IMPACT OF AMBIGUITY TOLERANCE AS A PERSONAL TRAIT AND IMPACT OF TERTIARY EDUCATION ON PROFESSIONAL JUDGMENT

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STATEMENT

I hereby certify that this thesis is the result of my own research and that it has not, nor has any part of it, been submitted for a higher degree to any other university or institution.

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SUMMARY

In assessing the merits and challenges of using principles-based standards like International Financial Reporting Standards (IFRS), limited attention has been given to the notion that accountants may not be equipped with the relevant education and expertise to tolerate the ambiguity in these standards. This thesis investigates the potential role of the personal trait of ambiguity tolerance in the acceptance by tertiary accounting students of the ambiguity found in IFRS, and then examines whether tertiary accounting education assists them to develop the relevant expertise to tolerate this ambiguity and exercise appropriate professional judgment. Ten accounting topics have been selected and extracts from the relevant IFRS and U.S. GAAP on those topics have been included in the survey for tertiary accounting students to indicate their level of preference for using IFRS in exercising their judgment. Examining the link between the personal trait of ambiguity tolerance and its influence on the judgment of future financial report preparers gives an insight into how regulatory bodies such as the International Accounting Standards Board (IASB) can further improve IFRS to make them easier to understand and apply. This is especially valuable at a time when principles-based IFRS are increasingly being adopted throughout the world.

CHAPTER 1 INTRODUCTION

1.1 Introduction

International Financial Reporting Standards (IFRS) have gained acceptance from 124 jurisdictions in the world as a common set of global accounting standards (IASB, 2014). Financial statements prepared under IFRS are also used by capital market lenders and investors in jurisdictions that have more than half of the world's GDP (IASB, 2014). Due to their world-wide adoption, IFRS undoubtedly constitute one of the most prominent sets of accounting standards in the world. Therefore, it is important that IFRS should enable accounting information preparers to produce financial statements which are comparable and free from bias.

The International Accounting Standard Board (IASB) has explicitly expressed its preference for principles-based standards. Principles-based standards employ a "substance over form" approach, which plausibly enhances focus on the "spirit" of a transaction or an event, rather than the appearance (Kivi et al., 2004). More specifically, standards which are principles-based often contain few bright-line rules, provide broad guidance and require the application of professional judgment when used by accounting information preparers, users and auditors (Psaros, 2007). The principles-based nature allows for inner flexibility of the standards and as a result, enables global adoption even by countries with diverse accounting traditions and various legal infrastructures (Carmona and Trombetta, 2008).

The adoption of a principles-based approach could presumably improve financial reporting in terms of better reflection of economic reality. As suggested by Barth et al. (2008), for example, less earnings management, more timely recognition of losses and greater value relevance of accounting reporting were observed in firms that adopted IFRS than in firms that adopted domestic standards. Psaros and Trotman (2004) found that given the same incentive to report otherwise, accountants using principles-based standards were more likely to avoid biased reporting than those using rules-based standards. Corporate executives, such as Chief Financial Officers (CFOs) were also less likely to report aggressively under a more principles-based standard (Agoglia et al., 2011). Cheong et al. (2010) found that the accuracy of earnings forecast using financial reports between the pre-IFRS adoption period and the post-IFRS period in Australia, Hong Kong and New Zealand has improved. The findings suggest that the

adoption of IFRS may have helped to improve the quality of financial statement analysis. A study by Baboukardos and Rimmel (2014) specifically on goodwill accounting of companies in several non-Anglo-Saxon countries has drawn a similar conclusion. The study tested the relevance of goodwill recognition and measurement to the firm value of companies with varying levels of IFRS compliance and concluded that purchased goodwill recorded under a higher level of IFRS compliance is more relevant to the value of firms.

In spite of the benefits provided by IFRS, concerns have also been raised that accounting standards are inevitably vague (Penno, 2008). Principles-based standards, in particular, due to their imprecise nature, may allow room for the manipulation of financial results and may render the comparability of financial information across firms difficult (Agoglia et al., 2011). As a set of principles-based standards, IFRS are expected to contain broad principles (Psaros, 2007), and as a result, the standards can sometimes be interpreted differently by different accountants. For instance, the word 'significant' can be translated as being anything more than 50%; however, others may interpret 'significant' more conservatively as being anything greater than 75%, as in the context of lease accounting (IASB, 2003). Professional judgment and the ability of professional accountants to accurately apply principles to specific accounting issues are crucial components that affect IFRS in achieving their proposed objectives. Therefore, the benefit and challenge of using a principles-based approach relies on professional judgment.

IFRS are viewed as being characterised by ambiguity, because it is not known for certain how an accountant will interpret vague and uncertain phrases as numerical expressions for a particular case. Ambiguity is defined "as uncertainty about the probabilities with which outcomes can occur" (Curley et al., 1986, p.230), which can be observed in IFRS when many sections are open for interpretation. Examples include expressions such as 'substantially', 'sufficiently', 'probable' and 'major part' in International Accounting Standard (IAS) 17 *Leases* when classifying a lease arrangement as an operating or finance lease in financial reports (IASB, 2003). However, limited studies have been conducted to examine how ambiguity in IFRS affects the judgments of accountants.

Research conducted in psychology has revealed that ambiguity tolerance can be seen as a personality variable (Frenkel-Brunswik, 1949). A greater acceptance of, and even preference for ambiguity can be observed in individuals who have a higher level of ambiguity tolerance, while those with lower ambiguity tolerance often see ambiguity as threatening and undesirable

(MacDonald, 1970; Curley et al., 1986; Andersen and Schwartz, 1992; Furnham and Ribchester, 1995). For example, Harding and Ren (2007) found that Chinese entry level accountants appear to be less tolerant to ambiguity than Australian entry level accountants, at a national level. It is noticeable, therefore, that there are different levels of ambiguity tolerance among individuals, yet the accounting literature has not attempted to examine its impact on accountants' professional practice.

With the growing scope of IFRS adoption globally, discussions on modifications of the tertiary accounting education curriculum internationally have taken place in both the profession and universities, focusing on the introduction, or addition, of IFRS material to the existing curriculum (Nilsen, 2008; Churyk et al., 2010; Conrod, 2010; Pries, 2010; Hong et al., 2011). While there is a lack of common agreement with regard to what comprises a good teaching program under the adoption of IFRS, Coetzee and Schmulian (2012) raised the point that a good tertiary accounting education program should aim to prepare students for professional accounting qualification examinations, to prepare students for employment, and to develop students' critical thinking abilities. In the context of IFRS, fulfilling these three aims is particularly challenging due to the principles-based nature and ambiguous characteristics of the standards.

To explore these issues, this thesis examines the role that the personality trait of ambiguity tolerance in tertiary accounting students potentially plays in the ability to accept the ambiguity in IFRS and then examines whether tertiary accounting education assists students to develop the relevant expertise to tolerate the ambiguity in IFRS. The MacDonald (1970) AT-20 Ambiguity Tolerance Index is used to measure the extent of ambiguity tolerance among accounting students. Ten accounting topics have been selected and extractions from the relevant IFRS and US GAAP on those topics have been included in the survey for tertiary accounting students to indicate their level of preference for using IFRS in exercising their judgments. Participants were drawn from first and final year financial accounting units at Macquarie University, Sydney, Australia.

Multiple hypotheses are examined in this study. The first hypothesis examines whether tertiary accounting students who are more tolerant of ambiguity will tend to show a greater preference for principles-based IFRS than students who are less tolerant of ambiguity. The second hypothesis seeks to examine whether tertiary accounting students who are at a later stage of

their accounting degree are more tolerant of ambiguity than those who are at an early stage of their accounting degree. It is expected that tertiary accounting education will assist students to develop the relevant expertise to tolerate the ambiguity in IFRS. The third hypothesis predicts that tertiary accounting students who are at a later stage of their accounting degree are more tolerant of the ambiguity in IFRS than those who are at an early stage of their accounting degree.

1.2 Background

Ever since IFRS have gained prominence, the discussion on the effectiveness of principles-based accounting standards has been important. While the IASB has expressed its preference for principles-based standards, there are a number of studies which are discussed below addressing the issues that may arise from the implementation of principles-based standards.

Principles-based accounting standards have been described by Psaros (2007) as documents that contain broad principles and have few or no rules. At the same time, rules-based accounting standards have taken a more legalistic view in that a rules-based approach requires users to adhere rules when determining the accurate treatment for accounting transactions or events (Psaros, 2007). Bratton (2003) argues that in theory, there is nothing inappropriate about an initiative that favours principles over rules in the communication of accounting standards or any other regulations, because principles can achieve better refinement and elegance in the application of standards than is possible with rules.

Furthermore, principles give a broad-brush direction for standards that factor-in expectations of how the facts and application of the standards change over time. In theory, the design of standards in this way allows the essence of the guidelines to be consistent even if there are variations in the facts of individual cases. On the other hand, rules-based systems are more formality-inclined, meaning that the statement of the rules tends to overwhelm both the purpose and the facts in any given situation (Bratton, 2003). Moreover, because it is impossible to identify all the situations that can arise in any given event, secondary rules are often attached to rules-based standards by way of compensation. If those secondary rules are absent, then the formalistic nature of the rules can be used by report preparers to develop strategies to uncover loopholes and evade regulations.

Bratton (2003) further points out that it is not the theoretical advantages of principles-based standards or the theoretical disadvantages of rules-based standards that determine and shape accounting practice. Rather, the process context in which issuers and auditors apply both rules and standards is a more critical issue. It is important to recognise that principles-based standards can be manipulated to serve management interests if the incentive to do so exists. A number of prior studies have also raised concern that accountants may be able to take advantage of the imprecision of principles-based standards and abuse them (Clarke and Dean, 1992; 1993).

Consistent application is a crucial component for accounting standards to achieve comparability between entities and countries (Wüstemann and Wüstemann, 2010). To achieve comparability, it is necessary to limit the judgments of accountants when they use accounting standards to allow for a consistent cross-firm application of the standard. Wüstemann and Wüstemann (2010, p.1) suggest that "there needs to be a set of high-level principles from which more concrete accounting rules are consistently derived". This suggests that having a purely principles-based or rules-based standard is not enough. There is a need for a set of overarching principles that give financial report preparers the flexibility to contemplate high-level issues more deeply, while having concrete rules as the foundation of those principles that delve into specific issues, so that more consistent application of the standards can be achieved (Wüstemann and Wüstemann, 2010).

Brown et al. (1993) pointed out that accounting standards are "inherently incomplete" and vagueness is unavoidable, as standards are aimed to provide only necessary but not sufficient conditions to assist with professional judgment. They also pointed out that it is essential for accounting standards users to understand the logic behind the standards and the meanings of terminology in the standards, in order to make a valid deduction.

To enjoy the benefits of adopting principles-based standards, drawbacks or issues raised by the application of IFRS must also be taken into account. This study attempts to investigate whether ambiguity tolerance as a personality variable has an impact on accounting students' acceptance of, or preference for using IFRS, since ambiguous features are observed across the standards.

1.3 Aim and Objectives

The aim of this thesis is to investigate the potential role that the personality trait of ambiguity tolerance plays in the acceptance by tertiary accounting students of IFRS ambiguity, and then to examine whether tertiary accounting education assists students to develop the relevant expertise to tolerate this ambiguity and exercise appropriate professional judgment.

The specific objectives of this study are as follows:

- To determine the possible impact that the personality trait of ambiguity tolerance has in enabling tertiary accounting students to accept the ambiguity present in IFRS. A survey conducted on tertiary accounting students in an Australian university will test the following hypothesis:

 H1 Tertiary accounting students who are more tolerant of ambiguity will tend to show a greater preference for principles-based IFRS than students who are less tolerant of ambiguity.

- To examine whether tertiary accounting education is assisting students to develop the relevant expertise to interpret and apply principles-based IFRS. The survey will also test the following hypothesis:

 H2 Tertiary accounting students who are at a later stage of their accounting degree are more tolerant of ambiguity than those who are at an early stage of their accounting degree.

 H3 Tertiary accounting students who are at a later stage of their accounting degree are more tolerant of the ambiguity in IFRS than those who are at an early stage of their accounting degree.

1.4 Motivation and Contributions

Accounting standards are important guidelines to financial reporting, and ultimately assist financial information users to make well-informed decisions so that healthy capital flow and stable economy can be maintained. It is clear that IFRS has become the most important and widely used set of accounting standards globally, and Australia was one of first countries to adopt IFRS. Due to the principles-based nature of IFRS, high quality professional judgment is critical to enable accountability in financial reporting under the adoption of IFRS. The feature of ambiguity, in particular, can be identified throughout the standards in the form of ambiguous expressions and general guidance, as a direct result of this principles-based nature.

In the literature on psychology, ambiguity tolerance has been identified as a personality trait which reflects an individual's attitude towards ambiguity – a person either enjoys it or finds it intimidating. This thesis attempts to discover whether there is an association between ambiguity tolerance as a personality variable and the attitude of future accountants towards IFRS. This finding will particularly contribute to the important debate on the personality profile of accountants, and more specifically, whether the personality of an accountant affects their level of preference for interpreting and applying principles-based standards. These results are likely to be of interest to the 120-plus countries that have adopted principles-based IFRS and are seeking ways to improve the professional judgments of their accountants.

Examining the link between this personal trait and its influence on the judgment of future financial report preparers will also give an insight into how regulatory bodies like IASB can further improve IFRS to make them easier to understand and apply. Organisations within the accounting industry, such as employers and training providers, could also benefit from the relationship between personality and attitudes towards IFRS being revealed, which might assist them in recruitment and training design.

Studies on tertiary education have concluded that effective education can help students to develop the relevant skills in their study to prepare them for future employment and practice. This study attempts to find out whether, in the course of three years of university studies, tertiary accounting students have developed a greater preference for IFRS as they have developed IFRS-specific skills and expertise. This brings insight into whether the current tertiary accounting education in Australia, which is based on IFRS, is helping students to

develop the appropriate skillset and attitude for their future practice. It is important that future accountants are given the opportunity at university to develop a suitable mindset and attitude towards the standards of the jurisdiction in which they will practise.

This study also contributes to the discussion on the effectiveness of existing tertiary accounting programs. The results of this study may be of interest to both national and international educators who can incorporate the implications of the findings into their curriculum and course design. This is especially valuable at a time when principles-based IFRS are increasingly being adopted throughout the world.

1.5 Organisation of the Thesis

The remainder of the thesis is organised as follows. Chapter 2 presents the literature review and Chapter 3 develops the relevant hypotheses. Chapter 4 outlines the research methods and the results are presented in Chapter 5. The conclusion, implications, limitations and avenues for further research are provided in Chapter 6.

CHAPTER 2 LITERATURE REVIEW

2.1 Ambiguity Tolerance

Tolerance for ambiguity has been constructed as a concept in the discipline of psychology for more than 60 years (Frenkel-Brunswik, 1949). Tolerance for ambiguity has been described as an individual's tendency to view ambiguous situations as desirable, while intolerance for ambiguity refers to the tendency of an individual to perceive, i.e. interpret, ambiguous situations as a source of threat or discomfort, such as when information is considered to be vague, probable, uncertain or unclear (Budner, 1962; MacDonald, 1970; Norton, 1975; Kirton, 1981; McLain, 1993). Tolerance for ambiguity has been viewed as a personality variable (Budner, 1962) as well as an organisational characteristic (Furnham and Gunter, 1993). Different levels of tolerance for ambiguity have also been observed in various national cultures (Hofstede, 1984), while tolerance for ambiguity remains an individual variable for clinical and organisational psychologists (Andersen and Schwartz, 1992; Nutt, 1993; Tsui, 1993).

The concept of tolerance for ambiguity has been adopted and utilised in many studies, including those in the discipline of psychology (Curley et al., 1986; Andersen and Schwartz, 1992; Furnham and Ribchester, 1995) and in the field of business and economics (Roskin and Margerison, 1983; Begley and Boyd, 1987; Kahn and Sarin, 1988; Van Dijk and Zeelenberg, 2003). Curley et al. (1986) and Van Dijk and Zeelenberg (2003) have indicated that people in general, when given two options, prefer a situation with a lower level of ambiguity and will avoid a situation with a higher level of ambiguity. These authors therefore argued that a general tendency of ambiguity avoidance exists. However, people are not always presented with options to escape from an ambiguous situation. When individuals are required to make a decision in such situations, the question is how tolerance or intolerance for ambiguity will affect people's decision-making process.

Various studies have led to inconsistent and inconclusive findings on how tolerance for ambiguity impacts judgment and decision making (Zebda, 1991). For example, McGhee et al. (1978) found a lack of relationship between tolerance for ambiguity levels and decision-making styles of individuals, while Gul (1986) and Tsui (1993) have all revealed that auditors with a

higher level of tolerance for ambiguity are generally more confident in decisions made in uncertain situations, compared to those who are less tolerant of ambiguity.

Majid and Pragasam (1997, p.936) have proposed the importance of adopting an "interactionist approach" when studying human behaviour. They have argued that "neither personality characteristics nor situational factors alone are sufficient to predict behaviour but that both must be considered jointly" (p.936). Their study found that as uncertainty (the amount of contingent liability stated in financial reports) increased, auditors who were relatively less tolerant of ambiguity demonstrated a corresponding increased tendency to give a qualified opinion. The result of the study indicates that tolerance for ambiguity has an impact on judgment and decision making within a particular context.

Tolerance for ambiguity as a personality variable has also been identified as a personal trait that may or may not be desirable in particular occupations (Begley and Boyd, 1987; Geller et al., 1990). In the field of medicine, a field in which ambiguous conditions are heavily involved, Geller et al. (1990) conducted research on students in different years at medical school on their level of tolerance for ambiguity and its association with the career preferences of students. The result of the study demonstrates that tolerance for ambiguity is higher among prospective psychiatrists than prospective surgeons and does not change throughout the school program. Geller et al. (1990) have accordingly suggested that tolerance for ambiguity "may, indeed, affect practitioners' career choices and performance and that selection of medical students may be more important than medical training *per se* in influencing students' tolerance for ambiguity" (p.619).

Similarly, Begley and Boyd (1987) conducted a study in the business field that sought to identify psychological characteristics that differentiated entrepreneurs from managers of small businesses. They found that in terms of tolerance for ambiguity, entrepreneurs, i.e. founders of small businesses, have a significantly higher level of tolerance than managers. Begley and Boyd (1987) have also recorded an association among managers between high tolerance for ambiguity and high return on assets (ROA). These two studies have led to conjecture that there might be a preferred or even ideal level of tolerance for ambiguity as a personality variable for practitioners to perform in particular occupations.

Based on this supposition, this study attempts to identify whether in the field of accounting, the level of ambiguity tolerance among accountants could have an impact on the type of financial reporting guidance they would like to receive. It is understood in accounting literature that accounting standards are generally categorised as principles-based and rules-based standards, the former of which are known to include a significant number of uncertainty expressions and general principles which illustrate the characteristic of ambiguity. The discussion of the types of accounting standard follows in the next section.

2.2 Principles-Based Nature of IFRS vs U.S. Generally Accepted Accounting Principles (GAAP)

International Financial Reporting Standards (IFRS) are known to be constructed on a substance-over-form approach and as a result contain very few rules. The documents provide broad principles to users and require users to exercise professional judgment when applying those principles to accounting transactions. When this approach is adopted, the *intention* of the standards should be considered as paramount by users (Psaros and Trotman, 2004). U.S. GAAP, on the other hand, are known to be based on rules, providing "specific criteria, 'bright line' thresholds, examples, scope restrictions, exceptions, subsequent precedents, implementation guidance, etc." for users (Nelson, 2003, p.91) .

There have been a number of studies and discussions on the pros and cons of the two standards and their impact on accounting professionals. A major concern of the U.S. GAAP arises from its heavy inclusion of rules, which raises the concern of potential "opportunistic interpretation by corporate executives" (Agoglia et al., 2011). A well-known example of this is the Enron Corporation failure, where the company together with its external Auditor, Arthur Anderson, were accused of constructing accounting reports that met the technical requirements of the GAAP while defeating the intent of the sections (Benston et al., 2006). Despite the criticisms, advocates of the U.S. GAAP argued that comparability and consistency are the main reasons for setting reporting standards, and the U.S. GAAP can help to achieve these objectives by allowing similar transactions and items to be accounted in the same way (Schipper, 2003).

In contrast to the U.S. GAAP, the concerns about IFRS are uncertainty, over-flexibility and vagueness. The benefits of IFRS are that they direct report preparers and auditors to the substance of a transaction and its true economic reflection.

The root of these concerns can be clearly observed in the standard wording of IFRS and U.S. GAAP. In a study of language effects on International Accounting Standards (IAS) comparability across nations, a significant number of "uncertainty expressions" have been identified (Doupnik and Richter, 2003). One of the uncertainty expressions listed is "not probable" (Doupnik and Richter, 2003, p.20), which can be seen in IAS 37: *Provisions, Contingent Liabilities and Contingent Assets* (IASB, 1998). Paragraph 10 of IAS 37 provides the definition of a contingent liability and item (b)(i) states that "a contingent liability is … a present obligation that arises from past events but is not recognised because … it is *not probable* that an outflow of resources embodying economic benefits will be required to settle the obligation" (IASB, 1998). The other uncertainty expression that can be found in the same paragraph is "sufficient reliability". It is stated by item (b)(ii) that a present obligation is also not recognised as a contingent liability because "the amount of the obligation cannot be measured with *sufficient reliability*" (IASB, 1998).

Problems that might arise from the existence of uncertainty expressions are the obstruction of reporting comparability and even disputes between reporting entities and auditors as a result of the possible inconsistent interpretation of those expressions (Psaros, 2007). Psaros (2007) has also pointed out the method of assessing whether consistent interpretations are likely to be exercised by accounting professionals is to ask accountants to provide a numerical form of conversions. However, once the conversion method is in place and a certain percentage is considered to be the most commonly acceptable interpretation of a certain phrase, that particular expression becomes U.S. GAAP-like, which is a violation of the principles-based philosophy. This can be illustrated by a direct comparisons with U.S. GAAP. Under the topic of *Lease* classification, IFRS makes an explicit claim that the decision of an item being classified as Finance Lease or Operating Lease lies in the "substance of the transaction rather than the form of the contract" (IASB, 2003, para 10). Guidance and clarification of when a lease is normally classified as a Finance Lease are given in IAS 17 *Leases* para 10. One example concerns the duration of the lease term which states that a Finance Lease will be recognised if "the lease term is for the *major part* of the economic life of the asset even if title is not transferred" (IASB, 2003, para 10 (c)). Similarly, U.S. GAAP provides guidance for Finance

Lease recognition (called Capital Lease in U.S. GAAP). The lease term is one of the criteria specified, and GAAP states that a Finance Lease (Capital Lease) should be recognised if "the lease term is equal to 75 percent or more of the estimated economic life of the leased property" (FASBc, 2010). It seems that the essence of the recognition criteria for the lease term is shared by the two sets of standards, although the application of these criteria by accounting professionals might follow different thinking processes.

Principles-based standards are also viewed as being different from rules-based standards due to their generic nature (Carmona and Trombetta, 2008). Instead of trying to address each type of accounting event and transaction specifically, which is seen in U.S. GAAP, IFRS provide general principles containing "considerable ambiguity" (Carmona and Trombetta, 2008, p.456). Under this approach, it is left to financial report preparers to exercise judgment and make decisions on the appropriate accounting treatment of controversial issues, as long as they do not "contravene the principles established in the standards" (Carmona and Trombetta, 2008, p.456). An example of the provision of general principles as opposed to addressing specific issues can be seen in IAS 18 *Revenue*. IAS 18 divides revenue by its source into three broad categories, namely from the Sale of Goods, the Rendering of Services and Interests, and Royalties and Dividends (IASB, 1993). Under each category, principles of revenue recognition are provided with no reference to specific transactions or industries (para 14-19 on the sale of goods; para 20-28 on the rendering of services; para 29-34 on the use by others of entity assets yielding interest, royalties and dividends).

Using revenue from the sale of goods as an example, the important principles for recognition are transfer of risks and rewards, no continuing involvement or control, reliable measurement of the amount, and probable future economic benefits. It is then the responsibility of the accountants to judge and justify to auditors that a particular transaction satisfies those conditions. At the same time, U.S. GAAP addresses revenue recognition in much more detail by specifying a number of industries. Accounting Standard Codification (ASC) 605 *Revenue Recognition* provides, together with general rules, 26 industry-specific guides from ASC 605-905 to ASC 605-985 (FASBa, 2010). The industries cover a wide range including agriculture, airlines, construction contractors, film entertainment, financial services, health care entities, real estate, software and many more.

The industry-specific sections contain very detailed rules for accountants to follow. ASC 605-985 *Revenue Recognition-Software* differentiates between software that does and does not require Significant Production, Modification, or Customisation, and each class outlines other associated scenarios and rules (FASBb, 2010). Therefore, accounting professionals in those industries are not required to exercise judgment according to principles, but instead are expected to look for applicable clauses already provided in the standards and follow their instructions.

The existence of specific rules in U.S. GAAP has been viewed by Wüstemann and Wüstemann (2010) as a presupposition of any accounting standards that are "internally consistent". The authors also claim that accounting standards which do not provide clear guidance, in other words principles-based standards, may lead to failure to consistently apply the standards. However, a study conducted by Psaros (2007) responded directly to the concern that principles-based accounting standards might allow the over-flexibility of interpretation and application by accountants and the implied hindrance to comparability. One hundred and twenty senior accountants participated in the study and provided their judgment on consolidation-related issues. The study found that despite the alleged flexibility embedded in the relevant standards, the existence of an incentive did not lead to a significantly biased reporting decision. In addition, the participants interpreted an imprecise phrase in the standard – namely, "capacity to control". Therefore, the author claimed to be reassured that principles-based standards do not necessarily cause biased reporting, and that comparability is not necessarily compromised by the adoption of IFRS.

While there is no absolute link between principles-based standards and reduced comparability, the embedded flexibility in IFRS may provide solutions to a problem that rules-based accounting standards have been long criticised for. Finnerty (1988) pointed out that standards made of detailed rules cannot meet the requirement and challenge of a complex and dynamic financial world. Maines et al. (2003) further explained that because it is impracticable for standard setters to predict business evolutionary or even revolutionary development, it is impossible for them to provide detailed instructions for financial reporting on every possible form of transaction, event or business relationship. Therefore, incompleteness and obsolescence in relation to newly formed business issues are inevitable in rules-based standards (Maines et al., 2003). On the other hand, principles-based standards are free from those concerns simply because of the absence of detailed instructions. It is up to accountants,

managers and auditors to decide the best form of practice to reflect the true financial status while honouring the principles.

The other problem of rules-based standards that IFRS might overcome is the fact that bright-line rules provide opportunity for deliberate construction and manipulation of transactions. Alexander and Jermakowicz (2006) and Benston et al. (2006) claimed that at least some of the attributes of rules-based accounting standards contributed to the Enron collapse due to the standards' inability to prevent number construction and manipulation. Moreover, the U.S. FASB and the Securities Exchange Commission (SEC) have both taken action and are considering moving towards more principles-based accounting standards following the collapse, which suggests that they consider there is an implied link between rules-based standards and the collapse (Bradbury and Schröder, 2012).

Accounting literature has acknowledged the notion of the existence of incentives to managers to make financial reporting decisions out of self-interest (Watts and Zimmerman, 1986; 1990). However, a study conducted on 253 auditor partners on their practice experience with the attempts of 515 clients at earnings management revealed that although it appeared to be easier for managers to justify their earnings management practice by taking advantage of imprecise rules, overall attempts at earnings management by transaction structuring were seen to be fewer under imprecise rules than under precise rules (Nelson et al., 2002). That is to say, managers are less likely to attempt earnings management when principles-based accounting standards are in place.

There are also empirical studies that reveal the benefits of the adoption and application of IFRS. An empirical study conducted by Cheong et al. (2010) in Australia, Hong Kong and New Zealand found that intangible assets capitalised according to IFRS principles provide more value-relevant information; that is, intangible assets capitalisation under IFRS is negatively associated with company's future earnings forecast errors in contrast to pre-IFRS capitalisation of the respective countries. Therefore, they suggested that the adoption of IFRS can lead to improved quality of financial forecast.

Similarly, other empirical studies have identified benefits such as improved accounting quality in various aspects under the governance of IFRS, for example, in the form of more timely loss recognition and less earnings management (Barth et al., 2008) and enhanced comparability of

financial reporting (Barth et al., 2012). Furthermore, prior studies also show that benefits accrued in the capital market following the adoption of IFRS. These included improved attractiveness to foreign investment (Covrig et al., 2007), capital cost saving effect, and improved liquidity (Daske et al., 2008; Li, 2010).

Recognising the potential benefits and possible problems of IFRS application, Maines et al. (2003) clearly pointed out that "the latitude inherent in concepts-based (the same as principles-based) is a double-edged sword" (p.76). In order to realise the abovementioned observed and potential benefits of IFRS, the type of essential expertise of accountants and auditors would be different from the expertise required under rules-based standards, and the level of expertise required would also be much greater, due to the increased level of professional judgment involved in IFRS (Schipper, 2003). However, there are no studies that document the direct opinion of accounting practitioners on the effectiveness of IFRS and U.S. GAAP, or whether practitioners have a preference for one over the other.

2.3 Tertiary Accounting Education

Education can contribute to transforming novices into experts. The process of transformation has been studied and discussed by a number of cognitive researches (Chi et al., 1988; Bédard, 1989; Bonner and Pennington, 1991; Stone and Shelley, 1997). Stone and Shelley (1997) suggested that there are three categories of learning outcomes that educators should be aware of, and differentiating between these categories is beneficial for gaining an understanding of different instructional approaches and information-processing demands. The categories of learning outcomes are declarative knowledge, intellectual skills and attitudes (Stone and Shelley, 1997).

Declarative knowledge, for example definitions and vocabulary, was the focus of accounting education in the past (Bonner and Walker, 1994). Intellectual skills, which often require declarative knowledge to exercise, are referred to as the ability to solve a problem which involves an understanding of concepts and procedures (Anderson, 1976; 1990). In the field of accounting, Stone and Shelley (1997) pointed out that intellectual skills are about the ability to identify, source and apply accounting-related information to solve problems and attitudes, on the other hand, reflect the level of recognition of the importance of developing intellectual skills, which also affects the ability to apply those skills. Ideally, tertiary accounting education

would assist students to achieve all three categories of outcomes. In the current context of accounting, for countries like Australia and others under the governance of IFRS, the development of declarative knowledge, intellectual skills and attitudes which tertiary education facilitates should be made relevant and applicable to future accounting practice under principles-based standards.

Tertiary accounting education has been made more challenging by the changing nature of a dynamic business environment. On the one hand, due to changes in the business model of the accounting profession, the nature of accounting work has been transformed from 'complying with the rules' to a type of professional service which involves "analysis, innovative problem solving, communication and client relations" (Howieson, 2003, p.69). More specifically, analysing and problem solving requires 'knowledge management', which is explained by Parker (2001, p.437) as the ability of "creating, capturing, storing, sharing and redistributing knowledge that can enhance organisational performance".

Tertiary education in accounting has furthermore been made more challenging due to either the existing or proposed adoption of IFRS. The way in which IFRS have been created provides a significant level of flexibility because they contain only principles, so that the standards are relevant and applicable to even a fast changing business world without the need for constant modification (as opposed to the U.S. GAAP). Due to the principles-based and judgment-focused nature of the standards, accounting practitioners are required to be in possession of sound judgment capability, which should be developed at least to some extent through accounting education (Carmona and Trombetta, 2008). Professor Loren Nikolai from the University of Missouri in the U.S. has expressed his concern about the need to provide more conceptual-based courses in tertiary accounting programs when teaching IFRS, "because of the need for students to develop more expertise in how to make good judgments…" (Nilsen, 2008, p.83) . Barth (2008) has provided similar advice that education for IFRS practice can only succeed if it is introduced as an appropriate pedagogy and it is crucial that this pedagogy should assist students in developing their judgment making ability.

In studying the design and also students' perception of accounting course content, Hong et al. (2011) have emphasised the importance of "Faculty characteristics" (p.730). For example, Watson et al. (2007) recognised the professional experience of Faculty members as an affecting factor on course delivery methods, and Mounce et al. (2004) found an association between

Faculty members' industry-related experience and students' perception of teaching quality. Moreover, factors including teaching experience, research interest and the amount of training teaching staff received have also been identified as important Faculty characteristics (Groomer and Murthy, 1996).

There are a number of studies that have made suggestions on accounting course design in the tertiary environment. In Stone and Shelley's (1997) study on accounting curriculum programs, they raised the importance of the inclusion of "complex, ill-structured, ambiguous problems and cases similar to those found in accounting practice" (p.38) and also the importance of adopting an active learning approach for intellectual skills development. A number of studies in more recent times have provided more detailed insight on specific approaches and activities that could be included in an accounting program, namely simulated situation learning (Fortin and Legault, 2010), problem-based learning (Milne and McConnell, 2001; Hansen, 2006), case study analysis (Boyce et al., 2001), and teamwork-involved learning (Kennedy and Dull, 2008).

The fact that teaching IFRS might present significant challenges has been spotted because of the flexibility-involving nature and the potential confusion effects of IFRS (Coetzee and Schmulian, 2012). Patro and Gupta (2012) especially made recommendations in terms of the teaching strategy for accounting education in the context of IFRS in a study conducted at the time of India's recent adoption of IFRS. The researchers recognised the importance of motivating students by emphasising the benefits of learning, such as career prospects, to improve education quality. Another study on IFRS education at U.S. academic institutions raised the point that to ensure an effective IFRS education, students' first subject in accounting should be 'an introduction to accounting' rather than an introductory accounting unit, with a focus on how accounting information is relevant to decision making, in addition to pure training in accounting information preparation (Hong et al., 2011).

Despite the many studies that have been conducted on accounting education, Flood and Wilson (2008) hold the opinion that there is still inadequate research in the field of professional accounting education programs. For example, in the context of IFRS, researchers and educators often understood the importance of enabling students to make judgments according to principles provided in IFRS through education, but failed to give thorough consideration to what is required to exercise sound judgment for individual IFRS standards, as the principles behind each standard vary (Coetzee and Schmulian, 2012). Coetzee and Schmulian (2012) even

proposed the idea that appropriate pedagogy approaches for each standard in IFRS might need to be designed and used in accounting programs. The lack of sufficient research in the field of accounting programs drives concerns, because without such rigorous studies and subsequent design of programs, tertiary accounting education programs might not be able to address the difficulties and challenges that will arise for future accounting practitioners (Flood and Wilson, 2008). This study seeks to examine how effective tertiary accounting education programs have been in terms of making students ready for professional practice in the context of IFRS.

CHAPTER 3 THEORY AND HYPOTHESES DEVELOPMENT

3.1 Impact of Ambiguity Tolerance on Tertiary Accounting Students' Preference for Using IFRS

Individuals differ from one another in terms of their willingness to tolerate ambiguity (Budner, 1962; Norton, 1975). This difference in attitude towards ambiguity can have an impact on individuals' decision and judgment making process (MacDonald, 1970; Norton, 1975; Van Dijk and Zeelenberg, 2003; Harding and Ren, 2007). Individuals who tend not to tolerate ambiguity will try to clarify the situation by requesting or obtaining additional information that is clear and explicit, to reduce the level of ambiguity (MacDonald, 1970; Norton, 1975), or they will distort information (Yurtsever, 2001) or even simply ignore the ambiguous information and make decisions and judgments on the basis of the remaining information (Van Dijk and Zeelenberg, 2003). At the same time, individuals with high ambiguity tolerance will "seek out ambiguity", "enjoy ambiguity" and "excel in the performance of ambiguous tasks" (MacDonald, 1970, p.791).

The psychology literature has developed a number of ways to reliably measure individuals' ambiguity tolerance, given that the development of such measurements began in the 1940s (Furnham and Ribchester, 1995). Some of the instruments have been criticised for having poor internal reliability, such as the instrument developed by O'Connor (1952), while others have been viewed as adequately valid, for example, the instrument developed by MacDonald (1970). Using the developed 'Ambiguity Tolerance' instruments, an individual's level of ambiguity tolerance can be identified and individuals can be labelled as "tolerant to ambiguity" or "intolerant to ambiguity".

Since the level of ambiguity tolerance can be reliably measured and individuals can be identified as tolerant or intolerant to ambiguity, a number of studies in different fields have tried to explore the associations between ambiguity tolerance and many other factors. These studies include but are not limited to researches on socioeconomic and sociocultural variables (see Furnham and Marks, 2013 for a review). There are several studies that rejected the association between ambiguity tolerance and the studied variables, while there are also a

number of studies that successfully found associations between ambiguity tolerance and their study objectives (Furnham and Marks, 2013). For example, in an attempt to associate ambiguity tolerance with other personality traits, Thalbourne and Houran (2000) found no correlation between ambiguity tolerance and transliminality, which is a psychological term meaning 'going beyond the threshold'. However, other personality variables have been found to be associated with ambiguity tolerance, and these variables include a tendency to worry and self-oriented perfectionism (Buhr and Dugas, 2006), openness, life satisfaction and anxiety (Bardi et al., 2009).

In a similar manner, studies drew different conclusions as to whether ambiguity tolerance has an impact on individuals' career choice and work performance (Geller et al., 1990; Teoh and Foo, 1997; Westerberg et al., 1997; Chong, 1998; Ironside et al., 2009). Geller et al. (1990) drew the conclusion that ambiguity tolerance does affect the career specialty preference of medical students, and Ironside et al. (2009) claimed that ambiguity tolerance does not correlate to the safety competencies of nurses. Conversely, other researchers have found an association between ambiguity tolerance and work performance, including a positive correlation between ambiguity tolerance and entrepreneurial performance (Teoh and Foo, 1997), a negative correlation between ambiguity tolerance and managerial performance (Chong, 1998) and a positive correlation between CEOs' ambiguity tolerance and their firms' financial performance (Westerberg et al., 1997).

In the field of accounting, similar studies to find out whether ambiguity tolerance has an impact on accounting-related issues have been conducted (Majid and Pragasam, 1997; Nelson and Kinney, 1997; Lamberton et al., 2005). Nelson and Kinney (1997) carried out a study on auditors and financial information users to test whether they would react differently under an ambiguous situation as opposed to a precise one. Auditors and financial information users were asked to exercise judgment on the probability of a contingent loss case. The results illustrate that both auditors and financial information users make a more conservative judgment when a case is more ambiguous. The study clearly shows that ambiguity in this situation can have an important impact on judgment quality.

Majid and Pragasam (1997) conducted a study on auditors in which their judgment preferences were cross-checked against their ambiguity tolerance levels, and concluded that ambiguity tolerance levels did have an impact on the likelihood of auditors issuing unqualified opinions.

Lamberton et al. (2005) attempted to discover whether the level of individuals' ambiguity tolerance would affect accounting students' subject preferences in the field of accounting. The authors made a distinction between accounting and accounting information systems and identified that accounting is characterised as emphasising procedures and rules, as opposed to an accounting information system, in which the focus is on processes and systems. That is to say, in comparing accounting and accounting information systems, it is found that the former contains a lesser level of ambiguity than the latter. The findings of Lamberton et al. (2005) illustrate that university students with high levels of ambiguity tolerance are more likely to choose accounting information systems as their major than they are to choose accounting (Lamberton et al., 2005). It is understood from this study that accounting students with higher levels of ambiguity tolerance had a tendency to accept and prefer subjects that possess elements of ambiguity, while those who are intolerant of ambiguity tend to avoid ambiguous subjects.

IFRS are well-known to be a set of accounting standards that are based on principles. Inevitably, the principles-based standard setting approach highlights the characteristic of ambiguity to IFRS. In the psychology literature, ambiguity is defined as being in a situation where insufficient cues are provided for individuals to comprehend the situation fully. IFRS are considered to be ambiguous because there is an absence of clear rules and there are implied requirements for accountants to look into specifics case by case to apply judgments. The psychology literature also points out that individuals differ in their level of tolerance of ambiguity. That is, people who are tolerant of ambiguity tend to desire ambiguous situations and objects that contain ambiguous elements, while people who are intolerant of ambiguity tend to avoid them.

Since IFRS are seen to be ambiguous, this study argues that ambiguity tolerance as a personality variable might have an impact on a student's preference for using IFRS, especially when compared with a set of rules-based accounting standards such as U.S. GAAP. It is likely that students who are more tolerant of ambiguity will accept and even appreciate the characteristics of ambiguity in IFRS and will prefer IFRS. Consequently, the hypothesis for the effect of ambiguity tolerance on students' preference for IFRS is as follows:

H1 Tertiary accounting students who are more tolerant of ambiguity will tend to show a greater preference for using IFRS in exercising their judgment than students who are less tolerant of ambiguity.

3.2 Impact of Tertiary Education on Accounting Students' Level of Tolerance for Ambiguity

Learning involves the acquisition and possession of knowledge. According to different learning outcomes, the educational psychology literature has categorised learning as rote learning and meaningful learning (Mayer, 1992; 2002b; 2002a; Novak, 2002). Rote learning enables learners to achieve only a certain degree of knowledge possession and the goal is to retain the knowledge until a later time, during which process the ability to utilise the knowledge memorised to solve problems is not involved (Mayer and Wittrock, 1996; Mayer, 2002b). Meaningful learning, on the other hand, empowers learners to gain problem solving skills (Mayer, 2002b). The process of meaningful learning entails not only memorising knowledge but also truly understanding the knowledge in a sensible way and being able to use it for problem solving, which is called knowledge transfer (McKeough et al., 1995; Mayer and Wittrock, 1996; Phye, 1997).

In the context of accounting, rules-based accounting standards provide detailed instructions on accounting issues and the application of standards requires the recall of knowledge and following rules. Principles-based accounting standards, in contrast, require practitioners to understand principles in a sensible and meaningful way and to apply concepts and principles to accounting events using their problem solving skills, which requires meaningful learning.

The process of meaningful learning is analysed in the educational psychology literature and is understood as a process that passes through several stages (Shuell, 1990). Shuell (1990) pointed out that characteristics involved in the series of stages are systematically different. In the initial stage, learners typically experience a process of adding isolated facts to their existing knowledge collection and can only apply acquired knowledge to clearly-defined situations following detailed instructions (Shuell, 1990). In a later stage, learners start to assemble isolated factual knowledge into an integrated system and meaningful knowledge and automaticity can be achieved, which will give them the capability to solve new and ambiguous

problems (Shuell, 1990). At this later stage of meaningful learning, the construction and reconstruction of knowledge to form meaning need to be constantly carried out by the integration of new knowledge into learners' existing knowledge system (Ausubel, 1963; 2000; Novak, 2002).

In the specific context of accounting, tertiary education has been criticised for not being able to equip students with adequate skills to solve ambiguous problems (Kimmel, 1995). To respond to this issue, Kimmel (1995) made a clear recommendation on accounting curriculum design. He suggested that the introductory subjects of an accounting education program should focus on "welcoming divergent views" (p.308) and should also introduce precise terms in the accounting field by proving simple cases (Kimmel, 1995). This implies that the ability to handle ambiguous situation has not yet been incorporated into the course objectives. Later, when students move forward to the intermediate level of subjects, Kimmel (1995) explicitly recommended that courses should focus on "tolerating ambiguity" (p.309). Campbell and Lewis (1991) suggested that this can achieved through case studies with an absence of clear authoritative guidance and open style questions with multiple alternative approaches and solutions.

Kimmel (1995) pointed out that students moving up to an even higher level of accounting study should be reaching an intellectual development stage and should be able to recognise ambiguity and seek solutions from multiple perspectives. It is important for students to resist the "overgeneralisation" (p.310) of accounting concepts and accept the fact that solutions to problems need to be developed according to relevant information in individual cases. A level of ambiguity will be involved in almost every problem solving situation in advanced accounting.

With regard to evidence of the impact that tertiary education has on the ambiguity tolerance of individuals, very few studies have conducted direct tests and the findings are inconsistent (Harding and Ren, 2007; Geller et al., 1990). Geller et al. (1990) held the view that no change in ambiguity tolerance was found throughout medical school from year 1 to year 4. However, a comparative study between accounting students in China and Australia, undertaken by Harding and Ren (2007), found no difference in the ambiguity tolerance of first year students in those two countries, but did find a difference in ambiguity tolerance between the students in each country in their final year of university study. Provided students started tertiary education

with an identical level of ambiguity tolerance, the difference observed in final year students may be traced back to the different tertiary teaching programs in each country. The question arises whether the university course in China trained students to be less tolerant to ambiguity, or whether the course program in Australia increased the ambiguity tolerance level of students. Huber (2003), in her discussion of teaching tolerance for ambiguity, has reinforced the idea that ambiguity tolerance can be taught and increased by creating situations and practices that contain characteristics of ambiguity for students.

This study has chosen the professional accounting program at undergraduate level offered by Macquarie University for examination. The program admits students from Australian local high school and from overseas without requiring a background in accounting. On completion of the program, students are recognised as having sufficient foundation to pursue a professional qualification from professional bodies such as Certified Public Accountant (CPA) and The Chartered Accountants of Australia and New Zealand. The program consists of 19 core units and four electives. Out of the required units, 10 units are direct accounting units, covering the areas of financial reporting, management accounting, auditing and others. Four units expand on the teaching concepts of financial accounting and selective topics from IFRS. Two first units aim to provide a basic understanding of principles and concepts relating to financial accounting and basic reporting elements such as assets and liability, while teaching students to undertake basic business transaction recording based on IFRS. The second year and final year units then focus on particular topics chosen from IFRS, including Property, Plant and Equipment (PPE), Impairment, Leases, Revenue, and Consolidation, all based on corresponding IFRS sections. It is also noted that not all IFRS topics are covered in the program, simply because this is not feasible.

The program has incorporated a number of modern teaching and learning approaches in addition to a pure teacher-centred classroom approach and also emphasises critical thinking as an important graduate capability, which closely relates to the ability to make judgments. To achieve this, a combination of various assignment tasks has been utilised to encourage learning. Starko (2010) claimed that the use of simulations and role plays can help to create a consultative learning environment which enables the development of critical thinking ability. Throughout the program, a number of writing assignments are designed in a simulative way. For example, one task involves students providing professional advice in a formal business report format as a finance manager, while another asks students to provide professional judgment on a number

of given cases as an external auditor. Individual research of topics outside the scope of what has been directly covered in class and the oral presentation of findings is used as part of the assessment for some units. The ability to summarise and present information and findings is crucial to critical thinking capability (Bonk and Smith, 1998). Moreover, case studies and team-based assignments have also been included as part of unit assessment, which enhance critical thinking ability (Boyce et al., 2001; Kennedy and Dull, 2008).

Tertiary accounting students are in the process of navigating the phases of meaningful learning. As Shuell (1990) discussed, students who are at a later stage of the process will have integrated knowledge and developed capabilities for problem solving, in contrast to students at the initial stage who only focus on memorising knowledge. This implies a better ability to handle ambiguous problems at a later stage of learning, which could thus help to increase students' tolerance of ambiguity. Furthermore, the structure of the chosen tertiary accounting education program at Macquarie University is in line with recommendations and involves various teaching techniques and approaches which are thought to be appropriate ways to teach a higher degree of tolerance to ambiguity (Huber, 2003). Therefore, the hypothesis for the effect of tertiary accounting education on students' tolerance of ambiguity is as follows:

H2 Tertiary accounting students who are at a later stage of their accounting degree are more tolerant of ambiguity than those who are at an early stage of their accounting degree.

3.3 Impact of Tertiary Education on Accounting Students' Preference for Using IFRS

In a virtual round table discussion hosted by the Journal of Accountancy, which involved eight professors and directors from top universities in the U.S. in the field of accounting, the need to shape the curriculum in order to cope with the potential adoption of IFRS in the U.S. was acknowledged (Nilsen, 2008). Specifically, the reshaped curriculum should help students to lay a strong foundation in economics and finance and develop more expertise in judgment making, and should promote strong ethics and professional responsibility (Nilsen, 2008).

Similar studies have been conducted by scholars in other jurisdictions where the adoption of IFRS is either in place or under consideration, for example in South Africa (Coetzee and Schmulian, 2012), Canada (Conrod, 2010), Nigeria (Herbert et al., 2013) and India (Patro and

Gupta, 2012). The research results and discussions of those studies have pointed out that to design a curriculum suitable for IFRS is challenging, considering the principles-based and judgment involving nature of IFRS. Such discussion is no longer needed in Australia, because tertiary accounting education programs have been in place in universities for many years, due to the earlier adoption of IFRS in 2005. There is nevertheless a need to examine the level of adequacy of the existing programs.

The understanding of meaningful learning phrases (Shuell, 1990), which has been discussed in detail in the previous section, provides insight into education in accounting and has corresponding implications. Financial accounting education at university level is typically structured as introductory, intermediate and higher level accounting subjects. In each stage, a number of accounting topics are included based on their level of complexity. Typically, the topics covered in the introductory subjects of the professional accounting program at Bachelor level at Macquarie University include a general introduction to the objectives and elements of accounting, and specific accounting application topics, such as Inventory, Receivables, Non-Current Assets and Liabilities. Students who are undertaking introductory accounting subjects are usually experiencing the initial stage of meaningful learning, in which students particularly seek to understand basic concepts and precise terms to advance their understanding (Shuell, 1990). In the context of IFRS, however, due to its principles-based nature, even topics covered in the introductory stage demand a significant level of understanding of principles and require the ability to make judgment without the provision of clearly defined rules. This means there is a large amount of unfamiliar isolated conceptual knowledge of accounting principles for students to acquire in a short period of time. Because there is not yet a well-constructed system for understanding IFRS students might find IFRS difficult to comprehend and thus perceive them unfavourably compared to U.S. GAAP, where precise terms and clear-cut rules are provided.

As students progress to more in-depth study of IFRS in their later years at university, more complex topics are introduced to them. For example, in the undergraduate professional accounting program at Macquarie University, the intermediate accounting subject covers topics such as Income Taxes, Acquisition, Depreciation and Revaluation of Property, Plant and Equipment (PPE), and Intangible Assets and Leases. The construction of financial reports including Statement of Comprehensive Income, Statement of Financial Position, Statement of Cash Flow and Statement of Changes in Equity are also taught in this unit.

A higher level financial accounting subject covers even more complex topics, such as Consolidation and Equity Accounting. Students who are studying or have studied this unit are at a later stage of meaningful learning of IFRS. During the process of moving up to more advanced financial accounting subjects, students should find that concepts and principles start to integrate and create meaning for them through the constant acquisition of new knowledge and reconstruction of their accounting knowledge. This means they are in the process of developing problem solving abilities to address accounting issues in the context of IFRS and should view IFRS more favourably than U.S. GAAP.

Because of the level of ambiguity in IFRS and the level of judgment making required in applying IFRS, it is expected that tertiary accounting students need to receive appropriate training and education to obtain the skills and thinking ability to be able to practise under IFRS. Consequently, the hypothesis for the effect of tertiary accounting education on students' preference for using IFRS is as follows:

H3   Tertiary accounting students who are at a later stage of their accounting degree have a greater preference for using IFRS in exercising their judgment than students who are at an early stage of their accounting degree.

CHAPTER 4 RESEARCH METHOD

4.1 Research Approach

This study adopts a survey research method. Survey research is generally considered to have three main characteristics. Firstly, it is a quantitative research method which can be used to analyse relationships between variables by acquiring standardised information from subjects (Singleton and Straits, 2010). Secondly, this research method mainly relies on the collection of information through asking participants structured and predefined questions (Dane, 1990). Thirdly, similar to other research methods, sampling is used in survey research, but data are specifically collected in such a way that findings based on the data can be generalised to the population (Pinsonneault and Kraemer, 1993).

The abovementioned three characteristics of survey research make this method particularly suitable for studies such as this. Pinsonneault and Kraemer (1993) outlined the following four situations in which the survey method is most appropriate: (i) the study topic centralizes in the questions 'what is happening?' and 'how and why is it happening?'; (ii) it is not practical or desirable to control the dependent and independent variables; (iii) 'the phenomena of interest must be studied in their natural setting' and (iv) 'the phenomena of interest occur in current time or the recent past'.

Since the topic of this study is to examine relationships between various independent and dependent variables including ambiguity tolerance, tertiary accounting education and preference for principles-based or rules-based accounting standards of university accounting students in Australia, survey research is the most appropriate research method to use.

Pinsonneault and Kraemer (1993) outlined that there are three main purposes of a study for which survey research is appropriate. These are description, explanation and exploration. This study utilises the survey method to serve all three purposes. Description involves obtaining information 'about the distribution of some phenomena in a population' and to 'find out what situations, events, attitudes, or opinions are occurring in a population', whereas explanation is about the testing of theory and the examination of causal relations (Pinsonneault and Kraemer, 1993, p.80). Section three of the questionnaire sought to gather information on students' opinions of accounting standards preference, which is descriptive information.

This study also seeks to explore and explain possible relationships between ambiguity tolerance, education level and standards preference. Since there is a lack of research on whether ambiguity tolerance as a personality variable is associated with standards preference, the second section of the survey developed for this study contains 20 well-established and well-tested questions developed in the field of psychology to measure participants' level of tolerance to ambiguity. Research instruments were distributed to first and final year accounting students respectively at Macquarie University, and a study of the two groups of students seeks to establish whether there was any impact of tertiary education at either level of study. This part of the study is exploratory and explanatory in nature and may provide more insight into whether and how ambiguity tolerance and education affect students' standards preference.

4.2 Subjects

A survey was conducted on undergraduate accounting students at Macquarie University to first identify their level of ambiguity tolerance as a personality variable and to collect information about their preference on principles-based and rules-based accounting standards. Australia was selected for this study because IFRS was adopted in 2005 and the Australian tertiary education sector has been running university accounting programs designed on the basis of the adoption of IFRS for many years. The programs are considered well-established and accounting professional bodies such as the Chartered Accountants of Australia and New Zealand and Certified Public Accountants (CPA Australia) have recognised their credentials.

The survey was distributed to students who were completing their first year accounting course (ACCG 101 Accounting 1B) and third year accounting course (ACCG 308 Corporate Accounting and Reporting) in Session 2, 2014 at Macquarie University. Both units are compulsory units of the Bachelor of Commerce – Professional Accounting at Macquarie University. This program is well recognised by the accounting industry, as demonstrated by its professional body credentials and good reputation among employers in the industry. The two units are studied at different stages of a student's study progress, therefore there is an assumed difference in knowledge of accounting between the two groups of students. ACCG 101 is typically undertaken by students in their first year of accounting study and has no specific or in-depth reference to IFRS sections. ACCG 308, on the other hand, is typically considered to be the very last financial reporting-related unit that students take before graduation (normally

in their final year of study). Not only the unit itself but also its prerequisites include direct reference to and study of selected IFRS sections. Therefore, greater familiarity with and understanding of IFRS is assumed in this group of students.

The questionnaires were distributed in classes of these two units. A total of 564 surveys were handed out to the two units of students, of which 364 copies were for first year students and 200 copies were distributed to final year students. A total of 272 responses from ACCG 101 and 145 responses from ACCG 308 were received, of which 253 and 144 responses respectively were considered to be valid on the basis of data completeness.

4.3 Development of Research Instrument

Accounting academics at Macquarie University (Sydney) assisted with the development of the research instrument. The research instrument was developed by referring to a well-established personality test in the field of psychology studies and by focusing on the expressional and formatting differences between principles-based and rules-based accounting standards.

Section 1 of the instrument included standard demographic information-related questions. To determine students' level of ambiguity tolerance, a psychological test containing 20 questions developed by MacDonald (1970) were used in Section 2. This instrument contains 20 True and False questions and a mark of 1 or 0 is assigned to the True or False option respectively in each question. As a result, possible scores of the measurement range from 0 to 20, with a higher showing greater tolerance of ambiguity. MacDonald (1970) remarked of his instrument that it "shows promise of being a useful instrument for the measurement and further investigation of ambiguity tolerance" (p.797). Students were divided into two groups, ambiguity tolerant and ambiguity intolerant, on the basis of the ambiguity tolerance scores.

To gather students' preferences on principles-based and rules-based accounting standards, 10 accounting topics were selected for inclusion in Section 3. These topics were selected because while there is no major difference in the requirements of accounting treatments, the characteristics of expressional style in each section were different in IFRS compared to in U.S. GAAP. Section 3 provided word-for-word extraction on the selected topics from both IFRS and U.S. GAAP, and these were placed side by side for participants to compare and indicate

their level of preference for IFRS. Two main types of expressional difference were identified by this study and included in the instrument. The first type of difference is the existence of uncertainty expression in IFRS, while U.S. GAAP tends to contain clear-cut definitions in the form of numerical expression. The relevant sections selected and included in the instrument, demonstrating this kind of difference, are Lease term (IAS 17/U.S. ASC 840), Lease minimum payment (IAS 17/U.S. ASC 840), Goodwill impairment (IAS 36/U.S. ASC 350), and Consolidation (IFRS 10/U.S. ASC 810).

The second type of difference recognised by this study is the tendency for IFRS to contain only general principles of accounting treatments and the tendency for U.S. GAAP to also contain a number of industry-specific or transaction-specific guidelines for practitioners to follow. The sections selected to reflect this kind of difference are Related party (IAS 24/U.S. ASC 850), Contingent liability (IAS 37/U.S. ASC 450-954), Revenue from sales of goods (IAS 18/U.S. ASC 985-605), Revenue from rendering of services (IAS 18/U.S. ASC 985-605), Research and development (IAS 38/U.S. ASC 350) and Interest capitalisation (IAS 23/U.S. ASC 835).

To preserve internal validity, particular care was taken in selecting the accounting topics. Topics were selected from a wide range, and across a number of industries (that is, in the case of U.S. GAAP). The extractions were shuffled randomly and three versions of Section 3 were distributed to the participants to avoid possible order-effects. Potentially confounding variables that could also affect the judgments of accounting students were controlled (or measured), including demographic variables such as gender, ethnicity and language ability. The complete version of the survey questionnaire is provided in the Appendix.

4.4 Procedure

It was important to ensure that all subjects received the same instructions and background information, in the same format. All relevant information regarding the survey questionnaire was provided in the cover letter of the instrument. The research instrument consisted of three sections. The first section required the subjects to provide demographic data such as gender, first language spoken, years of living in Australia and ethnicity.

The second section consisted of MacDonald (1970) measure to determine students' level of ambiguity tolerance. The third section consisted of extractions from IFRS and U.S. GAAP on

ten selected topics (discussed in the previous section). Respondents were asked to indicate their level of preference for using IFRS in exercising their judgment on each of the topics chosen on a seven-point Likert scale (where 1 denoted 'not at all preferable' and 7 denoted 'highly preferable').

The questionnaire was distributed to two groups of students in their first year and third year respectively of an undergraduate accounting degree at Macquarie University. The results were then statistically analysed (primarily using SPSS) to identify the possible existence of an association between ambiguity tolerance and standards preference. Further tests were also undertaken to reveal whether tertiary education affects students' level of ambiguity tolerance and standards preference.

CHAPTER 5 RESULTS AND DISCUSSION

5.1 Demographic Details of Respondents

A brief summary of the demographic details of the respondents are as follows. As shown in Table 1, less than half the respondents (that is 48% of ACCG 101 respondents and 35% of ACCG 308 respondents) speak English as their first language. Almost every ACCG 101 student who responded is aged under 25 years with approximately 56% being under 20 years, while the majority (81%) of ACCG 308 respondents are aged between 20-24 years. Overall, the gender ratio of the respondents is spread equally.

Table 1
Demographic Data of Respondents

Demographic Data	ACCG 101 Students	ACCG 308 Students
Sample Size	364	200
Responses	272	145
Usable responses	253	144
Usable response rate	70%	72%
English as first language	48%	35%
Age: Under 20 20-24 25-29 30-34	56% 42% 2% 0%	8% 81% 10% 1%
Gender: Male Female	48% 52%	50% 50%

5.2 Impact of Ambiguity Tolerance on Accounting Students' Preference for Using IFRS (H1)

The level of ambiguity tolerance of accounting students was measured using (MacDonald, 1970) instrument. Accounting students were divided into two groups, namely ambiguity tolerant and ambiguity intolerant, according to their ambiguity tolerance scores using median split. It is expected that ambiguity tolerant and intolerant students will differ noticeably in their level of preference for using IFRS in exercising their professional judgment.

It is expected that ambiguity tolerant accounting students, being more comfortable with ambiguity, will demonstrate a higher preference for using IFRS in each of the financial reporting contexts. For example, according to IAS 17, "the lease term is for the major part of the economic life of the asset, even if title is not transferred". In this context, it is expected that students who are tolerant of ambiguity will prefer to use this expression rather than "equal to 75 percent or more of the estimated economic life of the leased property", as provided in the U.S. GAAP for the purpose of classifying lease transactions. It is expected that ambiguity intolerant students, on the other hand, will prefer the clearer expression of the U.S. GAAP statement. Students were asked to provide their level of preference for using IFRS on a Likert scale ranging from 1 to 7 (where 1 denoted 'not at all preferable' and 7 denoted 'highly preferable').

A multivariate test (MANOVA) was used to determine whether a significant difference exists between the ambiguity tolerant and intolerant accounting students across the ten financial reporting contexts relating to H1. Univariate tests (ANOVA) were also used to test for differences in the preference for using IFRS in each of the financial reporting contexts and the directions of the differences were also identified to see if they were consistent with the hypothesis. The tests were conducted on first year and third year tertiary accounting students respectively.

To test H1 and identify the overall effect, the mean point-preferences of using the IFRS for the ambiguity tolerant and intolerant accounting students were compared. Multivariate test results indicate an insignificant difference at $p < 0.05$ ($p = 0.283$) for first year students and a significant difference at $p < 0.05$ ($p = 0.016$) for third year students across the ten financial

reporting contexts. Univariate test results indicate that significant differences exist in only one financial reporting context at $p < 0.05$ for first year students, and that significant differences exist in six financial reporting contexts at $p < 0.05$ for third year students.

For first year students, in the ten financial reporting contexts, the differences in preferences assigned by ambiguity tolerant and intolerant students occurred in mixed directions – ambiguity tolerant students have a greater preference for using IFRS than ambiguity intolerant students in some contexts but not in other contexts. For third year students, ambiguity tolerant students demonstrated a weaker preference for using IFRS than ambiguity intolerant students in all ten financial reporting contexts. The descriptive statistics and the results from multivariate and univariate tests for each of the ten financial reporting contexts are reported in Table 2 and Table 3.

Generally, the results do not support H1. The results indicate that ambiguity tolerance does not have a significant association with the preference of using IFRS for first year accounting students. For third year students, there is a significant relationship between ambiguity tolerance and a preference for using IFRS. However, the direction is opposite to the predictions in H1 – the results show that third year ambiguity intolerant students have a greater preference for using IFRS than students who are tolerant of ambiguity.

Table 2
H1: Descriptive Statistics and Results of Univariate and Multivariate Tests for Preference of Using IFRS between Ambiguity Tolerant and Intolerant First Year University Accounting Students

IFRS	Ambiguity Tolerance	Mean	Std. Deviation	N	F	Significance Level
Multivariate test					1.212	0.283
Univariate tests:						
IAS 17 *Lease* - Lease Term	Intolerant	4.02	1.703	142	1.812	0.180
	Tolerant	3.74	1.594	111		
	Total	3.90	1.659	253		
IAS 17 *Lease* - Minimum Lease Payment	Intolerant	4.08	1.669	142	2.163	0.143
	Tolerant	3.78	1.540	111		
	Total	3.95	1.618	253		
IAS 18 *Revenue* - Sale of Goods	Intolerant	4.70	1.597	142	0.231	0.631
	Tolerant	4.60	1.723	111		
	Total	4.66	1.651	253		
IAS 18 *Revenue* - Rendering of Services	Intolerant	4.73	1.642	142	0.088	0.768
	Tolerant	4.67	1.461	111		
	Total	4.70	1.562	253		
IFRS 10 *Consolidation* - Controlling Interest	Intolerant	3.75	1.626	142	0.000	0.995
	Tolerant	3.75	1.676	111		
	Total	3.75	1.645	253		
IAS 36 *Impairment of Assets* - Goodwill Impairment	Intolerant	3.81	1.663	142	0.422	0.516
	Tolerant	3.95	1.640	111		
	Total	3.87	1.651	253		
IAS 23 *Borrowing Costs* - Interest Capitalisation	Intolerant	4.12	1.471	142	0.012	0.914
	Tolerant	4.10	1.566	111		
	Total	4.11	1.510	253		
IAS 24 *Related Party* – Definition	Intolerant	4.44	1.401	142	0.005	0.944
	Tolerant	4.42	1.570	111		
	Total	4.43	1.475	253		
IAS 37 *Contingent Liabilities* - Recognition	Intolerant	4.82	1.592	142	0.946	0.332
	Tolerant	5.01	1.517	111		
	Total	4.90	1.559	253		
IAS 38 *Intangibles* - Research and Development	Intolerant	4.36	1.455	142	4.674	0.032**
	Tolerant	3.96	1.427	111		
	Total	4.19	1.453	253		

**Significant at $p < 0.05$

Table 3
H1: Descriptive Statistics and Results of Univariate and Multivariate Tests for Preference of Using IFRS between Ambiguity Tolerant and Intolerant Final Year Accounting Students

IFRS	Ambiguity Tolerance	Mean	Std. Deviation	N	F	Significance Level
Multivariate test					2.295	0.016**
Univariate tests:						
IAS 17 *Lease* - Lease Term	Intolerant	4.20	1.508	74	2.795	0.097*
	Tolerant	3.79	1.483	70		
	Total	4.00	1.505	144		
IAS 17 *Lease* - Minimum Lease Payment	Intolerant	4.78	1.599	74	17.009	0.000***
	Tolerant	3.73	1.464	70		
	Total	4.27	1.618	144		
IAS 18 *Revenue* - Sale of Goods	Intolerant	4.74	1.562	74	4.550	0.035**
	Tolerant	4.20	1.490	70		
	Total	4.48	1.546	144		
IAS 18 *Revenue* - Rendering of Services	Intolerant	4.73	1.306	74	4.616	0.033**
	Tolerant	4.27	1.250	70		
	Total	4.51	1.295	144		
IFRS 10 *Consolidation* - Controlling Interest	Intolerant	4.46	1.406	74	1.870	0.174
	Tolerant	4.11	1.620	70		
	Total	4.29	1.519	144		
IAS 36 *Impairment of Assets* - Goodwill Impairment	Intolerant	4.30	1.478	74	3.819	0.053*
	Tolerant	3.81	1.487	70		
	Total	4.06	1.497	144		
IAS 23 *Borrowing Costs* - Interest Capitalisation	Intolerant	4.46	1.218	74	4.882	0.029**
	Tolerant	4.01	1.198	70		
	Total	4.24	1.225	144		
IAS 24 *Related Party* – Definition	Intolerant	4.34	1.378	74	0.711	0.401
	Tolerant	4.14	1.397	70		
	Total	4.24	1.385	144		
IAS 37 *Contingent Liabilities* - Recognition	Intolerant	4.85	1.411	74	6.527	0.012**
	Tolerant	4.27	1.307	70		
	Total	4.57	1.388	144		
IAS 38 *Intangibles* - Research and Development	Intolerant	4.68	1.415	74	9.460	0.003***
	Tolerant	3.94	1.443	70		
	Total	4.32	1.471	144		

***Significant at $p < 0.01$; **Significant at $p < 0.05$; *Significant at $p < 0.10$

5.3 Impact of Tertiary Education on Accounting Students' Ambiguity Tolerance (H2)

H2 expects that tertiary accounting students who are at a later stage of their accounting degree are more tolerant of ambiguity than those who are at an early stage of their accounting degree. To test H2 and identify the effects of tertiary education, the mean point-ambiguity tolerance for the first year and third year accounting students were compared. A univariate test (ANOVA) was used to determine whether a significant difference exists between the two groups of students in their level of ambiguity tolerance.

The results indicate that the third year tertiary accounting students are more tolerant of ambiguity (mean = 8.47) than the first year accounting students (mean = 8.22). However, the univariate test results indicate that the difference between the two groups of tertiary accounting students on ambiguity tolerance is not significant (p = 0.386). The descriptive statistics and the univariate tests are reported in Table 4.

Table 4
H2: Descriptive Statistics and Results of Univariate Tests for Ambiguity Tolerance between First Year and Final Year Accounting Students

Accounting Students	Mean	Std. Deviation	N	F	Significance Level
First year	8.22	2.797	253	0.753	0.386
Final year	8.47	2.626	144		
Total	8.34	2.752	397		

Overall, the results do not fully support H2 and show that tertiary education has no significant effect on ambiguity tolerance. In the context of this study, the results make intuitive sense because as a personality trait, ambiguity tolerance requires more than two to three years of university study to be significantly changed.

5.4 Impact of Tertiary Education on Accounting Students' Preference for Using IFRS (H3)

H3 expects that tertiary accounting students who are at a later stage of their accounting degree have a greater preference for using IFRS in exercising their judgment than students who are at an early stage of their accounting degree.

A multivariate test (MANOVA) was used to determine whether a significant difference exists between the first year and third year accounting students on the preference for using IFRS across the ten financial reporting contexts. The results indicate that a significant difference exists ($p = 0.009$) between first year and third year accounting students across the ten financial reporting contexts.

In six out of ten accounting contexts, third year accounting students have a greater preference for using IFRS in exercising their judgment than first year accounting students. In contexts where IFRS sections contain uncertainty expressions, which are Lease term (IAS 17/U.S. ASC 840), Lease minimum payment (IAS 17/U.S. ASC 840), Goodwill impairment (IAS 36/U.S. ASC 350) and Consolidation (IFRS 10/U.S. ASC 810), third year students expressed a preference for IFRS in all cases over the clear-cut numerical definitions contained in U.S. GAAP. Third year students indicated mixed opinions with regard to the second type of expressional difference, which is the general principles of accounting treatments in IFRS versus industry specifics in U.S. GAAP, detailed in sections on Related party (IAS 24/U.S. ASC 850), Contingent liability (IAS 37/U.S. ASC 450-954), Revenue from sales of goods (IAS 18/U.S. ASC 985-605), Revenue from rendering of services (IAS 18/U.S. ASC 985-605), Research and development (IAS 38/U.S. ASC 350) and Interest capitalisation (IAS 23/U.S. ASC 835). There were only two contexts in which IFRS were preferred over U.S. GAAP by third year students.

Univariate test results indicate that significant differences exists in two financial reporting contexts at $p < 0.05$ and another financial reporting context at $p < 0.10$. However, of the three financial reporting contexts where significant differences exist, two were consistent with the predicted direction. The descriptive statistics and the results of the multivariate and univariate tests for each of the ten financial reporting contexts are given in Table 5.

Table 5
H3: Descriptive Statistics and Results of Univariate and Multivariate Tests for Preference of Using IFRS between First Year and Final Year University Accounting Students

IFRS	Accounting Students	Mean	Std. Deviation	N	F	Significance Level	Direction as Predicted
Multivariate test					2.388	0.009***	
Univariate tests: IAS 17 *Lease* - Lease Term	First year	3.90	1.659	253			
	Final year	4.00	1.505	144	0.376	0.540	Yes
	Total	3.93	1.604	397			
IAS 17 *Lease* - Minimum Lease Payment	First year	3.95	1.618	253			
	Final year	4.27	1.618	144	3.551	0.060*	Yes
	Total	4.07	1.623	397			
IAS 18 *Revenue* - Sale of Goods	First year	4.66	1.651	253			
	Final year	4.48	1.546	144	1.153	0.284	No
	Total	4.59	1.614	397			
IAS 18 *Revenue* - Rendering of Services	First year	4.70	1.562	253			
	Final year	4.51	1.295	144	1.573	0.210	No
	Total	4.63	1.472	397			
IFRS 10 *Consolidation* - Controlling Interest	First year	3.75	1.645	253			
	Final year	4.29	1.519	144	10.629	0.001***	Yes
	Total	3.94	1.620	397			
IAS 36 *Impairment of Assets* - Goodwill Impairment	First year	3.87	1.651	253			
	Final year	4.06	1.497	144	1.340	0.248	Yes
	Total	3.94	1.597	397			
IAS 23 *Borrowing Costs* - Interest Capitalisation	First year	4.11	1.510	253			
	Final year	4.24	1.225	144	0.805	0.370	Yes
	Total	4.16	1.413	397			
IAS 24 *Related Party* – Definition	First year	4.43	1.475	253			
	Final year	4.24	1.385	144	1.554	0.213	No
	Total	4.36	1.444	397			
IAS 37 *Contingent Liabilities* - Recognition	First year	4.90	1.559	253			
	Final year	4.57	1.388	144	4.493	0.035**	No
	Total	4.78	1.506	397			
IAS 38 *Intangibles* - Research and Development	First year	4.19	1.453	253			
	Final year	4.32	1.471	144	0.770	0.381	Yes
	Total	4.23	1.459	397			

***Significant at $p < 0.01$; **Significant at $p < 0.05$; *Significant at $p < 0.10$

Overall, the results partly support H3. Although a significant difference exists between the first year and third year accounting students in their preference for using IFRS across the ten financial reporting contexts, third year students do not always prefer to use IFRS to a greater extent than first year students. Students' preferences for using IFRS were inconsistent and subject to individual financial reporting contexts.

Additional Analysis

Additional analysis has been conducted across the ten financial reporting contexts to provide further insights into the difference in preference for using IFRS of first year and third year accounting students. As mentioned in Chapter 4, there are two types of expressional difference identified by this study. The first type of difference is the existence of uncertainty expressions in IFRS, whereas U.S. GAAP tends to contain clear-cut definitions in the form of numerical expression (the relevant sections of this kind of difference are Lease term (IAS 17/U.S. ASC 840), Lease minimum payment (IAS 17/U.S. ASC 840), Goodwill impairment (IAS 36/U.S. ASC 350), and Consolidation (IFRS 10/U.S. ASC 810)). The second type of difference recognised by this study is the tendency for IFRS to contain only general principles of accounting treatments and the tendency for U.S. GAAP to also contain a number of industry-specific or transaction-specific guidelines for practitioners to follow, including Related party (IAS 24/U.S. ASC 850), Contingent liability (IAS 37/U.S. ASC 450-954), Revenue from sales of goods (IAS 18/U.S. ASC 985-605), Revenue from rendering of services (IAS 18/U.S. ASC 985-605), Research and development (IAS 38/U.S. ASC 350) and Interest capitalisation (IAS 23/U.S. ASC 835).

A multivariate test (MANOVA) was used to determine whether a significant difference exists between the first year and third year accounting students on the preference for using IFRS across the two categories of financial reporting contexts. The result indicate that a significant difference exists ($p = 0.017$) between first year and third year accounting students across the first category of difference i.e. the existence of uncertainty expression in IFRS vs U.S. GAAP with clear-cut definitions in the form of numerical expression. However, the difference was not significant ($p = 0.118$) between first year and third year accounting students across the second category of difference, i.e. general principles of accounting treatments in IFRS vs U.S. GAAP containing industry-specific details. The descriptive statistics and the results of multivariate and univariate tests for each of the two categories of financial reporting contexts are reported in Table 6a and 6b.

These results demonstrate that students' preference for using IFRS is affected by the nature and characteristics of the individual accounting standards in question. For example, the third year accounting students prefer to use IFRS in general when those standards contain uncertainty expressions, such as "major" and "substantially", as opposed to U.S. GAAP which tends to contain clear-cut definitions in the form of numerical expressions.

Table 6a
Descriptive Statistics and Results of Univariate and Multivariate Tests for Preference of using IFRS between First Year and Final Year University Accounting Students Across the Category of Uncertainty Expressions vs Numerical Definitions

IFRS	Accounting Students	Mean	Std. Deviation	N	F	Significance Level
Multivariate Test					3.057	0.017**
Univariate tests: IAS 17 *Lease* - Lease Term	First year	3.90	1.659	253	0.376	0.540
	Final year	4.00	1.505	144		
	Total	3.93	1.604	397		
IAS 17 *Lease* - Minimum Lease Payment	First year	3.95	1.618	253	3.551	0.060*
	Final year	4.27	1.618	144		
	Total	4.07	1.623	397		
IFRS 10 *Consolidation* - Controlling Interest	First year	3.75	1.645	253	10.629	0.001***
	Final year	4.29	1.519	144		
	Total	3.94	1.620	397		
IAS 36 *Impairment of Assets* - Goodwill Impairment	First year	3.87	1.651	253	1.340	0.248
	Final year	4.06	1.497	144		
	Total	3.94	1.597	397		

***Significant at $p < 0.01$; **Significant at $p < 0.05$; *Significant at $p < 0.10$

Table 6b
Descriptive Statistics and Results of Univariate and Multivariate Tests for Preference of using IFRS between First Year and Final Year University Accounting Students Across the Category of General Principles vs Industry-Specific Details

IFRS	Accounting Students	Mean	Std. Deviation	N	F	Significance Level
Multivariate Test					1.707	0.118
Univariate tests: IAS 18 *Revenue* - Sale of Goods	First year	4.66	1.651	253	1.153	0.284
	Final year	4.48	1.546	144		
	Total	4.59	1.614	397		
IAS 18 *Revenue* - Rendering of Services	First year	4.70	1.562	253	1.573	0.210
	Final year	4.51	1.295	144		
	Total	4.63	1.472	397		
IAS 23 *Borrowing Costs* - Interest Capitalisation	First year	4.11	1.510	253	0.805	0.370
	Final year	4.24	1.225	144		
	Total	4.16	1.413	397		
IAS 24 *Related Party* – Definition	First year	4.43	1.475	253	1.554	0.213
	Final year	4.24	1.385	144		
	Total	4.36	1.444	397		
IAS 37 *Contingent Liabilities* - Recognition	First year	4.90	1.559	253	4.493	0.035**
	Final year	4.57	1.388	144		
	Total	4.78	1.506	397		
IAS 38 *Intangibles* - Research and Development	First year	4.19	1.453	253	0.770	0.381
	Final year	4.32	1.471	144		
	Total	4.23	1.459	397		

***Significant at $p < 0.01$; **Significant at $p < 0.05$; *Significant at $p < 0.10$

CHAPTER 6 CONCLUSIONS, IMPLICATIONS, LIMITATIONS AND AVENUES FOR FURTHER RESEARCH

6.1 Conclusions and Implications

This study used a survey questionnaire to investigate the potential role that the personality trait of ambiguity tolerance plays in tertiary accounting students' acceptance of the ambiguity present in IFRS. The first hypothesis examined the influence of ambiguity tolerance on students' preference for using IFRS on first year and third year students respectively. It was expected that students who are tolerant of ambiguity would find IFRS preferable to U.S. GAAP. However, the results did not support H1. For first year students, it seems that ambiguity tolerance did not have a significant impact on students' preference for using IFRS, while for third year students, it showed that ambiguity intolerant students in some cases preferred IFRS more than ambiguity tolerant students, or were indifferent.

The lack of impact of ambiguity tolerance on the preference of first year accounting students for using IFRS could be because first year students have not yet acquired enough knowledge to form significant accounting judgments, or a preference for whether a principles-based or a rules-based standard is more appropriate. As for third year students, a tendency to prefer a principles-based or a rules-based standard exists which could result from the accumulation of wider-ranging and more in-depth accounting-related knowledge. However, third year students who are tolerant of ambiguity showed a lesser preference for IFRS than students who are intolerant of ambiguity.

There are other factors that might have an impact on students' preference for standards and which might be responsible for a lack of correlation between ambiguity tolerance and standards preference. Language capability could be one of the examples. Language capability might easily affect an individual's preference for reading passages that are short and concise. That is to say, a student who does not like reading long paragraphs in English as a result of the limitations of their language ability, might simply prefer a shorter standards section to a longer one. Standards preference could be an overall result affected collectively by a number of variables.

In the second hypothesis, it was expected that third year university students would have a higher level of ambiguity tolerance because of their additional years of tertiary education, since problem-solving skills for particularly unstructured and ambiguous situations is one of the graduate capabilities proposed by tertiary education institutions. The results show that third year tertiary accounting students are more tolerant of ambiguity than first year accounting students, though the difference is insignificant.

It is important that university graduates have the right attitude towards ambiguous situations and problems, because the problems they are required to solve once they begin their accounting career are likely to be unstructured and ambiguous. Individuals who are more tolerant of ambiguity are likely to feel more comfortable about ambiguous situations and problems, and hence are more likely to perform better than others who view ambiguity as a source of stress and discomfort. Therefore, university education programs should seek to help students to develop a sense of comfort when faced with ambiguity, and to develop problem-solving skills for ambiguous situations by incorporating unstructured study tasks into their programs.

It was expected that students would become more tolerant of ambiguity after years of tertiary education. The results of H2 somewhat support this idea that the ambiguity tolerance of university students increases with their years of study. However, the level of increase is not significant, which could provide insight for tertiary educators to ensure that the design and delivery of programs and subjects enable students to develop essential graduate capabilities.

The results also have implications for students' development and career choices. The results indicate that the personality traits of individuals, such as ambiguity tolerance, cannot be changed easily by currently available educational programs. Therefore, it is important for students to have a deep understanding of their own personality and other work-related traits, and to make their career plans accordingly.

The third hypothesis proposed that accounting tertiary education has an impact on students' preference for using IFRS. That is to say, it was predicted that third year accounting students would prefer IFRS more than first year students. The results partly support the hypothesis, showing that a significant difference exists between first year and third year accounting students in their preference for using IFRS across the ten financial reporting contexts. Although the third year students do not always prefer to use IFRS to a greater extent than first year

students, they did express a preference for IFRS rather than U.S. GAAP in a number of accounting contexts.

Additional analysis has been conducted on this matter for further investigation. The selected accounting contexts have been divided into two categories, namely uncertainty expressions in IFRS versus clear-cut definitions in numerical forms in U.S. GAAP, and general accounting principles versus industry-specific guidance. The results indicate that third year students prefer IFRS to U.S. GAAP in general in the first category. However, there is no distinctive preference for using IFRS in the second category. That is to say, students form their preference for standards specifically in relation to individual contexts, according to the nature and characteristics of the standards.

The practical implications of the findings are important in that they suggest that accounting students' preference for using IFRS is somewhat influenced by tertiary education. The results also reveal that the future accountants have an inconsistent preference for IFRS which is subject to individual financial reporting contexts. The findings are important for tertiary accounting education institutions, since one of their roles as education providers is to help students develop suitable skills and attitudes for the advancement of their future career, and it is therefore important in the field of accounting that future accountants are fully prepared to start practising in the context of IFRS in Australia. As the results show, there is a degree of association between tertiary education and standards preference, but since they also identify mixed attitudes of students to IFRS, universities could potentially reassess and improve their teaching program to address this issue.

This study could also be insightful for standard setters. Both first year and third year students show an inconsistent preference for IFRS. Supposedly, the majority will become accountants and start practising in Australia, where IFRS have been adopted. Since IFRS are known as a set of accounting standards that relies heavily on professional judgment, their appropriate interpretation and application necessitate not only professional expertise but also appropriate attitudes. The absence of a clear preference for IFRS from not only first year but also third year students could be of concern to IFRS standard setters.

6.2 Limitations and Avenues for Further Research

This study has the following four limitations. First, the sample of accounting students was drawn from Macquarie University North Ryde Campus in Sydney, which may limit the generalisability of the results. Future studies could consider taking a broader sample of accounting students.

Second, although the impact of a number of factors including level of education and familiarity with accounting and accounting standards are assumed to be controlled in this study, since the survey was carried out on university students studying two units in class, the list of factors is not exhaustive. For example, the impact of other factors such as language capability and student competency in accounting may also help to explain the differences in standards preferences.

Third, although the standards sections used in this study have been carefully selected to ensure the difference between IFRS and U.S. GAAP extractions lies only in expressional forms, and the essence of the accounting definitions and treatments are identical, the participants might identify other types of difference. Other factors might affect students' preferences, for example the wording style or length of standards. Future studies could explore a greater number of accounting topics to capture other possible explanations for the choice of preference.

Fourth, due to time limitations when conducting the survey, the choices that the participants were required to make were only an indication of preferences between standards, reached by reading the standard extractions across the ten financial reporting contexts. The preferences of students on standards might be revealed more accurately if students were asked to exercise professional judgment in the application of standards to real-world cases. Future studies might also consider the incorporation of accounting cases.

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APPENDIX

SURVEY QUESTIONNAIRE