998	0.037347	0.037347	0.395440

Table E-30. SmartPLS bootstrapping result of Outer Loadings for Model B

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
CE1 <- B awareness	1.000000	1.000000	0.000000		
Excellent_ce1 <- B asso	0.834606	0.833198	0.039591	0.039591	21.080874
Grew_ce1 <- B asso	0.757614	0.757429	0.052144	0.052144	14.529224
Loyal_1 <- B loyalty	1.000000	1.000000	0.000000		
Meets_ce1 <- B asso	0.878582	0.878719	0.021887	0.021887	40.141342
PAYMOREFEE_1 <- Paymore	1.000000	1.000000	0.000000		
Pursue <- Pursue	1.000000	1.000000	0.000000		
Recommend_1 <- Recommend	1.000000	1.000000	0.000000		
ScoreA_1 <- Quality	0.712100	0.707648	0.048627	0.048627	14.644263
ScoreB_1 <- Quality	0.459642	0.466321	0.145768	0.145768	3.153243
ScoreC_1 <- Quality	0.779982	0.780259	0.038952	0.038952	20.024397
ScoreD_1 <- Quality	0.765940	0.764188	0.037780	0.037780	20.273755
ScoreE_1 <- Quality	0.771459	0.769695	0.041403	0.041403	18.632791
ScoreF_1 <- Quality	0.699508	0.696738	0.063652	0.063652	10.989595
ScoreG_1 <- Quality	0.680417	0.678789	0.062374	0.062374	10.908623
ScoreH_1 <- Quality	0.865551	0.862976	0.031635	0.031635	27.360518
ScoreI_1 <- Quality	0.648381	0.640847	0.092867	0.092867	6.981825
ScoreJ_1 <- Quality	0.628010	0.627865	0.084270	0.084270	7.452373
ScoreK_1 <- Quality	0.768136	0.767010	0.040346	0.040346	19.038489
ScoreL_1 <- Quality	0.860529	0.861827	0.026057	0.026057	33.024539
ScoreM_1 <- Quality	0.669136	0.666659	0.064945	0.064945	10.303185
ScoreN_1 <- Quality	0.786503	0.782580	0.042186	0.042186	18.643522
ScoreO_1 <- Quality	0.745230	0.743360	0.046045	0.046045	16.184954
ScoreP_1 <- Quality	0.757709	0.755278	0.042072	0.042072	18.010015
ScoreQ_1 <- Quality	0.811540	0.814363	0.029795	0.029795	27.237696
ScoreR_1 <- Quality	0.781910	0.780674	0.042405	0.042405	18.438977
ScoreS_1 <- Quality	0.715265	0.716785	0.066111	0.066111	10.819115
ScoreT_1 <- Quality	0.575200	0.574726	0.092860	0.092860	6.194250
Superior_ce1 <- B asso	0.890181	0.890929	0.021356	0.021356	41.682062
Unique_ce1 <- B asso	0.790259	0.787868	0.047864	0.047864	16.510479

3. Model B´

Table E-31. SPSS output of PCA for Model B´

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.057	61.977	61.977	8.057	61.977	61.977
2	1.151	8.850	70.828	1.151	8.850	70.828
3	.788	6.062	76.889			
4	.661	5.084	81.974			
5	.527	4.054	86.028			
6	.427	3.288	89.316			
7	.351	2.703	92.018			
8	.269	2.067	94.085			
9	.240	1.848	95.934			
10	.198	1.523	97.457			
11	.129	.992	98.450			
12	.118	.907	99.357			
13	.084	.643	100.000			

Extraction Method: Principal Component Analysis.

Table E-32. SmartPLS output of AVE, R^2, and Cronbach's Alpha for Model B´

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
B asso	0.691827	0.917914	0.000632	0.887548	0.691827	0.000320
B awareness	1.000000	1.000000		1.000000	1.000000	
B loyalty	1.000000	1.000000	0.326049	1.000000	1.000000	0.226285
Paymore	1.000000	1.000000	0.391844	1.000000	1.000000	0.142087
Pursue	1.000000	1.000000	0.064764	1.000000	1.000000	0.036780
Quality	0.618773	0.954615	0.339726	0.948487	0.618773	0.201578
Recommend	1.000000	1.000000	0.927360	1.000000	1.000000	-0.007505

Table E-33. SmartPLS output of Latent Variable Correlations for Model B´

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
B asso	1.000000						
B awareness	0.025138	1.000000					
B loyalty	0.509798	0.042106	1.000000				
Paymore	0.450101	0.106717	0.597000	1.000000			
Pursue	0.200174	0.052257	0.225194	0.386618	1.000000		
Quality	0.581590	0.053060	0.505259	0.357448	0.114367	1.000000	
Recommend	0.492337	-0.031131	0.960093	0.623861	0.226429	0.500447	1.000000

Table E-34. SmartPLS output of Cross Loadings for Model B´

	B asso	B awareness	B loyalty	Paymore	Pursue	Quality	Recommend
CE1	0.025138	1.000000	0.042106	0.106717	0.052257	0.053060	-0.031131
Excellent_ce1	0.834155	-0.004580	0.443367	0.373417	0.101182	0.477988	0.369909
Grew_ce1	0.758258	-0.019618	0.448959	0.331570	0.126095	0.408470	0.462227
Loyal_1	0.509798	0.042106	1.000000	0.597000	0.225194	0.505259	0.960093
Meets_ce1	0.879563	0.129484	0.468529	0.371978	0.295608	0.603262	0.452494
PAYMOREFEE_1	0.450101	0.106717	0.597000	1.000000	0.386618	0.357448	0.623861
Pursue	0.200174	0.052257	0.225194	0.386618	1.000000	0.114367	0.226429
Recommend_1	0.492337	-0.031131	0.960093	0.623861	0.226429	0.500447	1.000000
ScoreA_1	0.492291	0.025976	0.380686	0.245667	-0.025299	0.733135	0.383671
ScoreC_1	0.511648	0.043810	0.439424	0.285963	0.015109	0.793679	0.423646
ScoreD_1	0.431457	0.029399	0.320746	0.205141	0.148624	0.757711	0.360974
ScoreE_1	0.334090	0.026338	0.301488	0.169825	0.040522	0.723877	0.285946
ScoreH_1	0.416886	-0.006630	0.398530	0.228964	0.037056	0.850245	0.384745
ScoreK_1	0.450586	0.101440	0.491818	0.296787	0.127223	0.775366	0.485464
ScoreL_1	0.514900	0.009564	0.497923	0.354110	0.094788	0.870951	0.508018
ScoreN_1	0.278693	0.004457	0.307876	0.177376	0.081269	0.783673	0.296196
ScoreO_1	0.417141	-0.046874	0.314506	0.235353	0.109431	0.765734	0.309045
ScoreP_1	0.413177	0.082763	0.387361	0.328684	0.174210	0.790249	0.388731
ScoreQ_1	0.556605	0.110887	0.502465	0.366938	0.090049	0.847578	0.505354
ScoreR_1	0.505631	0.005519	0.365079	0.351884	0.174963	0.779393	0.340483
ScoreS_1	0.506191	0.107803	0.336038	0.298132	0.091499	0.738253	0.317386
Superior_ce1	0.890621	-0.010796	0.406129	0.376279	0.191609	0.440614	0.413894
Unique_ce1	0.788369	-0.013056	0.342110	0.423856	0.089065	0.466473	0.339067

Table E-35. SmartPLS bootstrapping result of Path Coefficients for Model B´

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
B asso -> B loyalty	0.326470	0.320552	0.106613	0.106613	3.062210
B asso -> Paymore	0.204125	0.209629	0.093244	0.093244	2.189141
B asso -> Pursue	0.142816	0.148731	0.103092	0.103092	1.385321
B asso -> Quality	0.580623	0.587672	0.061147	0.061147	9.495496
B asso -> Recommend	-0.007564	-0.004168	0.045729	0.045729	0.165406
B awareness -> B asso	0.025138	0.041596	0.063470	0.063470	0.396053
B awareness -> B loyalty	0.017213	0.063937	0.112340	0.112340	0.153222
B awareness -> Paymore	0.081527	0.048025	0.105344	0.105344	0.773908
B awareness -> Pursue	0.044340	0.074757	0.079560	0.079560	0.557315
B awareness -> Quality	0.038465	0.032821	0.041252	0.041252	0.932433
B awareness -> Recommend	-0.072516	-0.061507	0.042995	0.042995	1.686611
B loyalty -> Paymore	0.498272	0.511641	0.079527	0.079527	6.265476
B loyalty -> Pursue	0.182474	0.176657	0.105283	0.105283	1.733177
B loyalty -> Recommend	0.953360	0.950714	0.024230	0.024230	39.346869
Quality -> B loyalty	0.314474	0.320941	0.099339	0.099339	3.165661
Quality -> Paymore	-0.017351	-0.030189	0.094474	0.094474	0.183656
Quality -> Pursue	-0.063243	-0.067688	0.126016	0.126016	0.501861
Quality -> Recommend	0.027001	0.025253	0.041496	0.041496	0.650674

Table E-36. SmartPLS bootstrapping result of Outer Loadings for Model B´

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
CE1 <- B awareness	1.000000	1.000000	0.000000		
Excellent_ce1 <- B asso	0.834155	0.834528	0.043486	0.043486	19.182185
Grew_ce1 <- B asso	0.758258	0.756038	0.053068	0.053068	14.288360
Loyal_1 <- B loyalty	1.000000	1.000000	0.000000		
Meets_ce1 <- B asso	0.879563	0.878520	0.023102	0.023102	38.072778
PAYMOREFEE_1 <- Paymore	1.000000	1.000000	0.000000		
Pursue <- Pursue	1.000000	1.000000	0.000000		
Recommend_1 <- Recommend	1.000000	1.000000	0.000000		
ScoreA_1 <- Quality	0.733135	0.731860	0.044706	0.044706	16.399044
ScoreC_1 <- Quality	0.793679	0.791354	0.039102	0.039102	20.297619
ScoreD_1 <- Quality	0.757711	0.754072	0.041310	0.041310	18.341973
ScoreE_1 <- Quality	0.723877	0.726572	0.054268	0.054268	13.339023
ScoreH_1 <- Quality	0.850245	0.846992	0.032663	0.032663	26.030523
ScoreK_1 <- Quality	0.775366	0.772404	0.037585	0.037585	20.629677
ScoreL_1 <- Quality	0.870951	0.868289	0.025873	0.025873	33.662800
ScoreN_1 <- Quality	0.783673	0.780098	0.043080	0.043080	18.191045
ScoreO_1 <- Quality	0.765734	0.764051	0.038249	0.038249	20.019539
ScoreP_1 <- Quality	0.790249	0.786826	0.037224	0.037224	21.229800
ScoreQ_1 <- Quality	0.847578	0.847519	0.027588	0.027588	30.722672
ScoreR_1 <- Quality	0.779393	0.775416	0.046736	0.046736	16.676675
ScoreS_1 <- Quality	0.738253	0.740222	0.058660	0.058660	12.585259
Superior_ce1 <- B asso	0.890621	0.890253	0.022751	0.022751	39.146207
Unique_ce1 <- B asso	0.788369	0.792460	0.049357	0.049357	15.972640

Table E-37. SmartPLS output of R^2 when Latent Variable "Brand Awareness" was removed from Model B´

	R Square
B asso	
B loyalty	0.325724
Paymore	0.385234
Pursue	0.062771
Quality	0.338063
Recommend	0.922118

Table E-38. SmartPLS output of R^2 when Latent Variable "Brand Association" was removed from Model B´

	R Square
B awareness	
B loyalty	0.257036
Paymore	0.366774
Pursue	0.052546
Quality	0.002873
Recommend	0.927336

Table E-39. SmartPLS output of R^2 when Latent Variable "Perceived Quality" was removed from Model B´

	R Square
B asso	0.000556
B awareness	
B loyalty	0.261396
Paymore	0.391413
Pursue	0.062137
Recommend	0.926925

Table E-40. SmartPLS output of R^2 when Latent Variable "Brand Loyalty" was removed from Model B´

	R Square
B asso	0.000660
B awareness	
Paymore	0.224841
Pursue	0.042509
Quality	0.341718
Recommend	0.313621

Table E-41. SmartPLS blindfolding output of Q^2, with D = 7, for Model B´

	CV Red.
B asso	-0.000524
Quality	0.202499
B loyalty	0.326974
Pursue	0.081456
Recommend	0.892844
Paymore	0.395131

Table E-42. SmartPLS blindfolding output of Q^2, with D = 37, for Model B´

	CV Red.
B asso	0.000463
Quality	0.201445
B loyalty	0.324978
Pursue	0.066009
Recommend	0.925516
Paymore	0.389536

Table E-43. SmartPLS blindfolding output of Q^2, with D = 67, for Model B´

	CV Red.
B asso	0.000749
Quality	0.202262
B loyalty	0.326413
Pursue	0.058253
Recommend	0.924597
Paymore	0.392289

Table E-44. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Awareness" was removed from Model B´

	CV Red.
Quality	0.195506
B loyalty	0.315630
Pursue	0.080208
Recommend	0.917028
Paymore	0.376502

Table E-45. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Awareness" was removed from Model B´

	CV Red.
Quality	0.202816
B loyalty	0.329366
Pursue	0.055923
Recommend	0.918758
Paymore	0.384000

Table E-46. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Awareness" was removed from Model B´

	CV Red.
Quality	0.200364
B loyalty	0.323017
Pursue	0.054889
Recommend	0.922041
Paymore	0.384513

Table E-47. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Association" was removed from Model B´

	CV Red.
Quality	0.001545
B loyalty	0.265142
Pursue	0.034676
Recommend	0.914981
Paymore	0.370002

Table E-48. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Association" was removed from Model B´

	CV Red.
Quality	0.001367
B loyalty	0.254160
Pursue	0.053292
Recommend	0.927780
Paymore	0.366042

Table E-49. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Association" was removed from Model B´

	CV Red.
Quality	0.001345
B loyalty	0.257971
Pursue	0.047184
Recommend	0.928064
Paymore	0.368228

Table E-50. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Perceived Quality" was removed from Model B´

	CV Red.
B loyalty	0.256101
Pursue	0.077687
Recommend	0.898083
Paymore	0.395616

Table E-51. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Perceived Quality" was removed from Model B´

	CV Red.
B loyalty	0.260844
Pursue	0.062863
Recommend	0.926088
Paymore	0.388968

Table E-52. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Perceived Quality" was removed from Model B´

	CV Red.
B loyalty	0.262891
Pursue	0.058020
Recommend	0.926674
Paymore	0.389322

Table E-53. SmartPLS blindfolding output of Q^2, with D = 7, when Latent Variable "Brand Loyalty" was removed from Model B´

	CV Red.
Pursue	0.061276
Recommend	0.315198
Paymore	0.223286

Table E-54. SmartPLS blindfolding output of Q^2, with D = 37, when Latent Variable "Brand Loyalty" was removed from Model B´

	CV Red.
Pursue	0.036280
Recommend	0.321213
Paymore	0.226425

Table E-55. SmartPLS blindfolding output of Q^2, with D = 67, when Latent Variable "Brand Loyalty" was removed from Model B´

	CV Red.
Pursue	0.034631
Recommend	0.308124
Paymore	0.219866