WHEN SPENDING MORE FEELS LIKE LESS: THE INFLUENCE OF THE BUY-NOW-PAY-LATER PAYMENT METHOD ON CONSUMER SPENDING BEHAVIOUR

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Abstract

A new type of buy-now-pay-later payment method allows consumers to own their purchases prior to payment by interest-free instalments. Despite rapid growth and consumer self-reports that buy-now-pay-later increases spending, research has not yet explored why this payment method impacts spending behaviour. The purpose of this research is to investigate the underlying psychological mechanisms that influence consumer spending behaviour when using buy-now-pay-later to address this research gap. The results across three experiments indicate that buy-now-pay-later influences consumer spending behaviour in a novel way. The numerosity heuristic, the tendency to infer greater quantity from larger numbers, influences consumers to perceive purchases as less expensive with smaller instalment prices compared to total prices. Consumers perceived that purchases were less expensive and felt less pain of payment when using buy-now-pay-later, leading to increased spending behaviour such as increased purchase intent, the purchase of more expensive items, and an increased amount spent. This explanation, supported by empirical evidence for the influence of buy-now-pay-later on consumer decision-making, extends the current theoretical understanding of the effects of payment modes on consumer spending behaviour, with practical implications for policymakers and retailers.

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Statement of Original Authorship

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signature: _____

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Chapter 1: Introduction

This chapter outlines the background and context (section 1.1) of this thesis by introducing the research problem (section 1.2) and justifying the research (section 1.3) and the methodology employed (section 1.4). Then, definitions (section 1.5) and limitations of scope (section 1.6) are presented. Finally, this chapter outlines the structure of the remaining chapters (section 1.7) of this thesis.

1.1 BACKGROUND

Buy-now-pay-later is a new deferred payment mode that allows consumers to receive the benefits of ownership and consumption prior to full payment by interest-free instalments. The buy-now-pay-later market has experienced rapid growth since the 2015 launch of Afterpay in Australia. Over 2 million Australian consumers, more than 10% of the adult population, used buy-now-pay-later during the 2017-18 financial year (ASIC, 2018a)[1]. The buy-now-pay-later market within Australia has grown from near zero 4 years ago (ASIC, 2018a) to over $6bn in sales in the 12 months to June 2019 (Reserve Bank of Australia, 2019). Australia's largest buy-now-pay-later provider, Afterpay, expanded into the U.S. in May 2018 (Yates, 2018) and into the U.K. in June 2019 with similar growth in each of these markets (Afterpay, 2019).

In practice, buy-now-pay-later has rapidly gained popularity with consumers in Australia, and the implications have drawn the attention of policymakers. A consumer survey as part of a recent government report revealed that consumers believed buy-now-pay-later payments "allowed them to buy more expensive items that they otherwise could not afford in one payment (81%), spend more than they normally would (64%), and make more spontaneous purchases (70%)" (ASIC, 2018a, p. 11). The new buy-now-pay-later payment mode, therefore, is perceived to influence consumer spending behaviour to buy more expensive products, spend more, and make purchase decisions faster (ASIC, 2018a). However, we do not know if the self-reported

[1] ASIC (Australian Securities and Investments Commission) is the Australian Commonwealth Government body which acts as Australia's corporate, financial services and consumer credit regulator.

consumer perceived effects actually do impact spending. Subsequently, this research aims to investigate empirically if buy-now-pay-later influences spending behaviour.

The payment mode literature reveals that the payment mode impacts how likely consumers are to buy (Soman, 2001), what products they buy (Bagchi & Block, 2011; Thomas, Desai, & Seenivasan, 2011), and how much they spend (Feinberg, 1986). Research has shown that compared to cash, credit cards tend to lead to similar outcomes (Feinberg, 1986) to those documented for buy-now-pay-later (ASIC, 2018a). Although credit cards also defer payment, this research argues that credit cards vary substantially in terms of potential financial costs, the flexibility of payment timing and amounts, the salience of payment, and the way in which price is presented as the total price as opposed to instalments. However, there is an absence of academic research on the effects of the *new* buy-now-pay-later payment mode as well as the processes underpinning them, and given the identified differences, research on other similar payment modes may not generalise to buy-now-pay-later. Furthermore, research has not investigated the impact of instalment payments on consumer spending. Subsequently, we do not know the underlying mechanisms that predict and explain how the new buy-now-pay-later payment mode influences consumer spending behaviour. This research examines the gaps in understanding of the underlying payment mode mechanisms which explain the influence of the new buy-now-pay-later payment mode on spending.

1.2 RESEARCH PROBLEM

The purpose of this research is to address the identified research gaps by answering the following research question:

> **What are the underlying mechanisms that predict and explain the influence of the new buy-now-pay-later payment mode on consumer spending behaviour?**

The research problem is addressed by three experiments that investigate the influence and underlying mechanisms of the new buy-now-pay-later payment mode on consumer spending behaviour. This research concludes that buy-now-pay-later combines a deferred payment mode with the presentation of instalment payments to influence consumer perception of price. Thus, this study provides a theoretical explanation supported by empirical evidence of the impact of buy-now-pay-later on

consumer spending behaviour. This research finds that buy-now-pay-later instalment payments influence consumer perception of price and in turn consumer spending behaviour differently from other existing payment modes. This research, therefore, offers a novel account of how the new buy-now-pay-later payment mode influences consumer spending decisions.

1.2.1 Theories and hypotheses

This research draws on the numerosity effect (Pelham, Sumarta, & Myaskovsky, 1994) and the pain of payment (Prelec & Loewenstein, 1998) to examine the theoretical basis of how the new buy-now-pay-later payment mode influences consumer spending. Buy-now-pay-later is conceptualised in this research as a deferred payment mode which presents instalment payment pricing. Hence, this research combines the numerosity effect to explain the effect of instalment prices on spending behaviour, and the pain of payment to explain the effect of payment modes on consumer spending behaviour.

Numerosity. How a quantity is presented influences the perception of the magnitude of that quantity (Burson, Larrick, & Lynch, 2009; Josephs, Giesler, & Silvera, 1994; Pandelaere, Briers, & Lembregts, 2011; Pelham et al., 1994). The numerosity heuristic is the tendency to judge quantities by an over-focus on numbers and diminished attention on the unit (Pelham et al., 1994). The same quantity expressed in small numbers (i.e., less numerous) is perceived as less than when expressed in large numbers (i.e., more numerous). For example, 4 kilograms is perceived as being less than 4,000 grams, even though both quantities are the same. In the domain of consumer spending, when the same purchase is presented in a less numerous foreign currency, numerosity increases consumer spending as the lower face-value of the price makes the purchase appear less expensive (Raghubir & Srivastava, 2002).

Pain of payment. The pain of payment is the negative affect of parting with money (Shah, Eisenkraft, Bettman, & Chartrand, 2016). Payment modes influence the pain of payment, which then influences consumer spending (Bagchi & Block, 2011). A lower pain of payment increases consumer spending behaviour in terms of purchase intent and the amount spent (Shah et al., 2016). The pain of payment is also influenced by factors other than the payment mode, such as the payment timing with consumption

(Prelec & Loewenstein, 1998), payment magnitude (Shah et al., 2016), and what the purchase represents to the consumer (Zellermayer, 1996).

Subsequently, Chapter 2 establishes the following hypotheses:

- Buy-now-pay-later will increase spending behaviour compared to other payment modes.
- Less numerous buy-now-pay-later instalment prices (compared to more numerous prices) will lower perceived expensiveness, which in turn will lower the pain of payment, and ultimately increase spending behaviour.

1.3 CONTRIBUTIONS AND JUSTIFICATION FOR THE RESEARCH

Addressing the research problem provides several contributions. These contributions are presented in Section 7.2. In summary, first, this research contributes to the understanding of financial decision-making within the payment mode research stream by providing empirical evidence of the effect of the new buy-now-pay-later payment mode. Second, the numerosity effect is extended from the domain of currency and product attributes within consumer behaviour to the domain of payment modes and instalment pricing. Specifically, the numerosity effect lowers the perception of instalment payment prices. Third, this research finds that the pain of payment is influenced by the subjectively perceived price, and not just the objective magnitude of the purchase, extending the research on the factors of the pain of payment.

In addition to the theoretical contributions, this research problem has practical significance for potential applications to retailers, policymakers, product managers and consumers. Validation of the perceived effects, and an understanding of the underlying mechanisms that cause these effects, can assist stakeholders to make better-informed decisions. Retailers gain by knowing whether offering the new buy-now-pay-later payment mode benefits their business. Policymakers can determine potential issues to effectively target interventions that ensure that overspending does not result in financial difficulties for consumers whilst not unduly impacting the benefits to consumers, retailers and the economy. Product managers of payment service providers can design payment services that better meet the needs and desires of consumers. Finally, consumers can understand how they are affected by using the new buy-now-pay-later in order to make better-informed choices. This research provides the first

steps to assist these stakeholders by providing knowledge of the underlying mechanisms which influence consumer spending when using buy-now-pay-later.

1.4 METHODOLOGY

This research employs an experimental research strategy to test the underlying mechanisms which affect consumer spending behaviour. An experimental design is appropriate to test cause and effect relationships between two variables (Perdue & Summers, 1986). As this research aims to investigate the underlying mechanisms that influence consumer spending behaviour as a result of the use of the new buy-now-pay-later payment mode, the experimental methodology is appropriate to achieve this aim. Furthermore, this research aims to investigate the underlying mechanisms that influence decision-making, which requires the measurement of intervening variables and rigorous control of the decision-making environment in order to establish causality (Falk & Heckman, 2009). Experimental studies can more satisfactorily control conditions and measure these decision-making variables than other research methods, allowing causal inferences to be drawn (Falk & Heckman, 2009), which makes the experimental research method the most appropriate method to address this research question.

1.5 DEFINITION OF BUY-NOW-PAY-LATER

The phrase "buy now, pay later" has long been synonymous with credit cards (Feinberg, 1986; Hirschman, 1979), but is also used loosely to refer to deferred payments (Siemens, 2007), other credit types (The Economist, 2018), and broader sociological circumstances where benefits proceed costs (Regens & Lauth, 1992). This research proposes a formal definition of a new type of payment mode not yet specified in the academic literature. There are 4 components to this definition, which are next explored and justified.

First, buy-now-pay-later is defined as a payment mode. A payment mode distinguishes buy-now-pay-later from other mechanisms that may defer payment, such as a promotional offer or strategy (e.g., “nothing to pay” or deposit only offers) or a payment term of the seller (e.g., partial payment or favourable payment terms including billing on account). Second, buy-now-pay-later defers payment in that the payment is not made in full by the buyer at purchase, yet ownership of the purchase is transferred at purchase. This distinguishes buy-now-pay-later from lay-by (Australia)

or layaway (U.S.) services which require the receipt of payments in full prior to ownership of the purchase. Third, as a third-party payment mode, buy-now-pay-later is a service offered by a third-party who then assumes responsibility for payment to the seller. Last, fixed and unconditionally interest-free payment terms are set at purchase, such that meeting the payment terms does not result in any interest charges. Additional or early repayments above the minimum repayment to avoid interest charges, which characterise interest-free offers of credit facilities, do not define buy-now-pay-later services which therefore vary substantially in terms of potential financial costs. Services which charge interest are defined as a credit facility and are excluded from the definition of buy-now-pay-later, which distinguishes the buy-now-pay-later service from interest-free periods of credit cards, leasing or other credit facilities such as personal loans. The payments are fixed in that the number of payments, timing and value of each repayment are set at purchase, in contrast to credit cards and overdrafts which offer the flexibility of varying repayment terms. This does not preclude the capability of consumers to make early or additional repayments with buy-now-pay-later. Fees may be charged, but services which charge fees that are proportional to the amount spent, including services which charge fees in lieu of interest such as Sharia financing, are excluded from this definition. Therefore, in summary, this research proposes a formal definition of buy-now-pay-later as a third-party deferred payment mode which allows a consumer to own a purchase upfront and defer payment partially or in full, with the fixed and unconditionally interest-free payment terms set at the point of purchase.

1.6 SCOPE AND DELIMITATIONS

The scope is delimited to decision-making that leads to consumer spending behaviour after the decision to use the buy-now-pay-later payment mode. The research, therefore, does not consider the choice of payment mode or the impact of buy-now-pay-later on post-purchase consumer perception. Hence, this research focuses on the influence of buy-now-pay-later *on* the decision-making process that determines spending behaviour, rather than the choice of payment mode or how buy-now-pay-later influences post-purchase evaluations.

1.7 OUTLINE OF THIS THESIS

This thesis consists of seven chapters and is structured as follows. This chapter outlined the foundations of this report by introducing the research problem and background, justifying the research and methodology, and presenting a definition of buy-now-pay-later and delimitations of scope. Chapter 2 reviews the literature and theoretical background underlying the research and develops hypotheses from the background literature. Chapter 3 discusses the research methodology and the research design to test the conceptual framework. Chapter 4, 5, and 6 presents the method and data analysis of study 1, 2 and 3 respectively. Chapter 7 discusses the practical and theoretical implications of this research, concluding with limitations and suggestions for future research.

Chapter 2: Theoretical Background

This chapter reviews the literature of the key topics, beginning with the theoretical background (section 2.1) to the research question. A brief review of payment mode theories (section 2.2) provides an overview of the theoretical explanations for the effect of payment modes on spending behaviour, and justifies the use of the pain of payment (section 2.3) to address the research question by explaining the effect of payment modes on spending behaviour. Next, the numerosity effect (section 2.4) explains the influence of instalment payment prices on the pain of payment. Then, the conceptual framework (section 2.5) is developed and the formal hypotheses are stated, and finally, a summary (section 2.6) highlights the implications for the following chapters.

2.1 THEORETICAL BACKGROUND

This section examines the payment mode and the numerical perception literature in relation to the research question. It specifically focuses on the pain of payment theory and the numerosity effect to examine the theoretical basis of how the buy-now-pay-later payment mode may influence the consumer decision-making process. The pain of payment is situated in the payment mode research stream of marketing, drawing primarily on concepts from the disciplines of psychology and economics (Prelec & Loewenstein, 1998). The numerosity effect research in marketing is based on concepts of perception and judgement from psychology within the anchoring and adjustment paradigm (Pandelaere et al., 2011). This section examines how both theories plausibly explain the impact of buy-now-pay-later consistent with the consumer perceived increased spending behaviour documented by ASIC (2018c).

2.2 OVERVIEW OF EXISTING EXPLANATIONS OF PAYMENT MODE EFFECTS

The underlying processes of how payment modes influence consumer behaviour is an ongoing debate (Thomas et al., 2011), with a range of competing explanations proposed without consensus. Explanations for the underlying mechanism include the

pain of payment (Prelec & Loewenstein, 1998), price inattention (Soman, 2001), inability to recall past expenses (Srivastava & Raghubir, 2002), construal level theory (Thomas et al., 2011), and conditioned association bias (Feinberg, 1986). These explanations and their relevance to this research are briefly examined in order.

Pain of Payment. As an affective reasoning process (Thomas et al., 2011), the pain of payment is the extent to which pain is felt when parting with money (Chatterjee & Rose, 2012). There is broad empirical support that the pain of payment influences spending behaviour (Prelec & Loewenstein, 1998; Raghubir & Srivastava, 2008; Shah et al., 2016; Soman, 2003). The pain of payment has also been used as a theoretical basis to extend further conceptual relationships, such as priming's influence on the salience of costs or benefits (Chatterjee & Rose, 2012), the positive emotions experienced during and after purchase (Hahn, Hoelzl, & Pollai, 2013), and consumer's post-purchase psychological connection to the item purchased (Shah et al., 2016). A lower pain of payment has been demonstrated to influence consumer decision-making to increase purchase intent (Soman, 2001), choose more expensive products (Raghubir & Srivastava, 2008), increase the amount spent (Soman, 2003), and make faster decisions (Shah et al., 2016). This research adopts the theoretical account that payment modes affect the pain of payment, and that pain of payment is the underlying mechanism that influences consumer purchase decisions (Prelec & Loewenstein, 1998).

Price inattention and expense recall. Soman (2001) finds that future spending is driven by the recall of past expenses, so payment modes that inhibit recall of past spending promote future spending. Paying with cash makes consumers pay more attention to prices, and therefore they are better able to recall those expenses, whilst credit cards minimise the attention to prices during the purchase process and thereby inhibit the later recall of expenses, subsequently leading to the underestimation of past expenses and future overspending (Raghubir & Srivastava, 2002). However, further research demonstrates no difference in the recall of expenses paid by cash and credit card, and that the pain of payment predicts the amount spent and the number of items purchased (Thomas et al., 2011). This suggests that recall or price inattention are unlikely to be the underlying mechanisms that influence consumer purchase decisions, whilst supporting that pain of payment is the underlying mechanism that influences spending behaviour.

Construal level theory. It is speculated that transactions by card may be construed abstractly by consumers, whilst cash might be construed concretely due to the vivid nature of cash (Thomas et al., 2011). Construing the same item or decision at different levels of abstraction can influence perception and decision-making, leading to preference reversals (Trope, Liberman, & Wakslak, 2007). Subsequently, a more abstract level of thinking could be induced by the temporal separation (Trope & Liberman, 2003) of credit cards. An abstract construal due to increased temporal distance reduces the focus on the negative aspect of payment costs and increases the focus on benefits of spending behaviour (Bornemann & Homburg, 2011) compared to the concrete thinking of cash. However, this account is problematic and would appear an incomplete explanation. Credit cards do not demonstrate higher levels of construal to debit cards in empirical testing, despite the greater temporal separation of credit cards (Chen, Xu, & Shen, 2017). The studies that have empirically tested an explanation based on construal level theory have failed to rule out the pain of payment as an alternative explanation, and studies that have tested both theories have tended to support the pain of payment explanation over construal level theory (Chen et al., 2017).

Conditioned association bias. Conditioned associations are those that are formed over time by the way payment modes are used (Chatterjee & Rose, 2012). The classical conditioning explanation is based on credit card cues that repeatedly occur at the same time as purchases (Feinberg, 1986). When consumers spend money, credit card names and logos appear at the point of purchase and become associated with spending, such that producing these cues in the future will then induce spending. Alternatively, using the same theoretical conditioning basis, the separation of the cost of payment with the purchase by credit cards shifts consumer focus to benefits and away from the costs of payment which are incurred at a later point in time (Chatterjee & Rose, 2012). A conditioned association explains how the mere presence of a credit card image in the purchase context (Feinberg, 1986) or the act of producing a credit card (Prelec & Simester, 2001) increases consumer spending, even when the credit card is not actually used to make the purchase. However, a conditioned association does not apply to a new payment mode such as buy-now-pay-later as an association between buy-now-pay-later and spending or purchase has not been formed.

2.3 PAIN OF PAYMENT

The pain of payment is the negative affect of parting with money (Shah et al., 2016). Payment modes, such as cash, credit card or cheque, influence the pain of payment which in turn influences consumer decision-making (Bagchi & Block, 2011). A lower pain of payment increases consumer purchase intent, the amount spent, and decision speed (Shah et al., 2016), and is associated with positive consumer affect during decision-making purchase processes (Hahn et al., 2013). The pain of payment is influenced by two factors of the payment mode, being payment timing (Prelec & Loewenstein, 1998) and the salience of expense due to payment transparency (Soman, 2003). Next, how these two factors influence the pain of payment are explained.

First, the payment timing with consumption influences the pain of payment (Siemens, 2007). The pain of payment and the pleasure of consumption are related through the concept of coupling (Prelec & Loewenstein, 1998), which is the extent to which consumption is associated with the parting of money (Raghubir & Srivastava, 2008). The less consumers' feel they are parting with money, the less they experience the pain of payment. Payment modes influence coupling (Prelec & Loewenstein, 1998) by creating temporal or mental separation (Thaler, 1999) between the purchase and the pain of payment from parting with money. Separation of purchase and payment leads to decoupling and a decreased pain of payment. Hence, compared to cash, deferred payment modes such as credit cards and cheques reduce coupling by temporal separation (Prelec & Loewenstein, 1998) to lower the pain of payment associated with the purchase decision.

Decoupling increases consumer preference for deferred payment modes by lowering the pain of payment (Prelec & Loewenstein, 1998). Cash is more painful than credit cards (Thomas et al., 2011) as cash results in an immediate reduction in wealth, whilst credit cards defer parting with money (Soman, 2001) to decouple the purchase from consumption. Payment decoupling due to temporal separation (Prelec & Loewenstein, 1998) implies that debit cards and cash involve the same pain of payment (Shah et al., 2016) as wealth depletion occurs at the same time. However, debit cards exhibit lower pain of payment than cash (Thomas et al., 2011) even though the timing of outflows is identical. This difference in the pain of payment between debit cards and cash is due to the payment transparency.

Second, the transparency of the payment mode impacts the pain of payment by altering the salience of payment (Raghubir & Srivastava, 2008). The payment transparency is the salience of the payment mode relative to cash (Soman, 2003). The physical appearance of the payment mode impacts the payment salience (Raghubir & Srivastava, 2008) and therefore the pain of payment (Thomas et al., 2011). Cash is highly salient due to its physical form; money is visibly seen, felt, counted and then handed over in the act of departing the consumer's possession (Soman, 2003), and hence has the greatest pain of payment (Raghubir & Srivastava, 2008). Generally, the more transparent the payment mode, the higher the pain of payment (Raghubir & Srivastava, 2008). Cash is the most transparent and most painful payment mode, followed by cheque and then credit card (Soman, 2001), which are less transparent and therefore less painful (Soman, 2003). Credit cards and debit cards are both more transparent than stored value cards and bank account direct debits (Soman, 2003). Gift cards, certificates (Raghubir & Srivastava, 2008) and tokens are less transparent than cash (Shah et al., 2016), and exhibit lower pain of payment (Soman, 2003). The lower salience of payment with non-cash payment modes reduces the pain of payment experienced.

Buy-now-pay-later, as a less transparent and more temporally separated payment mode, is expected to exhibit a lower pain of payment than cash. Cash is the most transparent payment mode (Soman, 2003), with the payment timing of purchase and wealth depletion immediate (Soman, 2001). Both credit cards and buy-now-pay-later decouple payment and are less transparent than cash, with buy-now-pay-later estimated to decouple payment slightly less than credit cards, offset by a slightly less transparent payment mechanism.

The specific way in which the timing of payment is altered with buy-now-pay-later is unlike other payment modes. Cash purchase and payment occur at the same time. Unlike cash, payment timing with buy-now-pay-later is decoupled with consumption due to the temporal separation of purchase from a series of instalment payments. Payment timing of buy-now-pay-later should, therefore, lower the pain of payment compared to cash. Compared to credit cards, buy-now-pay-later also separates payment timing from purchase, decoupling purchase from payment. This temporal separation is predicted to reduce the pain of payment (Soman, 2001) of both buy-now-pay-later and credit card compared to cash. However, credit cards are

predicted to exhibit a lower pain of payment than buy-now-pay-later due to greater separation. Temporal separation is expected to be greater with credit cards due to both an open-ended repayment term and the combination of many purchases into monthly payments, potentially over many periods. As coupling requires the ability to clearly and unambiguously assign costs and benefits with purchase, when costs are aggregated by a credit card monthly bill, the coupling is weakened by the ambiguity of which costs are paying for which benefits (Soman & Gourville, 2001). In contrast, buy-now-pay-later maintains tighter coupling with a defined payment term and instalment payments for each individual purchase. It is clear what purchase the instalment payment is paying for, and therefore, the coupling should be tighter for buy-now-pay-later than credit cards. Given the influence of coupling on the pain of payment (Prelec & Loewenstein, 1998), the payment timing of buy-now-pay-later should, therefore, increase the pain of payment compared to credit cards.

Buy-now-pay-later is expected to be less transparent than cash. The physical form of buy-now-pay-later does not resemble cash, and the purchase process of buy-now-pay-later does not involve rehearsal by counting or handling physical notes or coins. The salience of payment with buy-now-pay-later should, therefore, lower the pain of payment compared to cash. Compared to credit cards, buy-now-pay-later is expected to be less transparent. Paying by credit card is a well-rehearsed payment process of producing a card, and therefore should be a familiar association with payment. In contrast, buy-now-pay-later purchases are facilitated by an online app, even for physical in-store sales, and so does not have the same familiar physical rehearsal process involving a card. In addition, the absence of physical form reduces payment transparency (Soman, 2003). Therefore, payment transparency for buy-now-pay-later is expected to be lower than that for credit cards. As the payment transparency influences the pain of payment (Raghubir & Srivastava, 2008), the lower payment transparency of buy-now-pay-later should, therefore, decrease the pain of payment compared to credit cards. Hence, the net effect of payment timing and transparency of buy-now-pay-later on the pain of payment relative to credit cards is unclear.

The payment magnitude also influences the pain of payment (Prelec & Loewenstein, 1998), independent of the two payment mode factors. A lower payment magnitude will subsequently lower the pain of payment (Shah et al., 2016). Buy-now-

pay-later presents purchase prices as instalment payments of a lower magnitude. Consumers may focus on the lower instalment payment as the payment magnitude instead of the purchase price. This is a research gap that has not been explored. The next section looks at how the instalment payment magnitude influences the perceived expensiveness of the purchase price.

2.4 NUMEROSITY EFFECT

The stream of numerosity research has documented that the numbers and units used to represent a quantity influence the perception of the magnitude of that quantity (Burson et al., 2009; Josephs et al., 1994; Pandelaere et al., 2011; Pelham et al., 1994). Numerosity refers to the magnitude of numbers (Lembregts & Van Den Bergh, 2018). The numerosity effect is the tendency to infer quantity more from the numeric information than from the unit information (Pandelaere et al., 2011). In essence, individuals generally perceive that larger numbers indicate more quantity (Pelham et al., 1994). Price is a quantity of money which can be expressed in different presentations to induce a numerosity effect. For example, $1,200,000 may appear to be more than $1.2 million due to a focus on numbers and a tendency to ignore the unit. The numerosity effect impacts the perception of quantity (Lembregts & Van Den Bergh, 2018) which influences consumer choices (Pandelaere et al., 2011) and preferences (Burson et al., 2009).

Expressing a quantity using different units can change the perception of that quantity (Monga & Bagchi, 2011). Expanding the unit in which a quantity is presented increases the perceived magnitude of quantity due to the numerosity effect (Burson et al., 2009). For example, expanding a price of $1.20 from a unit of dollars to cents increases the number from 1.2 to 120. As consumers focus on the larger number and mostly ignore the unit (Pandelaere et al., 2011), consumers will perceive 120 cents as more than 1.2 dollars. Buy-now-pay-later presents the price of purchase as four instalments[2] (e.g., a $100 purchase is presented as four instalments of $25). Thus, the perceived payment magnitude changes from the full upfront purchase price (an expanded unit; $100 in the above example) to a lower instalment payment price (a

[2] Four instalment payments due every two weeks are the most common buy-now-pay-later terms. Afterpay, the largest buy-now-pay-later service in Australia (Roy Morgan, 2019), makes all purchases under these terms. For simplicity, four instalments are used throughout this research, unless stated otherwise (e.g., study 3).

contracted unit; $25 in the above example). An expanded unit is more numerous and exaggerates the perceived differences between alternatives due to implied discriminability (Burson et al., 2009).

Consumers infer a greater difference in an expanded unit due to an increase in the ease of discrimination (Burson et al., 2009). Greater evaluability due to ease of discrimination increases sensitivity to benefits and costs (Lembregts & Van Den Bergh, 2018). The greater number of increments of an expanded unit increases the perceived range of variation, cueing an inference that the attribute is more precise or more accurate than attributes of contracted units (Pandelaere et al., 2011). Enhancing discrimination of benefits between alternatives increases product valuation (Burson et al., 2009) and consumer preference for higher quality (Pandelaere et al., 2011) and premium products (Wertenbroch, Soman, & Chattopadhyay, 2007), consistent with spending more. The opposite is true for costs, such as price. Contracting the price unit has the opposite effect in the decision-making process. A contracted unit of price causes diminished evaluability, which lowers price discrimination leading to the perception of less price difference between products and ultimately the tendency to choose more expensive products and increase spending behaviour (Burson et al., 2009). Thus, the less numerous instalment payment price, as a contracted unit of price, is predicted to lower the discrimination of price and lower the ease of evaluability of price, leading to less perceived price difference.

Numerosity also impacts purchase decision-making based on the salience of either prices or budgets in the domain of currency (Wertenbroch et al., 2007). The salient reference value in the purchase decision-making process determines whether the numerosity effects results in the perception of more or less expensive prices. In the absence of research which investigates the effect of the numerosity of instalment prices, this research draws on the numerosity of currency as a similar phenomenon which presents prices in different units. There are two conflicting spending predictions proposed by numerosity applied to currency units. First, the face-value effect posits that less numerous units lead to increased purchase intent and amount spent due to the perceived lower face-value of purchase prices (Raghubir & Srivastava, 2002). For example, where 110 Japanese Yen (JPY) = 1 U.S. Dollar (USD), the same purchase for 1,000 JPY in the less numerous USD currency of $9.09 appears a much smaller purchase due to the lower face-value, which increases spending. Second, the opposing

reverse face-value effect prediction is that a less numerous unit leads to less spending due to perceived lower available budget (Wertenbroch et al., 2007) to which the numerosity effect applies. For example, where a budget of 10,000 JPY (equivalent to USD 90.91) is introduced to the decision, the same purchase for 1,000 JPY against the budget of 10,000 leaves 9,000 in spending money, a seemingly large amount of budget remaining. In USD, the $9.09 purchase leaves $81.82 in spending money, which appears to be a relatively smaller amount of remaining budget, which in turn decreases spending. However, this latter case only applies when budgets are salient. For buy-now-pay-later, the instalment payment price is expected to be salient, implying that the face-value effect will apply. Both the face-value and reverse face-value predictions explain the effects of numerosity through the process of anchoring and adjustment (Tversky & Kahneman, 1974) using contrasting salient reference values of either prices or budgets. Consumers may anchor to the instalment payment as the salient reference value and not adequately translate or adjust to the full purchase price. Decision-makers may either fail to consider that translation is possible, lack the motivation to translate, or fail to correctly translate the unit due to the difficulty of calculation, estimation, or anchoring (Pandelaere et al., 2011). Numerosity acts as a default, subconscious and spontaneous heuristic judgment, which is a relatively fast and effortless form of information processing assessed more quickly and easily than counting or calculation (Pelham et al., 1994). Thus, a salient less numerous price may lead to underestimation of costs (Pandelaere et al., 2011). Therefore, a salient buy-now-pay-later instalment price is predicted to result in the perception of a smaller price magnitude.

Finally, the perception of price magnitude may influence the consumer decision-making process. Price is a quantity of money which can be presented in different forms to change the perception of that price by the numerosity effect. Price perception can influence spending behaviour. The money illusion (Shafir, Diamond, & Tversky, 1997), the biased tendency to think in nominal terms rather than real terms, and the Pennies-A-Day (PAD) effect (Gourville, 1998), the reframing of an annual cost into the equivalent daily costs to lower the perceived cost against smaller daily costs, both demonstrate that reframing of price can reduce the perception of price and hence influence decision-making and spending behaviour. However, the pain of payment literature has not appeared to consider the perception of price, but rather has only

measured the objective magnitude of price. Specifically, manipulating the payment magnitude from $10 to $20 for the same purchase was found to influence the pain of payment (Shah et al., 2016), and in regression across a wide range of purchases, the dollar amount was similarly found to influence the pain of payment (Zellermayer, 1996). Prelec and Loewenstein (1998) theorise about imputed costs in terms of dollars spent and the influence on utility as a basis for preferences, but do not measure perceived cost, only the imputed cost based on temporal discounting, nor the pain of payment. Therefore, whether subjective price perception can influence the pain of payment is a research gap which has not been explored. Subsequently, this research reasons that if numerosity changes the perception of magnitude, and the payment magnitude of purchase influences the pain of payment, then the perception of price magnitude may also lower the pain of payment.

2.5 CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The conceptual framework of how buy-now-pay-later impacts the purchase decision-making process is based on theories of the pain of payment and the numerosity effect. Buy-now-pay-later is conceptualised as the combination of a payment mode for which hypotheses are developed from the pain of payment literature, and an instalment payment pricing unit for which hypotheses are developed from the numerosity heuristic literature. This research claims that in combination, these theories explain and predict the effect of buy-now-pay-later on consumer spending behaviour.

The influence of buy-now-pay-later on price perception through instalment prices is the main difference conceptualised between buy-now-pay-later and other payment modes. This research claims that buy-now-pay-later presents purchases in instalment payment prices, which induces a lower perception of price due to the numerosity effect. Other payment modes do not present purchases as instalments, and hence do not influence spending behaviour in this way. This research concentrates on examining this proposed conceptual difference, whilst acknowledging the known effects of payment modes on consumer spending behaviour (i.e., payment timing and transparency). Hence, notwithstanding the expected differences in payment timing and payment transparency, this research primarily tests the claim that buy-now-pay-later instalment payment prices influence spending behaviour by inducing lower perceived expensiveness.

This research proposes that the buy-now-pay-later payment mode influences consumer spending behaviour through a 3-step process. First, due to the numerosity effect, the less numerous buy-now-pay-later instalment price lowers perceived expensiveness compared to the more numerous total price. Second, the lower perceived expensiveness of the instalment payment lowers the pain of payment. Finally, the lower pain of payment influences consumer decision-making to increase spending behaviour. Thus, the two theories of the numerosity effect and the pain of payment explain and predict how buy-now-pay-later influences consumers to increase spending behaviour.

Step 1 – Numerosity of instalment prices lower perceived expensiveness. Buy-now-pay-later presents the price of purchase as a less numerous instalment payment. Findings from the literature on the numerosity effect (Pelham, Sumarta, & Myaskovsky, 1994; Van Den Bergh & Lembregts, 2018; Wertenbroch, Soman, & Chattopadhyay, 2007) posit that individuals are more sensitive to numbers than units when assessing quantity (i.e., $1,000,000 appears more than $1m, even though they are the same quantity of money). Applied to buy-now-pay-later, this research claims that the numerosity effect implies that the same quantity of money presented as a number of instalment payment prices will appear to be less than the total price. Hence, instalment payments will make the same purchase appear less expensive (i.e., 4 payments of $25 will appear to be less expensive than the total price of $100). As a result of the numerosity effect, individuals perceive the same purchase in instalment payment prices as less expensive than the total price. Therefore, it is predicted that the instalment prices of buy-now-pay-later, as less numerous units of price, will be perceived as less expensive than the total price of other payment modes.

Step 2 – Lower perceived expensiveness lowers the pain of payment. Next, the lower perceived expensiveness of buy-now-pay-later instalment payments is predicted to make payment less painful (i.e., lower the pain of payment). A lower payment magnitude decreases the pain of payment (Shah et al., 2016), hence, it is reasoned that the lower perceived payment magnitude of instalment payments lowers the pain of payment. Therefore, lower perceived expensiveness due to the reduced payment magnitude of instalment payments is predicted to lower the pain of payment.

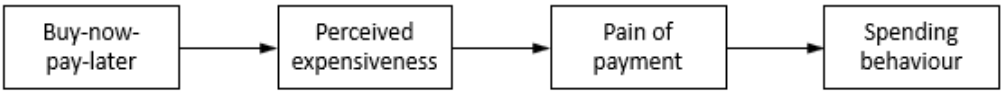
Step 3 - The lower pain of payment increases spending behaviour. Finally, the lower pain of payment influences spending behaviour. The pain of payment mediates the effect of payment modes on consumer spending behaviour (Thomas et al., 2011). A lower pain of payment has been found to increase spending behaviour, specifically the purchase intent (Soman, 2001) and the amount spent (Soman, 2003). Therefore, the lower pain of payment of buy-now-pay-later is predicted to increase spending behaviour.

Therefore, this research claims less numerous instalment prices will lower perceived expensiveness compared to more numerous prices, which will then decrease the pain of payment, and ultimately lead to increased spending behaviour. The effect of buy-now-pay-later (vs. other payment modes) on spending behaviour is predicted to be mediated in serial by perceived expensiveness, and in turn, the pain of payment. The conceptual model of the hypothesised process is depicted in Figure 1. More formally, this research predicts,

H1: Buy-now-pay-later will increase spending behaviour compared to other payment modes.

H2: Less numerous buy-now-pay-later instalment prices (compared to more numerous prices) will lower perceived expensiveness, which in turn will lower the pain of payment, and ultimately increase spending behaviour.

Figure 1 - Conceptual Model for the Research



2.6 SUMMARY

The theoretical background of the research question was outlined in this chapter. The research question in Chapter 1 was developed to hypotheses grounded in the theory. Next, Chapter 3 presents the research design undertaken through three experiments to test the hypothesised explanation for why buy-now-pay-later increases spending behaviour.

Chapter 3: Research Design

This chapter describes the design adopted by this research to address the research question stated in section 1.2 of Chapter 1. Section 3.1 justifies both the methodology used in the study and the research design. A high-level overview of the participants, procedures and measures (section 3.2) used in the research are outlined which are then detailed in Chapters 4 to 6 for each of the three respective experiments. Next, how the data was analysed (section 3.3) and the ethical considerations (section 3.4) of the research are discussed, and finally, an overview of the purpose of each experiment (section 3.5) in this research is provided.

3.1 METHODOLOGY AND RESEARCH DESIGN

3.1.1 Methodology

The research aims to address the research question "What are the underlying mechanisms that predict and explain the influence of the new buy-now-pay-later payment mode on consumer spending behaviour?". This research question seeks to establish a cause-effect relationship between buy-now-pay-later and spending behaviour. Moreover, the research question seeks to provide an explanation for the relationship between the payment mode and spending behaviour variables. Therefore, an appropriate research methodology to answer this research question needs to establish a relationship between these two variables and provide an explanation (i.e., cause) for the relationship.

A descriptive research approach is unable to determine the causal relationship between variables. Correlational research approaches involving transactional level data or archival economic data are not suited to answering the research question as they cannot establish the causal relationship between the decision-making process variables. Field experiments provide high external validity, however, would not allow for intervening decision-making variables to be measured, and also provide limited ability to control extraneous variables to isolate the causal variables (Falk & Heckman, 2009) in this research. Similarly, quasi-experimental and non-experimental approaches have high external validity but are unable to determine causality as they cannot exclude confounding variables, and hence are unable to explain the relationship

between variables (Gravetter & Forzano, 2012). Subsequently, other research methodologies are unable to adequately address the research question by establishing and explaining the causal relationship between the variables of spending behaviour and payment modes.

This research employs an experimental research methodology to address the research question. The experimental research methodology is able to provide an explanation for the relationship between variables (Gravetter & Forzano, 2012). The non-experimental methodologies are unable to explain the causal relationship between variables (Gravetter & Forzano, 2012), and therefore are not well suited to answering the research question. Therefore, the use of an experimental research methodology is justified in order to establish a causal relationship between buy-now-pay-later and spending behaviour, as well as an explanation for the relationship between these variables.

3.1.2 Research Design

In order to address the research question, this research tested the hypotheses developed in section 2.5 in a series of experiments using statistical inferences. Accordingly, this research required the manipulation of payment modes as the independent-variable within the confines of controlled experiments with measurement of the resultant spending behaviours the dependent-variable, as well as decision-making process variables (in study 2 and study 3). Each of these requirements is subsequently discussed.

The payment mode was manipulated between-subjects, with half of the subjects randomly assigned to a comparison payment mode to compare spending behaviour to those assigned to the buy-now-pay-later payment mode. Manipulation of the independent variable for a between-groups comparison establishes a true experimental condition (Campbell & Stanley, 1963). Participants were randomly assigned between conditions to allow the experiments to rule out individual differences as an alternative explanation (Khan, 2011). Those in the buy-now-pay-later condition were provided with a description of the buy-now-pay-later payment mode, as a pre-test indicated a lack of familiarity with buy-now-pay-later by the sample population. For additional validity as a study package, the payment mode comparison is operationalised differently for each of the three studies. Study 1 compared buy-now-pay-later to a

credit card, study 2 compared buy-now-pay-later to cash, and study 3 compared buy-now-pay-later with 4 payments to buy-now-pay-later with 8 payments.

A consistent procedure ensured that extraneous variables were controlled. Hence, each experiment provided participants with a vignette of a hypothetical spending scenario. Participants were provided experimental scenarios to respond to in a controlled setting in order to rule out alternative explanatory effects, which is a commonly used approach in consumer behaviour payment mode research (Shah et al., 2016). Inadvertent confounding of manipulations is minimised by maintaining 'ceteris paribus' constant conditions across groups (Perdue & Summers, 1986) in each experiment. The experimental study allows tight controls but may limit external validity by creating conditions which do not reflect reality (Falk & Heckman, 2009). This limitation is accepted in order to establish a cause-effect relationship as required to address the research question. This limitation is discussed further in section 7.4.

All variables were consumer perceived measures, collected directly from participants by survey following the presentation of the spending scenario. The spending decisions were collected from the participant, followed by decision-making process variables in study 2 and study 3. The dependent variables are measured first as recommended by Wetzel (1977), to ensure that demand characteristics are not introduced by subsequent measures, and that if the impact of the independent-variable is only temporary, the effect does not diminish prior to measurement (Perdue & Summers, 1986). The research operationalises the spending behaviour dependent-variable in multiple ways. Specifically, in study 1 as the amount spent, in study 2 as purchase intent and in study 3 as the choice of a more expensive item. Operationalisation of the dependent variable in multiple ways supports the broad applicability of the findings of this research (Shah et al., 2016). In addition, the key process measures (i.e., underlying mechanisms) of the pain of payment and the effect of numerosity (perceived expensiveness) are also operationalised in different ways between study 2 and study 3.

3.2 PARTICIPANTS, PROCEDURES AND MEASURES

Participants aged 18 years and above residing in the United States were recruited online. The online context provides a controlled setting which is a commonly used approach in consumer behaviour payment mode research (Shah et al., 2016). Consent

was obtained prior to commencing participation in the study. Participants completed the experiment online in Qualtrics and were provided with a small financial incentive for participating. Participants were provided with a general description of a purchase decision-making scenario, the assigned payment mode, and the item(s) for purchase. Participants then responded to a series of questions which collected participants' spending decisions as outcome variables, process measures directly after making a spending decision, and variables for alternative explanations. The measures were operationalised to be appropriate to the specific decision-making process of the scenario. Finally, demographic information was collected to describe the sample. Details of the participant sample, the specific procedures and justified measures for each of study 1, 2, and 3 are provided in the respective chapters 4, 5 and 6.

3.3 ANALYSES

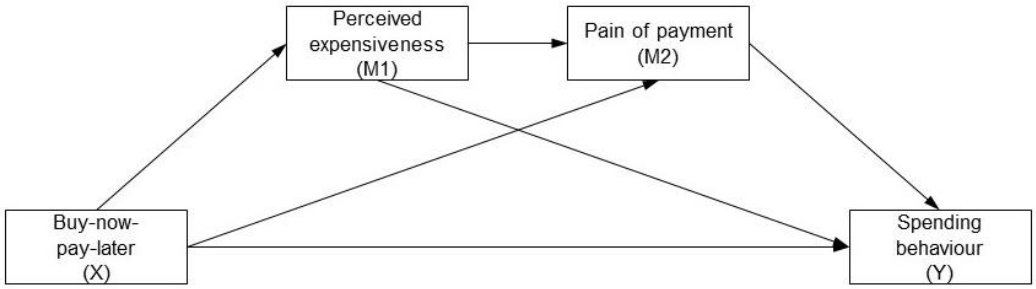
The research data was collected from participants recruited from the online panels of Prolific and Amazon Mechanical Turk. Data collected in Qualtrics was exported to SPSS for analysis. Data was statistically analysed using SPSS version 25.0.0.1. Results were analysed by study. Each study was analysed in stages. First, an investigation of whether the dependent outcome variable and, where applicable in studies 2 and 3, the process variables, provided evidence of the predicted effects of the experimental manipulation was conducted. Then, in studies 2 and 3, whether the processes of the pain of payment and numerosity mediated the experimental manipulation on spending behaviour was tested. Last, in studies 1 and 2, the effect of an alternative explanation was investigated.

Study 1 and study 2 measured the spending behaviour dependent variables as scale variables. Process variables for study 2 as well as the alternative explanatory variables in studies 1 and 2 were also measured using 7-point scale variables. Study 3 used a bipolar scale to reflect the relative choice presented. As different participants were assigned to each condition the mean of each group from independent observations was compared between conditions using a two-tailed independent samples t-test (Sawilowsky & Blair, 1992). Levene's Test for Homogeneity was conducted for each scale variable, with the degrees of freedom adjusted for subsequent t-test where Levene's test was significant at a 95% confidence level (Levene, 1960). Levene's test was only reported in chapters 4 to 6 where it was significant. Study 3 measured a categorical binary dependent-variable as the choice of either a more

expensive or less expensive item, with the payment mode independent-variable varying between conditions. Therefore, a binary logistic regression analysis of the choice was performed using a direct modelling approach, with the categorical choice as the independent-variable and the predictors specified as main effects (Peng & So, 2002) according to the theory-based propositions of this research. Specifically, the payment mode, the pain of payment, and the perceived expensiveness were specified as predictors. Significance of the model's parameter estimate for the categorical independent-variable regression coefficient was evaluated using the Wald test Chi-square test statistic (Peng & So, 2002).

The mediating variables for the numerosity effect and the pain of payment are hypothesised to explain the difference between spending behaviour due to the buy-now-pay-later payment mode. Therefore, this research used serial mediation analysis to test for the indirect effects of spending behaviour through the mediating variables of numerosity (as measured by perceived expensiveness in this research) and the pain of payment. To test for mediation, this research followed the recommended approach of Preacher, Rucker, and Hayes (2007) using Hayes (2018) PROCESS script version 3.4 to run a bias-corrected bootstrapping analysis of the serial mediation model. The bootstrap approach was adopted as it does not require unnecessary assumptions about the distribution of the sample data (Hayes, 2018) with generally more powerful tests for multiple mediation models than the normal theory approach, especially for smaller sample sizes (Williams & MacKinnon, 2008). Specifically, PROCESS Model 6 was used to test serial mediation (Hayes, 2018) as it matches the proposed analytical model (see Figure 2), with X as the payment mode independent-variable M1 as perceived expensiveness to operationalise numerosity, M2 as the pain of payment, and Y as the spending behaviour dependent-variable. Significance was assessed as a confidence interval that does not include the value of zero (Hayes, 2018).

Figure 2 - Analytical Model



3.4 ETHICS

Ethical considerations were incorporated into the design and procedures of this research. Ethical approval was provided by Macquarie University Human Research Ethics Committee (HREC) Business and Economics Subcommittee, a copy of the approval is contained in Appendix A. How the key issues of informed consent, withdrawal, risks of participation and privacy were considered to protect participants as part of the design of this research are each discussed in turn.

Informed consent was obtained from all participants prior to participation in the study. A copy of the Participation Information Consent Form (PICF) is contained in Appendix B. To enable informed consent, the PICF outlines the purpose of the research, the voluntary nature of participating in the research, the participant's right to withdraw from the study at any time without consequence, risks of potential harm, how privacy is protected, and provided contact details to withdraw, ask questions, or lodge a complaint about any concerns of the research, and the approval of the research by the Macquarie University HREC.

Participants were able to withdraw from the study during data collection by not completing the survey. Participants were also able to withdraw without penalty from the research project post-data collection by emailing the investigators. The participant's data are excluded from the study in these circumstances without any consequence to them. No participants have contacted the researcher to withdraw consent as at the submission of this thesis.

The risks of participation were minimised where possible. The experiment consisted of reading a hypothetical scenario and then answering a series of questions. Participation was voluntary and did not involve any discomfort or invasive procedures.

In addition, multiple mechanisms for withdrawal without consequence were provided throughout the process to minimise the risks of participation or any potential risks of participation.

The data collection did not require information related to the identity of the participants. Subsequently, participation was anonymous, with no personal details or identifying information collected as part of the research. The online panel which recruited the participant maintains contact details, makes payment to participants and anonymises survey respondents. These mechanisms minimise potential risk to participant privacy.

3.5 OVERVIEW OF THE OBJECTIVES OF EACH EXPERIMENT

This research comprises three studies to test how buy-now-pay-later influences consumer spending behaviour. The objective of the first study is to test the main effect of buy-now-pay-later compared to credit cards on increasing the total amount spent. The objective of the second study is to test the effects of buy-now-pay-later compared to cash on increasing purchase intent. The second study also examines the predicted explanation for the causal relationship between spending behaviour and buy-now-pay-later by testing the serial mediation effect of less numerous buy-now-pay-later instalment prices on spending behaviour by perceived expensiveness, and in turn, by the pain of payment, resulting in increased spending behaviour. The objective of the third study is to test the effect of buy-now-pay-later on the choice of more expensive products. The third study also assesses the role of buy-now-pay-later instalment prices to induce lower perceived expensiveness, which lowers the pain of payment and ultimately increases spending behaviour. This third study tests whether the pain of payment is influenced only by the perceived expensiveness of instalments and not due to underlying differences between payment modes. As such, the three studies test how buy-now-pay-later increases consumers' spending behaviour in terms of the amount spent, purchase intent and choice of more expensive products compared to other payment modes. Furthermore, these studies provide evidence supporting the underlying mechanisms of the numerosity of instalment payment prices and the pain of payment in influencing the relationship between buy-now-pay-later and spending behaviour. With the research design justified in this chapter, this research moves onto study 1.

Chapter 4: Study 1

This chapter describes the purpose, methods and results of study 1 to achieve the objectives stated in section 3.5. The chapter provides an overview of the purpose and hypotheses tested by the study (section 4.1), describes the participants, procedure, experimental manipulation and key measures (section 4.2), and then discusses the findings from the data analyses (section 4.3). The conclusion of the results of the study are discussed (section 4.4), and finally, the potential limitations (section 4.5) and how the main limitations will be addressed in study 2.

4.1 PURPOSE

Study 1 investigates the impact of buy-now-pay-later on spending behaviour compared to credit cards. Specifically, the main objective of study 1 is to test the main effect of buy-now-pay-later on increasing spending (H1). In addition to testing an increase in the amount spent, study 1 explores whether the source of increased spending is due to an increase in the number of items purchased, or the purchase of more expensive items (as measured by an increase in the average amount per item) compared to credit cards. As buy-now-pay-later presents purchases in instalment prices, which are predicted to lower the perceived expensiveness of the purchase, this study predicts that consumers increase their spending amount when using buy-now-pay-later compared to when using credit cards. To test the hypothesised effect, the payment mode (buy-now-pay-later vs. credit card) is manipulated between-subjects in the context of a purchase decision for food catering for an upcoming party.

4.2 METHOD

4.2.1 Participants

Sixty United States based participants (33 females, M_{age} = 39.2; SD = 12.8), recruited from the online panel Amazon Mechanic Turk, took part in the study.

4.2.2 Procedure and design

Participants were provided with a food purchase scenario describing ordering food for a birthday party. The scenario included a reason for the party (birthday), a selection of items for purchase (food menu items), prices (per item), a reason for

making a purchase today (the venue is free), and a guide of how many items to purchase (3-4 for a snack and 6-7 for a feast). Participants were then randomly assigned to one of the two payment mode conditions (buy-now-pay-later vs. credit card), presented with a menu of food, and then asked to select the menu items they wanted to order for their guests, and finally asked basic demographic information. The detailed scenario was as follows,

> You are organizing a birthday party with food and drinks for 12 friends this Saturday night. You want to celebrate and have a good time with your friends. You have booked a space at a nice local bar. The venue is free if food is pre-ordered and drinks are purchased on the night. You will pay for the food and your friends will pay for their drinks. You are going to be at the bar for at least a few hours during dinner time, so you want to make sure your friends have enough to eat. There is no on-site catering, so all food must be pre-ordered. Looking at the menu it says, *These small plate size eats are beautifully presented and perfect for a casual happy hour or a nice formal event! You can order as many or as few items as you like, but we find 3-4 provides a snack, and 6-7 is a feast.*

4.2.3 Experimental manipulation

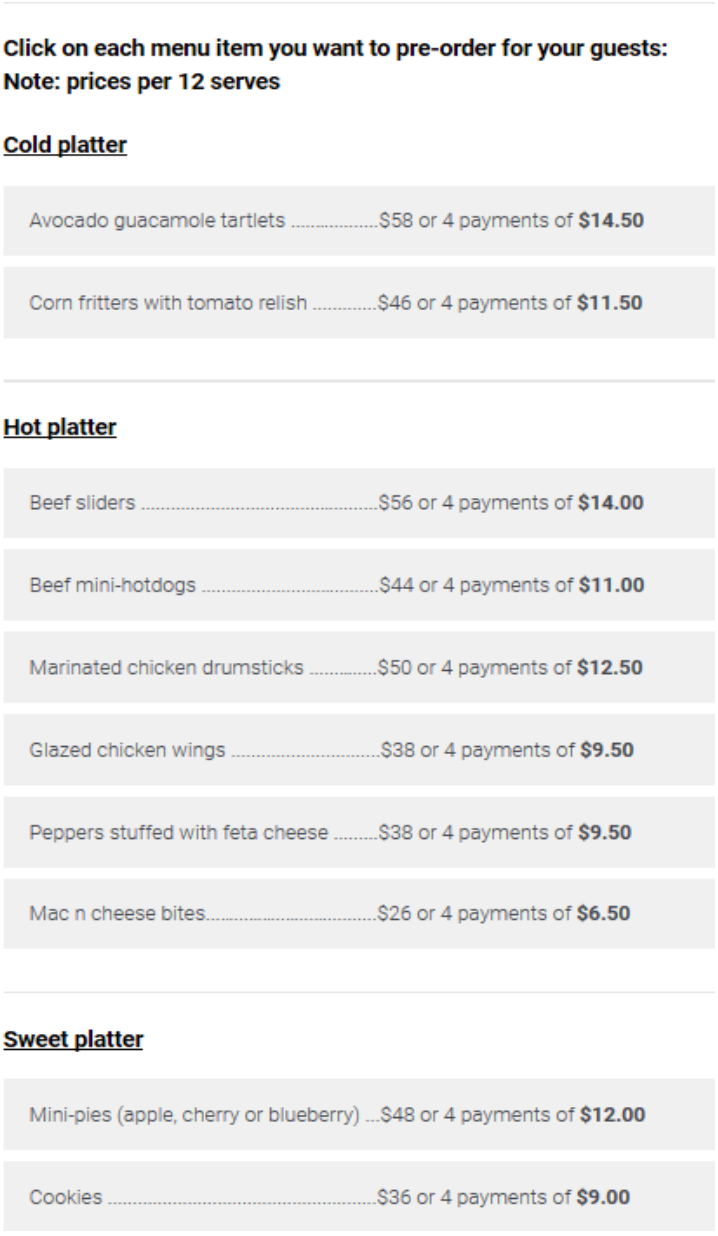
The payment mode was manipulated between-subjects as either buy-now-pay-later or credit card, with participants randomly assigned to either condition. Participants in the credit card condition read that "You notice that they accept credit card. As you confirm some details about the party, the caterer explains their service to you. After understanding their service, you decide to place your order and pay by credit card on the day." In the buy-now-pay-later condition, participants were provided with a brief description of buy-now-pay-later as the payment mode and terminology is not in common usage in the United States. The similar explanation to the credit card condition with the brief payment mode explanation was as follows,

> You notice that they have a new third-party payment service called 'buy-now-pay-later'. As you confirm some details about the party, the caterer explains: *With 'buy-now-pay-later' you pay for your purchase with 4 equal payments. The first payment is due at purchase, then every 2 weeks. Payments are automatically deducted from your bank account. For example, when you spend $100, you pay $25 today, and $25 every 2 weeks for 3 more payments. There is no interest, ever, and no fees when payments are made on time. If you*

do not have money in your bank account when a payment is due there is a once-off $10 late fee. You receive your food before paying for all of the purchase. After understanding their service, you decide to place your order and pay by this new 'buy-now-pay-later' payment service on the day.

To reinforce the manipulation of the buy-now-pay-later payment mode, the prices for each item in the menu were presented in both the total price as well as the instalment price. Participants in the credit card condition were presented only with the total price. Figure 3 shows the menu presented in the buy-now-pay-later condition. The full study is presented in Appendix C and Appendix D for the buy-now-pay-later and credit card condition respectively. The credit card menu presented the same items and total prices, but without the instalment payment to the right of each menu item (e.g., excluding “or 4 payments of $14.50” for the first menu item, and so on for each menu item).

Figure 3 - Menu for the Buy-now-pay-later Condition



4.2.4 Measures

Increased spending behaviour was measured by the sum of the prices of the items chosen. A change in the amount spent could be driven by either buying more items or purchasing more expensive items (i.e., spending more per item). Thus, the study further explores the measure of the amount spent by analysing two additional measures of spending behaviour. Thus, three measures of spending behaviour were analysed. Firstly, whether participants spent more money (as measured by the amount spent),

and then, whether the increased spending was driven by either purchasing more items or purchasing more expensive items, or both.

Amount spent. Amount spent was calculated as the sum of the item prices ordered by each participant. Participants were asked to "Click on each menu item you want to pre-order for your guests" to select as many or as few of the 10 items they wished to order.

Number of items purchased. The number of items was measured by the number of items purchased. The number of items purchased for each participant was calculated as the count of the number of items ordered from the menu.

Purchase of more expensive items. Buying more expensive items was measured by the average price per item. The average price per item was calculated for each participant as the amount spent divided by the number of items purchased.

4.2.5 Alternative explanation

This study tests for the alternative explanation of price novelty for the results hypothesised other than the pain of payment and the numerosity effect. When buy-now-pay-later purchases are presented in instalment payment prices, the instalment payment may be perceived as a novel form of price. A novel price engages a deeper level of information processing of the price presented, which influences price perception and increases spending behaviour (Kim & Kramer, 2006). Instalment payments may increase the information processing of the price and result in increased spending. Hence, the novelty of price may explain the main effect predicted. Therefore, the novelty of price was measured to rule out this alternative explanation. Participants were asked, "How novel is the way the price was shown?" on a 7-point scale where 1 = "Not novel" and 7 = "Novel" (Kim & Kramer, 2006). Thus, the novelty of price was measured as a potential alternative explanation of the predicted increase in spending behaviour.

4.3 RESULTS

Results were analysed in two stages. First, an investigation of whether the dependent outcome variables provided evidence of the predicted effects of the experimental manipulation was conducted. Second, the effect of an alternative explanation was investigated.

4.3.1 Main effects

Amount spent. The buy-now-pay-later payment mode significantly influenced the amount spent. As hypothesised, participants assigned to the buy-now-pay-later payment mode spent more than those assigned to the credit card condition (M_{BNPL} = \$188.58, *SD* = 64.37 vs. $M_{CreditCard}$ = \$157.79, *SD* = 53.92; *t*(58) = 2.00, *p* = .050, Cohen's *d* = 4.00). This supports H1, that buy-now-pay-later (vs. credit card) increases amount spent.

Number of items purchased. The buy-now-pay-later payment mode resulted in a significant increase in the number of items purchased compared to the credit card condition. As hypothesised, participants assigned to the buy-now-pay-later payment mode purchased more items on average than those assigned to the credit card condition (M_{BNPL} = 4.65, SD = 1.62 vs. $M_{CreditCard}$ = 3.83, SD = 1.39; *t*(58) = 2.09, p = .041, Cohen's d = 0.67).

Purchase of more expensive items. Purchase of more expensive items did not vary as a function of payment modes (M_{BNPL} = \$39.49, *SD* = 8.03 vs. $M_{CreditCard}$ = \$40.26, *SD* = 8.64; *t*(58) = -0.36, *p* = .72, Cohen's *d* = -0.27). This indicates that the increase in spending with buy-now-pay-later (vs. credit card) was not due to the purchase of more expensive products, but rather due to an increase in the number of items purchased.

4.3.2 Alternative Explanation

Next, the alternative explanation of price novelty was examined for differences between the buy-now-pay-later and credit card payment modes. There was no significant difference between the buy-now-pay-later and credit card conditions for the novelty of price, as confirmed by an independent samples t-test (M_{BNPL}= 4.52, *SD* = 1.48 vs. $M_{CreditCard}$ = 3.86, *SD* = 1.92; *t*(58) = 0.93, *p* = .14, Cohen's *d* = 0.51). Therefore, the study does not find that the amount spent between conditions is due to the novelty of price presented to participants.

4.4 DISCUSSION

Study 1 finds that the use of buy-now-pay-later increased spending behaviour, specifically the amount spent and the number of items purchased compared to credit cards. This study finds that when using buy-now-pay-later as the payment mode, participants indicated they would purchase more items and increase the amount they

spend compared to when paying with credit cards. Therefore, study 1 supports the hypothesised effects of buy-now-pay-later on spending behaviour versus credit cards, in the context of purchasing multiple food items from a menu.

The study did not find that buy-now-pay-later led to the purchase of more expensive items. This may be due to factors specific to the research design. The study employed a multi-choice design (vs. pairwise choice of a single option) to make the quantity decisions more salient. Thus, participants focus more on increasing the number of items chosen, rather than shifting their choices to more expensive items. Hence, participants spent more by selecting more items, rather than choosing more expensive items in this study.

4.5 LIMITATIONS

Although the results of study 1 support the hypothesised effect of buy-now-pay-later on spending behaviour, potential limitations of study 1 are acknowledged. As a study in isolation, the results of study 1 are limited to a single context and a comparison to a single payment mode. Furthermore, the study does not measure process variables as empirical evidence of the underlying processes behind the effects of buy-now-pay-later.

Study 2 tests the effect of buy-now-pay-later in a different context and against a different payment mode to test if the effect is observed in other contexts and against other payment modes. Furthermore, study 2 measures the intermediate process variables to provide direct evidence of the underlying processes involved in the decision making that results in the observed increased spending behaviour with buy-now-pay-later. Thus, having confirmed the main effects of buy-now-pay-later compared to credit cards on increasing the amount spent and the number of items purchased, this research moves on to further explore the causes for these effects in study 2.

Chapter 5: Study 2

This chapter describes the purpose, methods and results of study 2 to achieve the objectives stated in section 3.5. The chapter provides an overview of the purpose and hypotheses tested by the study (section 5.1), describes the participants, procedure, experimental manipulation and key measures (section 5.2), and then presents the findings from the data analyses (section 5.3). The conclusion of the results of the study are discussed (section 5.4), and finally, the potential limitations (section 5.5), and how the main limitations will be addressed in study 3.

5.1 PURPOSE

Study 2 investigates the impact of buy-now-pay-later on spending behaviour compared to cash. Specifically, study 2 tests the main effect of buy-now-pay-later on increasing purchase intent compared to cash (H1). This study tests this prediction using a purchase decision for a filling at a dental clinic. The payment mode (buy-now-pay-later vs. cash) is manipulated between-subjects to present a less numerous price using instalment payments in the buy-now-pay-later condition. This study also tests the underlying processes that predict and explain the differences in purchase intent between the buy-now-pay-later and cash payment modes. Findings from the literature on the numerosity effect (Pelham, Sumarta, & Myaskovsky, 1994; Van Den Bergh & Lembregts, 2018; Wertenbroch, Soman, & Chattopadhyay, 2007) posit that individuals are more sensitive to numbers than units when assessing quantity (i.e., $1,000,000 appears more than $1m, even though they are the same quantity of money). Applied to buy-now-pay-later, this research claims that the numerosity effect implies that the same quantity of money presented as a number of instalment payments will appear to be less than the total price. Hence, instalment payments will make the same price appear lower (i.e., 4 payments of $25 will appear to be less than the total price of $100). As a result of the numerosity effect, individuals focus more on the instalment payment price (vs. the total price) and perceive the same purchase in instalment payments as less expensive than the total price. Therefore, it is predicted that the instalment prices of buy-now-pay-later, as less numerous units of price, will be perceived as less expensive than the total price of cash. This research reasons that

lower perceived expensiveness will lower the pain of payment, which in turn will lead to increased purchase intent. Therefore, the effect of buy-now-pay-later (vs. cash) on purchase intent is predicted to be mediated in serial by perceived expensiveness, and in turn the pain of payment (H2). This study thus tests the influence of the numerosity effect as measured by perceived expensiveness and, in turn, the effect of perceived expensiveness on the pain of payment to ultimately increase purchase intent.

5.2 METHOD

5.2.1 Participants

One hundred and two United States based participants, recruited from the online panel Prolific, took part in the study. After removing two participants that did not complete the study, a sample of 100 participants (46 females, M_{age} = 30.3; *SD* = 8.9) were included in the analyses.

5.2.2 Procedure and design

Participants were provided with a health services scenario about going to a dentist in order to make a purchase decision. The description includes a reason for the visit (toothache), an item for purchase (filling), price ($180), and support that the price is reasonable from a third-party (typical cost from an industry association). Participants were then asked if they intend to make the purchase today. The detailed scenario is as follows,

> Imagine that on Monday morning you go to the dentist as you have had a toothache over the weekend. The dentist finds that you need a filling, and advises that it will likely cause further pain if it is not taken care of in the next few weeks. Your dentist confirms that they can do it now as part of your appointment, which will cost $180. The dentist also provides you a card from the American Dental Association (ADA) that outlines the typical cost of a range of dental services; you notice that the national average cost for a filling is between $171 and $197.

5.2.3 Experimental manipulation

The payment mode was manipulated between-subjects as either buy-now-pay-later or cash. Participants were randomly assigned to one of the two conditions, with a plausible reason for using a particular payment mode given, dependent on the condition. In the cash condition participants read that “As this was an unexpected

purchase you do not have your cards with you. You will use cash if you make this purchase". In the buy-now-pay-later condition, participants read that "As this was an unexpected purchase you do not have your cash or cards with you. Luckily, the dentist offers a new third-party payment service, called 'buy-now-pay-later'". In addition, the following brief description of the payment mode was given in the buy-now-pay-later condition as this payment mode and terminology is not in common usage in the United States,

> With 'buy-now-pay-later' you pay for your purchase with 4 equal payments. The first payment is due at purchase, then every 2 weeks. Payments are automatically deducted from your bank account. For example, when you spend $180, you pay $45 today, and $45 every 2 weeks for 3 more payments. There is no interest, and no fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once off $6 late fee. You receive your service today before paying for all of the purchase.

To reinforce the manipulation of the buy-now-pay-later payment mode, participants in the buy-now-pay-later condition were presented with both the total price as well as the instalment price in the payment mode description and participants in the cash condition were presented only with the total price. The full study is presented in Appendix E and Appendix F for the buy-now-pay-later and cash condition respectively.

5.2.4 Measures

Purchase intent. The outcome variable of purchase intent was measured on a 7-point semantic differential scale by asking participants "Do you intend to make this purchase today?", where 1 = "definitely will not purchase" and 7 = "definitely will purchase" (Raghubir & Srivastava, 2002).

Numerosity. Perceived expensiveness measures the numerosity effect as the first process variable in this study. Perceived expensiveness was measured by asking participants "How expensive do you think the purchase is?", on a 7-point semantic differential scale ranging from 1 = "very inexpensive" to 7 = "very expensive", which is adapted from Slonim and Garbarino (1999).

Pain of payment. The pain of payment was measured as the second process variable. The pain of payment is measured by asking "How painful would it be to pay

for the purchase?" on a 7-point Likert scale, where 1 = "not at all painful" and 7 = "very painful" (Rick, Cryder, & Loewenstein, 2008).

5.2.5 Alternative explanation

This study tested again for the alternative explanation of price novelty to rule out this alternative explanation. Using the same measure as study 1, participants were asked, "How novel is the way the price was shown?" on a 7-point scale where 1 = "Not novel" and 7 = "Novel" (Kim & Kramer, 2006). Thus, the novelty of price was measured as a potential alternative explanation of the predicted increase in purchase intent when the price was expressed as instalment payments (a less numerous price) vs. the total price (a more numerous price).

5.3 RESULTS

Results were analysed in three stages. First, an investigation of whether the dependent outcome variable and process variables provided evidence of the predicted effects of the experimental manipulation was conducted. Second, whether the processes of numerosity and the pain of payment mediated the experimental manipulation on spending behaviour was tested. Third, the effect of an alternative explanation was investigated.

5.3.1 Dependent variable and process variables

Purchase intent. The buy-now-pay-later payment mode significantly influenced purchase intent. As hypothesised, participants assigned to the buy-now-pay-later payment mode indicated higher purchase intent than those assigned to the cash condition (M_{BNPL} = 5.55, SD = 1.60 vs. M_{Cash} = 4.80, SD = 1.83; $t(98) = 2.19$, $p = .031$, Cohen's d = 0.57). This supports H1, that buy-now-pay-later (vs. cash) increases purchase intent.

Numerosity. Perceived expensiveness was significantly different between the buy-now-pay-later and cash conditions. As hypothesised, participants assigned to the buy-now-pay-later payment mode indicated a lower perceived expensiveness than those assigned to the cash condition (M_{BNPL} = 3.92, SD = 1.61 vs. M_{Cash} = 4.71, SD =

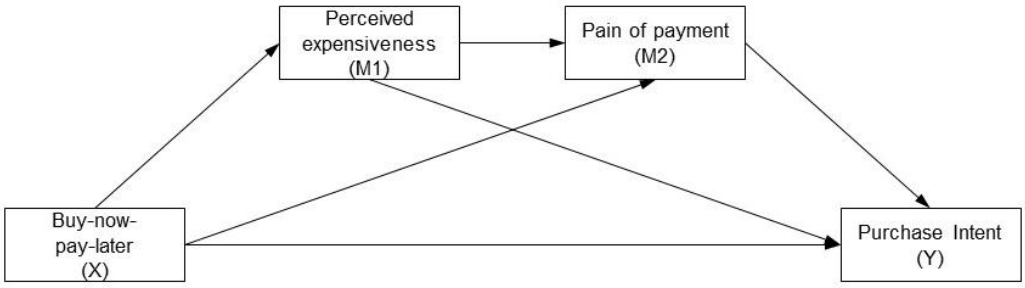
1.08; $t(87)$[3] = -2.90, p = .005, Cohen's d = -0.68). This supports that buy-now-pay-later (vs. cash) lowers perceived expensiveness.

Pain of payment. The pain of payment was significantly different between the buy-now-pay-later and cash conditions. As hypothesised, participants assigned to the buy-now-pay-later payment mode indicated a lower pain of payment than those assigned to the cash condition (M_{BNPL} = 2.76, SD = 1.63 vs. M_{Cash} = 4.43, SD = 1.61; $t(98)$ = -5.14, p < .001, Cohen's d = -1.31). This supports that buy-now-pay-later (vs. cash) lowers pain of payment.

5.3.2 Mediation analysis

It was predicted that the price of a purchase (i.e., the filling at the dentist) presented in less numerous instalment payments with buy-now-pay-later is perceived as less expensive, and hence less painful to pay for, resulting in higher purchase intent than a purchase using cash. In the serial mediation model, the independent variable (*X*) was the payment mode, the first mediating variable (*M1*) was perceived expensiveness, the second mediating variable (*M2*) was the pain of payment, and the dependent variable (*Y*) was purchase intent. Figure 4 presents the serial mediation model. A test using PROCESS Model 6 (Hayes, 2018) for the predicted serial mediation model was conducted at a confidence interval at 90% with the number of bootstrapping samples of 50,000 to accommodate the small sample size.

Figure 4 – Serial Mediation Model for Study 2



[3] Levene's Test of Equality (F = 8.41, p = .005) was significant, which indicated that the assumption of homogeneity of variance was violated by unequal variances between the two conditions, so degrees of freedom were adjusted from 98 to 87 as per the recommendation of Levene (1960) and Gastwirth, Gel, and Miao (2009).

The mediation analysis revealed a marginally significant serial mediation. The serial mediation by the buy-now-pay-later payment mode on purchase intent by perceived expensiveness and pain of payment was marginally significant as the confidence interval does not include the value of zero (b = .02, SE = .02, 90% CI = 0.002 to 0.067). This suggests that buy-now-pay-later (i.e., less numerous prices) reduced the perceived expensiveness, which in turn reduced the pain of payment, leading to increased purchase intent. The direct effect of the payment mode on purchase intent was not significant (b = .18, SE = .13, t(98) = 1.41, p = .16), indicating that the payment mode fully mediated the effect on purchase intent. The results of the mediation analyses are summarised in Table 1. These results indicate that by presenting less numerous instalment prices, buy-now-pay-later lowers the perceived expensiveness, elicits less pain of payment due to the instalment price, and subsequently increases purchase intent. Thus, the mediation analysis supports the conceptual model and serial mediation chain predicted by H2, the effect of buy-now-pay-later on purchase intent is mediated by perceived expensiveness, and in turn by the pain of payment.

Table 1 - Serial Mediation Results for Study 2

Path	β	SE	(LCI, UCI)
PM → PI	.18	.13	(-.03, .39)
PM → PE	-.26	.09	(-.42, -.11)
PE → PP	.43	.11	(.24, .61)
PP → PI	-.22	.11	(-.47, -.03)
PM → PP	-.44	.11	(-.62, -.27)
PE → PI	.19	.13	(-.03, .41)
PM → PE → PI	-.05	.05	(-.15, .02)
PM → PP → PI	.10	.06	(.00, .21)
PM → PE → PP → PI	.02	.02	(.00, .07)

Note: LCI = Lower Confidence Interval; UCI = Upper Confidence Interval; PM = Payment Mode; PI = Purchase Intent; PE = Perceived Expensiveness; PP = Pain of Payment

5.3.3 Alternative Explanation

Next, the alternative explanation of price novelty was examined for differences between the buy-now-pay-later and cash payment mode conditions. There was no significant difference between the buy-now-pay-later and cash conditions for the novelty of price, as confirmed by an independent samples t-test (M_{BNPL}= 4.24, *SD* = 1.54 vs. M_{Cash} = 3.96, *SD* = 1.41; *t*(98) = 0.93, *p* = .35, Cohen's *d* = 0.23). Therefore, the study does not find that the difference in purchase intent between conditions is due to the novelty of price presented to participants. Together with the findings in study 1, price novelty can be ruled out as an alternative process explanation for the effects of buy-now-pay-later.

5.4 DISCUSSION

Study 2 finds that the use of buy-now-pay-later increased spending behaviour, specifically purchase intent, compared to cash. This supports H1. Participants in the buy-now-pay-later condition had significantly lower perceived expensiveness and significantly lower pain of payment than those in the cash condition. This study finds that when paying with buy-now-pay-later, participants indicated an increased purchase intent, lower perceived expensiveness and lower pain of payment compared to when paying with cash. A serial mediation analysis demonstrated that the effect of the payment mode on purchase intent was mediated by perceived expensiveness, which led to lower pain of payment and resulted in higher purchase intent. This supports H2. Therefore, study 2 supports the conceptual framework; the pain of payment and perceived expensiveness of less numerous instalment prices mediate the effect of payment mode on purchase intent of a filling at a dental clinic.

5.5 LIMITATIONS

Although the results of study 2 offer promising support of the conceptual model hypothesised, several potential limitations of study 2 are acknowledged. This section also considers if demand effects could have potentially been created by either the scenario or the description of buy-now-pay-later, as well as if the difference in deferred payment between cash and buy-now-pay-later could have explained the results in terms of temporal discounting. These potential limitations are addressed in the design of study 3.

A potential limitation is that the scenario in study 2 could be considered to have created demand effects in two ways. First, describing the operations of the buy-now-pay-later payment mode (but not cash) may have induced participants to think more deeply about the payment mode and thus enhanced the perceived benefits of the assigned payment mode only for those participants in the buy-now-pay-later payment mode condition. Study 3 will address this potential limitation by using a description of buy-now-pay-later in both conditions. Second, the payment mode participants were allocated to was presented as a solution to a problem of not having any cash or cards available for buy-now-pay-later as opposed to only not having cards available for cash. Although the halo effect of presenting a payment mode as a solution is unlikely to be the cause of the differences between conditions, replicating these results when the randomly allocated payment mode is presented as the consumer's positive choice rather than a necessity of not having any other payment mode available enhances the robustness of these findings.

Although this research reasons that the cause for lower perceived expensiveness of buy-now-pay-later (vs. cash) was the numerosity of instalment prices, it is also possible that the difference in perceived expensiveness was not only due to the numerosity of instalment prices. This decreased perceived expensiveness could have been due to another difference between the buy-now-pay-later and cash payment modes in this study. Relative differences between buy-now-pay-later and cash which influence payment timing could be explained by deferred payments. For instance, temporal discounting infers that payment deferred to a later time is financially less than payment today due to the inflationary effects of the time-value of money (Thaler, 1981), and therefore this payment deferral could lead to the purchase being perceived as less expensive.

To account for any specific payment mode effects, such as the potential effect of differences in temporal discounting, study 3 focuses on only the buy-now-pay-later payment mode and tests the effect of buy-now-pay-later with 4 instalment payments against buy-now-pay-later with 8 instalment payments. By keeping the payment duration constant and changing only the instalment prices, it is possible to rule out any effect of differences between payment modes, such as temporal discounting, and provide direct process evidence for the numerosity effect of instalment prices.

Thus, having confirmed the main effects of buy-now-pay-later compared to cash on purchase intent, perceived expensiveness and the pain of payment, this research moves on to study 3. Study 3 builds on the findings of study 2 whilst seeking to address potential limitations of the findings from study 2.

Chapter 6: Study 3

This chapter describes the purpose, methods and results of study 3 to achieve the objectives stated in section 3.5. The chapter provides an overview of the purpose and hypotheses tested by the study (section 6.1), describes the participants, procedure, experimental manipulation and key measures (section 6.2), and then discusses the findings from the data analyses (section 6.3). Finally, the conclusions of the results of the study (section 6.4) are discussed.

6.1 PURPOSE

The purpose of study 3 is two-fold. First, the study tests the effects of instalment payment prices on consumer spending behaviour in the context of product choice. Second, study 3 tests the mediating effect of numerosity due to instalment payment prices on spending behaviour. The numerosity of price is manipulated by modifying the number of instalment payments (4 vs. 8) between-subjects whilst keeping the payment mode constant as buy-now-pay-later. The design allows differences between payment modes, such as payment timing or payment transparency, to be ruled out as an alternative explanation for the effect on spending behaviour. Extending the numerosity effect (Lembregts & Van Den Bergh, 2018; Pandelaere et al., 2011; Pelham et al., 1994; Wertenbroch et al., 2007) to instalment payments, people will perceive prices expressed in 8 instalment payments to be lower and therefore less expensive than prices expressed in 4 instalment payments. As a result, it is predicted that people will perceive the difference in prices between two choices as smaller when expressed in 8 payments (vs. 4 payments). In turn, the lower perceived expensiveness is predicted to make payments feel less painful. This lower pain of payment leads to an increase in the proportion of individuals that choose a more expensive item. Therefore, the effect of less numerous instalment prices on the choice of a more expensive item is predicted to be mediated in serial by perceived expensiveness, and in turn the pain of payment (H2). This study tests this prediction using a relative choice between a cheap and an expensive hotel room.

6.2 METHOD

6.2.1 Participants

Three hundred and four United States based participants, recruited from the online panel Prolific, took part in the study. Three participants that did not complete the study were excluded from further analyses. Thus, a sample of 301 participants (159 females, M_{age} = 34.3; *SD* = 12.5) were included in the analyses.

6.2.2 Procedure and design

Participants were provided with a scenario about choosing between two hotel rooms for a short-stay holiday. Participants were then informed of a new buy-now-pay-later payment mode and that they intended to use this payment mode. The choice of hotel rooms was then presented with a list of several attributes including prices presented in instalment payments. After reading the scenario, respondents first indicated the room of their choice through a binary choice item and then completed measures of process variables, alternative explanatory variables, and finally demographics. The scenario presented was as follows,

> Imagine you are shopping for a holiday at a travel agent you have used before. You have decided on your preferred destination & hotel for a 3-night long weekend package. You have budgeted for this purchase, so the prices are reasonable. You plan to take your holiday next weekend and want to book today to ensure they do not book out.
>
> At the travel agent you notice that they have a new third-party payment service called 'buy-now-pay-later'. As you ask for some information, your travel agent explains:
>
> **[buy-now-pay-later payment mode description]**
>
> *After you understand the terms and conditions, you decide to use this new payment method.*

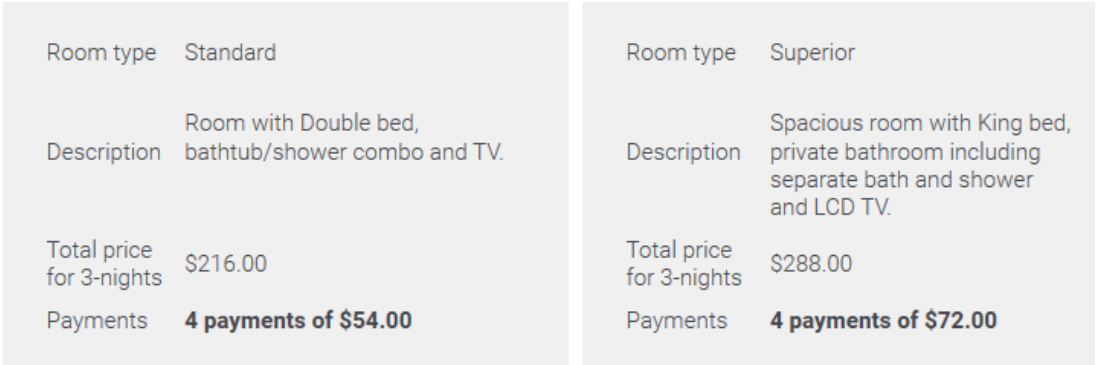
To help consumers understand instalment payments of buy-now-pay-later, a brief description of the buy-now-pay-later payment mode was given. The payment mode description was altered only to be consistent with the different number of payments between conditions. The description, with modifications between conditions, represented respectively as 4 payments [8 payments], was as follows,

> "With buy-now-pay-later you pay for your purchase with 4 [8] equal payments. The first payment is due at purchase, then every two weeks [every

week]. Payments are automatically deducted from your bank account. For example, when you spend $160, you pay $40 [$20] today, and then $40 [$20] every two weeks [every week] for 3 [7] more payments. There are no interest or fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once-off $10 late fee."

Participants were then presented with a table of each hotel room's attributes side-by-side and asked which hotel room they would choose for a 3-night stay. The attributes presented in columns, in order from top to bottom, were the room type, description, total price, and instalment payment price. The number of instalment payments (manipulated between-subjects) and the instalment payment price were in bold. Figure 5 displays how the room attributes were presented in the more numerous price condition and the following experiment manipulation section describes the differences in the less numerous price condition. The full study is presented in Appendix G and Appendix H for the more numerous 4 payment and less numerous 8 payment condition respectively. To rule out a potential order effect, the order of rooms were randomised between participants so that half saw the cheaper room first and half saw the more expensive room first.

Figure 5 - Hotel Room Attributes in the More Numerous Price Condition



6.2.3 Experimental manipulation

The instalment payment prices presented were manipulated between-subjects to be either more numerous or less numerous. The total price and the duration of payments were held constant, therefore increasing the frequency of payments, and hence altering the number of payments. Participants were randomly assigned to either

4 payments (more numerous price condition) or 8 payments (less numerous price condition). Participants in the more numerous instalment payment price condition were presented with the payments attribute for the cheap and expensive room as 4 payments of $54.00 and 4 payments of $72.00 respectively. Participants in the less numerous instalment payment price condition were presented with the payments attribute for the cheap and expensive rooms as 8 payments of $27.00 and 8 payments of $36.00. The price attributes avoided fractional numbers to aid ease of processing for both the total prices and instalment payment prices. The price of the more expensive room was 33.3% greater than the cheaper room, such that the difference should be noticeable and non-trivial. All other room attributes presented were held constant across conditions, thus manipulating only the numerosity of the instalment payment prices.

6.2.4 Measures

Room choice. After presenting the choice of a cheap or expensive hotel room, room choice was measured as the dependent variable. Participants were first asked to select either room with the question 'Which hotel room would you choose for your 3-night stay?". Participants selected a room using a radio button immediately below the room attributes of the cheap room (labelled Standard) or expensive room (labelled Superior). As the dependent variable is the outcome of a relative choice, the key process measures of numerosity and the pain of payment are relative measures to reflect this relative choice.

Numerosity. Numerosity was measured by perceived expensiveness as the first process variable. The relative perceived expensiveness between the standard and superior room was measured by asking participants to indicate "Which room is more expensive?". Responses were measured using a slider on a bipolar scale, where -5 = "Standard room is much more expensive", +5 = "Superior room is much more expensive", and 0 = "Neither". The slider was centred to minimise bias to either choice, and the numerical measure was not displayed so that the numerical information would not influence the measure of the perceived difference between the two choices.

Pain of payment. The pain of payment was measured as the second process variable. The relative pain of payment between the Standard and Superior room was measured by asking participants to indicate "Which room is more painful to pay for using buy-now-pay-later payment method?". Responses were measured using a slider

on a bipolar scale, where -5 = “Standard room is much more painful”, +5 “Superior room was much more painful”, and 0 = “Neither”. Again, the slider was centred to minimise bias to either choice and the numerical measure was not displayed.

6.3 RESULTS

Results were analysed in two stages. First, the predicted effects on the dependent outcome variable and process variables as a result of the experimental manipulation were tested. Second, whether the processes of numerosity and the pain of payment mediated the effect of the payment conditions on spending behaviour was analysed.

6.3.1 Dependent variable and process variables

Room choice. A less numerous instalment payment price significantly increased the number of participants that chose a more expensive hotel room. A binary logistic regression analysis with the instalment payment price condition (more numerous = 1; less numerous = 0) as the predictor and room choice (expensive room = 1; cheap room = 0) as the dependent variable revealed a significant main effect of the numerosity of instalment payment prices on room choice (b = -.55, SE = 0.23, Wald χ^2 (1) = 5.55, p = .02). As predicted, viewing less numerous instalment payment prices significantly increased the number of participants that chose a more expensive room (from 43% to 57%). This supports that less numerous prices (vs. more numerous instalment payment prices) increase the number of individuals that choose a more expensive item.

Numerosity. The relative perceived expensiveness was significantly different between the more numerous price condition and the less numerous price condition. As predicted, participants perceived that the expensive room was relatively less expensive in the less numerous condition than in the more numerous condition ($M_{less\ numerous}$ = 2.78, SD = 1.35 vs. $M_{more\ numerous}$ = 3.15, SD = 1.30; t(299) = 2.38, p = .018, Cohen’s d = -0.32). This supports that less numerous prices (vs. more numerous instalment payment prices) lower perceived expensiveness.

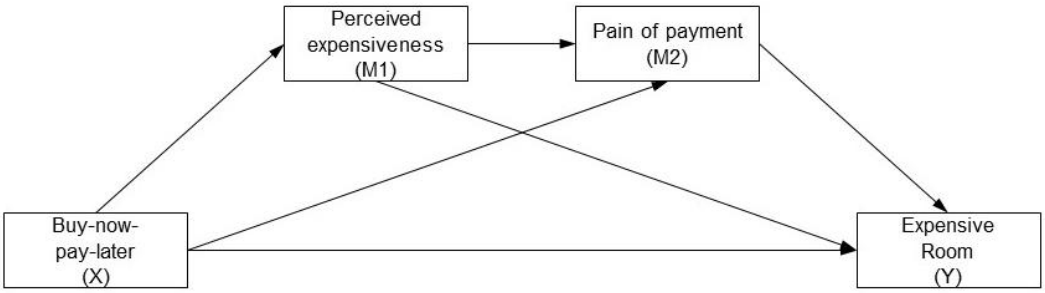
Pain of payment. The relative pain of payment was significantly different between the more numerous price condition and the less numerous price condition. As predicted, participants perceived that the pain of payment for the expensive room was relatively less in the less numerous price condition than the more numerous price condition ($M_{less\ numerous}$ = 1.22, SD = 1.97 vs. $M_{more\ numerous}$ = 1.79, SD = 1.94; t(299) =

2.53, p = .012, Cohen's d = -0.41). This supports that less numerous prices (vs. more numerous instalment payment prices) lower the pain of payment.

6.3.2 Mediation analysis

It was predicted that an expensive item (i.e., the expensive hotel room) is perceived as relatively less expensive, and hence, less painful to pay for and therefore more likely to be chosen when its price is less numerous than when its price is more numerous. In the serial mediation model, the independent variable (*X*) was the numerosity of buy-now-pay-later instalment payment prices, the first mediating variable (*M1*) was perceived expensiveness, the second mediating variable (*M2*) was the pain of payment, and the dependent variable (*Y*) was room choice. Figure 6 presents the serial mediation model. A test using PROCESS Model 6 (Hayes, 2018) for the predicted serial mediation model was conducted.

Figure 6 – Serial Mediation Model for Study 3



The mediation analysis revealed a significant serial mediation. The serial mediation of pain of payment by perceived expensiveness on room choice was significant as the confidence interval does not include the value of zero (b = .08, SE = .04, 95% CI = 0.01 to 0.19). This suggests that the less numerous prices reduced the perceived expensiveness, which in turn reduced the pain of payment, leading to more participants choosing an expensive room. The direct effect of the number of payments on room choice was not significant (b = .44, SE = .25, z(299) = 1.75, p = .08), indicating that the numerosity of instalment payment prices fully mediated the effect on choosing a more expensive room. The results of the mediation analyses are summarised in Table 2. Thus, the mediation analysis supports H2, the effect of the numerosity of instalment

payment prices on the choice of a more expensive room is mediated by perceived expensiveness through the pain of payment.

Table 2 - Serial Mediation Results for Study 3

Path	β	SE	(LCI, UCI)
BNPL → ER	.44	.25	(-.05, .94)
BNPL → PE	.36	.15	(.06, .66)
PE → PP	.43	.08	(.27, .59)
PP → ER	.50	.09	(.35, .67)
BNPL → PP	.41	.22	(-.02, .84)
PE → ER	-.22	.11	(-.44, -.01)
BNPL → PE → ER	-.08	.06	(-.22, .00)
BNPL → PP → ER	.21	.13	(-.01, .48)
BNPL → PE → PP → ER	.08	.04	(.01, .19)

Note: LCI = Lower Confidence Interval; UCI = Upper Confidence Interval; BNPL = Buy-now-pay-later; ER= Expensive Room; PE = Perceived Expensiveness; PP = Pain of Payment

6.4 DISCUSSION

Study 3 found a significant main effect of the numerosity of instalment payment prices on the choice of an expensive hotel room. As predicted, the less numerous prices increased the number of participants choosing a more expensive room. In addition, there was a significant main effect of instalment payment prices on both process variables for numerosity (as measured by perceived expensiveness) and the pain of payment. These effects indicate that less numerous instalment payment prices lower perceived expensiveness and the pain of payment compared to more numerous prices. A serial mediation analysis demonstrated that exposure to less numerous prices led to lower perceived expensiveness and elicited less pain of payment, thereby resulting in more individuals choosing the more expensive item. This supports H2. In combination with study 1 and study 2, this result suggests that differences in spending behaviour using buy-now-pay-later due to instalment prices are separate from any payment mode differences such as payment timing or payment transparency.

Chapter 7: Discussion and Conclusions

This chapter summarises the findings of the three experimental studies in this research (section 7.1). The chapter then discusses the theoretical (section 7.2) and managerial implications (section 7.3) of these findings. This chapter then follows with a discussion of the limitations which provide several directions for future research (section 7.4) and concludes with a brief coda (section 7.5).

7.1 SUMMARY OF FINDINGS

This research tested the proposition that buy-now-pay-later influences consumer spending behaviour. Specifically, this research hypothesised that buy-now-pay-later instalment prices induce lower perceived expensiveness, which lowers the pain of payment and ultimately increases spending behaviour. Across three experiments buy-now-pay-later was shown to increase consumer spending behaviour. This research finds that the underlying processes of numerosity and pain of payment lead to an increase in consumer spending behaviour with buy-now-pay-later.

Buy-now-pay-later increased spending behaviour compared to cash (study 2) and credit cards (study 1). Increased spending behaviour was evidenced by an increase in the number of items purchased (study 1), the amount spent (study 1), purchase intent (study 2), and the choice of a more expensive item (study 3). Therefore, H1 was supported, buy-now-pay-later increased spending behaviour compared to other payment modes. This effect on spending behaviour occurred across the different contexts of food services (study 1), health services (study 2) and accommodation (study 3), enhancing the generalisability of the finding.

The results of this research indicate that numerosity-induced lower perceived expensiveness and lower pain of payment explain the effect of buy-now-pay-later on spending behaviour. Expressing the same quantity in smaller numbers (i.e., smaller instalment payment prices) reduces the perceived quantity compared to expressing the same quantity in larger numbers (i.e., the total price). Buy-now-pay-later, compared to cash, lowered perceived expensiveness and the pain of payment. Furthermore, the less numerous prices of buy-now-pay-later, compared to more numerous prices, lowered both perceived expensiveness and the pain of payment. In addition, a serial mediation

effect was supported, such that less numerous buy-now-pay-later instalment prices were perceived as less expensive than more numerous prices, which in turn lowers the pain of payment and leads to an increase in spending behaviour. Therefore, the results support H2. This research confirms the hypotheses proposed from the conceptual model (as summarised in Table 3), that the underlying processes of numerosity and the pain of payment predict and explain the effects of buy-now-pay-later on spending behaviour.

Table 3 - Summary of Hypotheses Tested by Study

	H1	**H2**	**Spending behaviour variable**
Study 1	✓	n/a	Amount spent
Study 2	✓	✓	Purchase intent
Study 3	n/a	✓	Choice of a more expensive item

7.2 THEORETICAL IMPLICATIONS

This research contributes to theory in three main areas of marketing. First, this research contributes to the understanding of financial decision-making within the payment mode research stream by examining the effect of the new buy-now-pay-later payment mode on consumer spending. Second, this research extends the numerosity effect heuristic to the payment mode domain and shows that the numerosity effect explains the lowered price perception of instalment payments. This research also extends the finding that diminished discriminability results in reduced sensitivity to the difference in attributes from product benefits to product prices. Third, this research finds that the pain of payment is influenced by the perceptual magnitude of price, and not just the objective magnitude of payment. Each contribution is discussed in further detail below.

First, this research contributes to the understanding of financial decision-making within the payment mode research field. This research finds that the influence of buy-now-pay-later on spending behaviour is explained by the underlying mechanisms of two judgement and decision-making theories; numerosity applied to instalment pricing and the pain of payment associated with payment modes. This research thus reveals that perception due to the numerosity heuristic influences the emotional impact of the

pain of payment. In addition, by addressing the research problem, this research contributes three firsts to the payment mode field. One, this is the first research to examine the new buy-now-pay-later payment mode and its effect on consumer spending. Two, the research proffers a formal definition of a new buy-now-pay-later payment mode. Three, this is the first research to examine the numerosity effect of instalment payments.

Second, this research extends the numerosity effect research by applying the numerosity effect to instalment payments. Although numerosity research has investigated judgment within product attributes and across currencies, this research extends the numerosity literature to prices within the same currency, and is the first to demonstrate the numerosity effect of instalment pricing. This research conceptualises instalment payments as a purchase price subject to numerosity. This study indicates that the lower numerosity of instalment payments influences the perceived expensiveness of the purchase, consistent with an anchoring and adjustment process based on the face value of the instalment price. Consumers anchor on the face value of the less numerous instalment price, and insufficiently adjust from this anchor, resulting in a biased perception of the purchase price. In this way, instalments act as a new unit of price, in a similar way to how the face value of unfamiliar foreign currencies influence spending behaviour (Raghubir & Srivastava, 2002). This research thus contributes to the numerosity literature by demonstrating that numerosity applies to prices within the same currency, and that the decision-making process is biased by the numerosity of the instalment price.

Previous research has demonstrated diminished discriminability of product benefits due to numerosity (Burson et al., 2009). This research extends diminished discriminability to price due to numerosity by finding that less numerous prices decrease the perceived differences in price between alternative product choices, leading to increased spending behaviour. The reduced perceived expensiveness is evidence of a diminished difference between alternatives as a result of numerosity, consistent with the diminished discriminability account of Burson et al. (2009). It is reasoned that a lower perceived expensiveness due to instalment payments reflects a diminished discriminability in price consistent with the choice of more expensive products and an increase in spending when using buy-now-pay-later.

Third, this research also contributes to the literature on pain of payment by showing the perception of payment expensiveness can mitigate the pain of payment. Prior research indicates that the dollar amount (Zellermayer, 1996) or payment magnitude (Shah et al., 2016) influences the pain of payment. This research finds that the perception of instalment prices influences the pain of payment. This research thus extends this literature by indicating that it is not just the objective magnitude of the total payment price, but the perception of the price which determines the pain of payment. That is, the payment amount is subjectively perceived rather than an objectively quantitative, or unbiased price. Therefore, the subjectively reduced magnitude of price can also ease consumers' pain of payment.

The finding that lower pain of payment results from multiple segregated payments compared to a single payment appears contrary to that implied by prospect theory (Kahneman & Tversky, 1979) and mental accounting (Thaler, 1985). Decreasing sensitivity to the size of gains and losses inherent to prospect theory (Tversky & Kahneman, 1992) implies that segregated losses (i.e., multiple instalment payments) compared to a single loss (i.e., one total payment) should increase the sense of loss (Thaler, 1999) and therefore be more painful (Tversky & Kahneman, 1991), reducing spending behaviour (Prelec & Loewenstein, 1998). However, prospect theory is not applicable in this circumstance. Payments are not encoded as losses according to prospect theory, this assumption is clearly rejected in a subsequent paper by the original authors; "Payments made by consumers are also not evaluated as losses but as alternative purchases" (Kahneman & Tversky, 1984, p. 349). Therefore, prospect theory is not applicable to the perception of multiple payments as losses in this research.

7.3 MANAGERIAL IMPLICATIONS

Retailers. The effects of buy-now-pay-later on spending behaviour have important implications for retailers. Retailers that offer buy-now-pay-later can benefit from the influence of buy-now-pay-later on spending behaviour to both increase sales volume by selling more items, as well as selling more expensive items. The secondary implication of this research for retailers is arguably even greater. Given a 1% increase in sales volume on average increases operating profit by 3.3 times that amount (Marn & Rosiello, 1992), buy-now-pay-later can potentially substantially impact profitability from additional sales volume. Even though buy-now-pay-later providers have been

criticised for their high service cost to retailers (Andrew, 2019; Waters, 2018), the incremental profitability from either more consumers choosing a product with a 33% higher price (study 3), a 15.6% increased conversion rate as indicated by purchase intent (study 2), or a 19.5% increase in the amount spent (study 1) would benefit most retailers. Subsequently, retailers that offer buy-now-pay-later may increase sales volumes and operating profits.

Payment service providers. These findings have an important implication for payment service providers in the financial services industry. This research finds that more instalments increased spending behaviour. Specifically, 4 instalments increased spending behaviour compared to no instalments, and 8 instalments increased spending compared to 4 instalments. Payment services with more instalments had a greater effect on increasing spending. The practical implications for product managers are the advantages of designing payment services with more instalments to increase consumer spending to benefit both consumers and the payment service provider. In Australia, payment service providers may be constrained by regulatory restrictions on total payment duration without requiring additional due-diligence commensurate with credit products (ASIC, 2018c). Globally, product design is likely to move beyond these constraints. Future buy-now-pay-later products which provide instalment payments at checkout, such as Visa's trial to provide instalment payment options at checkout for purchases made with existing credit cards commencing January 2020 (Visa, 2019), are evidence of this direction.

Policymakers. Any phenomenon which increases spending behaviour raises questions for policymakers. This research suggests that increased spending behaviour from the use of buy-now-pay-later is not just due to the provision of increased credit to those otherwise credit-constrained speculated by some media sources (McDuling & Bateman, 2018; Smartcompany, 2019). Rather, buy-now-pay-later influences consumer's perception and affective reasoning processes that result in increased spending.

Regulation by policymakers commensurate with the risks and benefits that target potential adverse outcomes can achieve optimal policy outcomes (Rothstein, Borraz, & Huber, 2013). Consumers benefit using buy-now-pay-later as a convenient payment tool with potentially lower cost compared to consumer credit cards (Reserve Bank of Australia, 2019). In the event of financial difficulties, buy-now-pay-later issues

manifest more quickly than credit cards due to faster repayment times, and with smaller average arrangement amounts and lower limits, repayment issues are arguably less severe (see Appendix I for a comparison of buy-now-pay-later and credit cards market norms in Australia). However, specific risks exist, primarily from using multiple buy-now-pay-later arrangements simultaneously, especially across multiple providers, and the potential to provide arrangements to those with an inability to repay (ASIC, 2018c). These circumvent the lower risk of buy-now-pay-later compared to credit cards due to smaller arrangements amounts and lower limits. Credit cards and other credit products have more stringent upfront requirements for lenders to verify consumers' financial situation, such as their capacity to repay, and lenders commonly undertake credit checks to identify past misconduct (ASIC, 2018b). In contrast, 5 in 6 buy-now-pay-providers did not verify the creditworthiness of clients (ASIC, 2018c). A positive bureau check by buy-now-pay-later providers could ensure that consumers do not have multiple arrangements with other buy-now-pay-later providers. A lesser obligation to assess repayment capacity in line with the smaller limits and risks, with greater requirements for arrangements above a certain financial threshold, could help to ensure that consumers have the ability to repay amounts that could lead to overcommitment whilst still providing low-risk and low-cost services to benefit many consumers. A regulatory obligation in line with the lower comparative risks of smaller buy-now-pay-later arrangements allows consumers to benefit from generally lower cost payment services, whilst targeted action by providers and policymakers can manage higher-risk circumstances.

7.4 LIMITATIONS AND FUTURE RESEARCH

This research provides several important insights into consumer spending behaviour and the underlying decision-making processes using the new buy-now-pay-later payment mode. However, several limitations are acknowledged. First, this research conducted three studies as controlled online experiments. Although the findings of these three experiments are consistent with consumer reported outcomes, this research lacks some degree of external validity without real-world empirical evidence of these outcomes. A potential difficulty of such real-world transaction data mining is measuring process variables (i.e., intermediate latent variables) of the decision-making process. A post-purchase online survey as part of an extended checkout process could achieve this requirement. Further field research on transaction-

level data would add additional validity to these findings. Second, the survey used online participants that were generally unfamiliar with the buy-now-pay-later payment service. Participants are generally sceptical of unfamiliar payment modes and spend less when they are uncertain about the perceived security of the payment mode (See-To & Ngai, 2019). Thus, these findings could be considered conservative. A stronger spending effect is expected with consumers more familiar with the instalment payment mode. Further field research can supplement these online experiments to improve the external validity of the findings of this research.

Several moderators and boundary conditions are identified that could be explored in future research. This section discusses the future directions for further research into the moderating influence of salience, budget and pay cycles, unitosity, construal, individual differences between tightwads and spendthrifts, as well a consideration of the likely boundary conditions of the finding that number of payments increases spending in this research. This section then discusses how future research could also investigate other post-purchase consequences of buy-now-pay-later and instalment payment pricing, such as the potential impacts of these findings on reference prices, inferred quality, and brands.

Moderating role of instalment price salience. The experiments in this research explicitly presented instalment prices to be salient in the buy-now-pay-later conditions. In study 1 and study 3 the instalment payments were made more prominent by being presented in bold. This research did not test if the effects of numerosity held without the salient presentation of the instalment price. Consumers intending to purchase using buy-now-pay-later may mentally calculate instalment payments in the absence of the visual presentation of the specific instalment price. However, other research indicates that such translation is unlikely (Suri, Monroe, & Koc, 2013), with awareness, motivation and capability to translate all required to be present to translate between units (Pandelaere et al., 2011). Future research should explore price salience as a potential moderator to the effect of instalment payments.

Moderating role of budgets and pay cycles. Consumers use spending budgets as a reference point in evaluating their spending decisions. Budgets are inherently a periodic construct of temporal framing, i.e., they are an amount of acceptable spending per week, fortnight, month or year. By presenting periodic instalment payments, buy-now-pay-later inherently reframes the purchase over multiple budget periods, making

the purchase seem more affordable. This research was limited in that it did not introduce or make salient consumer's budgets. Hence, the findings of this research are consistent with the face-value effect (Raghubir & Srivastava, 2002); a less numerous price increased spending as the smaller price appeared less expensive. Wertenbroch et al. (2007) found the reverse face-value effect (i.e., the opposite spending preferences) when budgets were introduced as a salient reference value. When a purchase is presented in a less numerous price, the purchase appears more expensive (compared to a more numerous price) because the residual difference between the budget and the price is smaller. With this alternative reference point, consumers judge the difference between the price and their budget, with the numerosity effect applying to the remaining budget. For example, by introducing a budget, say $250 per week, the residual budget with instalment payments is $200 when assessed against the $50 weekly instalment payment for a $200 purchase. The residual budget, however, is $800 if the more numerous total price of $200 is assessed against 4-weeks' budget ($1,000 = $250 x 4). Hence, the more numerous total price assessed against the more numerous 4-weeks' budget makes the purchase appear less expensive, and increases spending. This prediction reverses the findings in the current research. Further research should explore if consumers reframe budgets to potentially reverse the effect of buy-now-pay-later on spending behaviour as predicted.

Similarly, pay cycles may also act as reference values in the decision-making process of purchases expressed in instalment prices. A purchase framed in instalment payments of the same period as a consumer's budget or pay cycle should be easier to evaluate compared to when the periods are not aligned (i.e., weekly instalment payments are easier to assess against a weekly pay cycle than when the consumer has a monthly pay cycle). General evaluability theory implies that consumers are more sensitive to differences in value when the evaluation uses knowledge of past experience (Hsee, Rottenstreich, & Xiao, 2005; Lembregts & Van Den Bergh, 2018). As such, assessing a periodical instalment payment expressed in a budget period or pay cycle which the consumer is knowledgeable in may diminish the effect of numerosity due to the increased sensitivity to differences. Thus, consumers' pay-cycle or budget may moderate the effect of instalment payment numerosity when they are aligned. Further research should test the effect of whether the frequency of consumer's budgets or pay cycles moderate the numerosity effect of instalment payments.

Unitosity effect. Although this research demonstrates that less numerous instalment prices result in increased spending behaviour, the unitosity heuristic (Monga & Bagchi, 2011) implies that the opposite effect can be induced by making the number of instalments more salient than the instalment price. Monga and Bagchi (2011) demonstrate that numerosity reverses to unitosity when salience shifts from numbers to units. Construal level theory (Trope & Liberman, 2003) implies that judgment with specific prices results in a concrete mindset (Hansen, Kutzner, & Wänke, 2012), and so numerosity may only occur when the decision-maker is in a concrete mindset (Monga & Bagchi, 2011). Focusing consumer attention on units may result in reduced spending behaviour as a reversal of the increase in spending behaviour found in this research. Future research should test the moderating effect of the unitosity heuristic.

Moderating effect of tightwads. An avenue for further research is whether individuals' spending tendencies moderate the influence of instalment payments on spending. Spendthrifts tend to overspend and tightwads tend to underspend compared to their ideal spending preference (Rick et al., 2008). Spendthrifts tend to be less sensitive to situational determinants (Rick et al., 2008), and so the spending behaviour of those currently overspending are less likely to be affected by the effects of buy-now-pay-later compared to those currently underspending. This would imply that the risk of overspending is limited to those that tend to underspend, and as such, the policy implications of the increased spending due to buy-now-pay-later would be somewhat exacerbated.

Effect on reference prices. Consumers mentally update reference prices when they observe prices in the category (Erdem, Keane, & Sun, 2008). Therefore, instalment prices may not only influence the internal reference price of purchasers but also influence the external reference price of all who observe the instalment prices. Both dominant streams of reference price theory, i.e., the psychological perspective of assimilation contrast theory and the economic perspective of adaptation-level theories such as range-frequency theory (Mazumdar, Raj, & Sinha, 2005), suggest that consumer reference prices will be influenced by the use of instalment payments. Given that a novel price leads to deeper mental processing and increased consumer recall (Kim & Kramer, 2006), the potential implication of instalment pricing on reference prices is significant because both the form and magnitude of instalment prices are

fundamentally different to the usual range of reference prices observed by consumers. Further research is needed to ascertain the effect of instalment prices on consumer reference price formation, specifically whether consumers lower reference prices when exposed to instalment prices.

Effect on quality inference and brands. This research found that less numerous instalment payments were inferred as less expensive. This lower perceived expensiveness may, in turn, be inferred as lower quality according to the price-quality relationship. The price-quality relationship heuristic builds on cue-utilisation theory, which suggests that consumers rely on existing attributes to infer missing information (Völckner, 2008). The price-quality relationship heuristic implies that an item perceived as less expensive will be perceived as having lesser quality, especially when there is either little additional information (Gneezy, Gneezy, & Olié Lauga, 2014) or in the absence of appropriate information on quality (Miyazaki, Grewal, & Goodstein, 2005). When multiple cues are in conflict, cue-consistency theory posits that such cues will exhibit negativity bias, i.e., a cue of a negative attribute is more salient in the evaluation process, disproportionally diminishing the overall evaluation (Miyazaki et al., 2005). Thus, even high-quality products may be weakened by the inconsistent pricing cue of a less expensive instalment price of buy-now-pay-later. Further research should test the effects of instalment payments on consumer perceived quality.

The price-quality relationship is particularly important to branded products. Consumers search for and rely on price more frequently when evaluating prestige brands (Brucks, Zeithaml, & Naylor, 2000). This research was limited to unbranded products in order to avoid the potential confounding effect on results during purchase consideration. Brand value may be reduced due to the lowered perceived expensiveness of buy-now-pay-later purchases. The lower perceived expensiveness may impact brands in two aspects, both the purchase decision as well as the post-purchase connection. First, further research should test the impact of brands on the purchase decision using buy-now-pay-later. Specifically, the effects of instalment payments on spending behaviour using both well-known branded products and prestige products to test if there is any deterioration in spending behaviour due to instalment prices. Second, the post-purchase implications of more expensive products being perceived as less expensive due to instalment payment pricing are directly relevant to brands pursuing premium positioning. This raises the question, does the

effect of lowering perceived expensiveness reduce the cache of premium and luxury products? Given that the payment mode alters the psychological connection to the purchase based on the pain of payment, and that a more painful payment increases psychological connection (Shah et al., 2016), by reducing the pain of payment, a purchase using buy-now-pay-later may inadvertently reduce brand connection and therefore diminish brand value post-purchase. Moreover, unforeseen to the customer, deferred payments lower satisfaction and therefore may disappoint consumers over the long-run (Hahn et al., 2013). Further research should also investigate the impacts of using buy-now-pay-later on the post-purchase connection, customer satisfaction and impact on brand value.

7.5 CODA

The numerosity literature suggests that less numerous units lower the perceived quantity presented. The pain of payment literature indicates that the payment mode influences the pain of payment, and in turn influences consumer spending behaviour. These two theories act in combination as the underlying mechanisms which predict and explain spending behaviour using the buy-now-pay-later payment mode. This research found that buy-now-pay-later increased spending behaviour in three experimental studies. This research showed that buy-now-pay-later lowered perceived expensiveness, which in turn lowered the pain of payment, and ultimately led to increased spending. Increased spending was demonstrated by increased purchase intent, an increased amount spent, a greater number of items purchased, and the propensity to choose a more expensive item. This research has important practical implications for retailers and payment service providers, as well as policymakers. The research provides several avenues for future research on the influence of the buy-now-pay-later payment mode and instalment payments on consumers.

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Appendix A of this thesis has been removed as it may contain sensitive/confidential content

Appendix B

Participant Information and Consent Form

Department of Marketing
Macquarie Business School
MACQUARIE UNIVERSITY NSW 2109

Phone: +61 (0)2 9850 9602 & +61 (0)2 9850 9173
Email: yi.li@mq.edu.au & shahin.sharifi@mq.edu.au

Chief Investigator's / Supervisor's Name: Dr Yi Li & Dr Shahin Sharifi

Participant Information and Consent Form

Name of Project: Consumer Decision Making in Shopping Context

You are invited to participate in a study of consumer behaviour. The purpose of the study is to understand how consumers make decisions in various shopping situations. For instance, how consumers make purchase decisions under different circumstances.

The study is being conducted by Rhys Ashby to meet the requirements for the degree of Master of Research under the supervision of Dr Yi Li (+61 (0)2 9850 9602, yi.li@mq.edu.au) and Dr Shahin Sharifi (+61 (0)2 9850 9173, shahin.sharifi@mq.edu.au) of the Department of Marketing.

If you decide to participate, you will be asked to complete a short survey that will take a few minutes. In the survey, you will read a simple scenario, try to imagine yourself in that scenario and respond how you would behave in that situation. There is no risk or discomfort of participation. You will be compensated for participating in this study.

Any information or personal details gathered in the course of the study are confidential, except as required by law. No individual will be identified in any publication of the results. Access to data is limited to those persons directly involved within the research, and no information identifying participants will be released without the explicit consent of the participants concerned. A summary of the results of the data can be made available to you on request by email.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

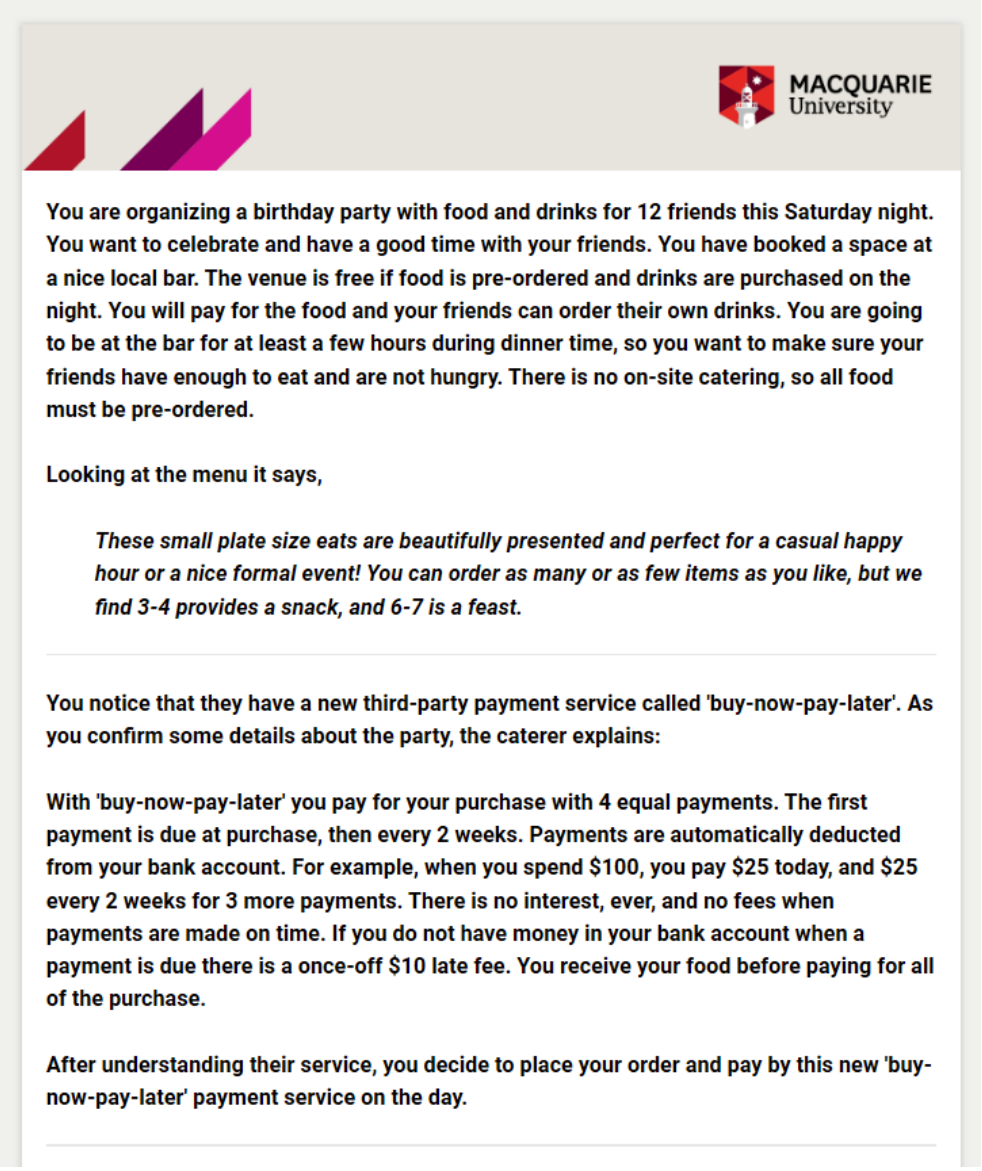
Please select one of the following options:

I have read (or, where appropriate, have had read to me) and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence

I do not agree

Appendix C

Study 1 Stimulus and Measures – Buy-now-pay-later Condition



MACQUARIE University

You are organizing a birthday party with food and drinks for 12 friends this Saturday night. You want to celebrate and have a good time with your friends. You have booked a space at a nice local bar. The venue is free if food is pre-ordered and drinks are purchased on the night. You will pay for the food and your friends can order their own drinks. You are going to be at the bar for at least a few hours during dinner time, so you want to make sure your friends have enough to eat and are not hungry. There is no on-site catering, so all food must be pre-ordered.

Looking at the menu it says,

> ***These small plate size eats are beautifully presented and perfect for a casual happy hour or a nice formal event! You can order as many or as few items as you like, but we find 3-4 provides a snack, and 6-7 is a feast.***

You notice that they have a new third-party payment service called 'buy-now-pay-later'. As you confirm some details about the party, the caterer explains:

With 'buy-now-pay-later' you pay for your purchase with 4 equal payments. The first payment is due at purchase, then every 2 weeks. Payments are automatically deducted from your bank account. For example, when you spend $100, you pay $25 today, and $25 every 2 weeks for 3 more payments. There is no interest, ever, and no fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once-off $10 late fee. You receive your food before paying for all of the purchase.

After understanding their service, you decide to place your order and pay by this new 'buy-now-pay-later' payment service on the day.

Click on each menu item you want to pre-order for your guests:
Note: prices per 12 serves

Cold platter

Avocado guacamole tartlets .....$58 or 4 payments of **$14.50**

Corn fritters with tomato relish .....$46 or 4 payments of **$11.50**

Hot platter

Beef sliders .....$56 or 4 payments of **$14.00**

Beef mini-hotdogs .....$44 or 4 payments of **$11.00**

Marinated chicken drumsticks .....$50 or 4 payments of **$12.50**

Glazed chicken wings .....$38 or 4 payments of **$9.50**

Peppers stuffed with feta cheese .....$38 or 4 payments of **$9.50**

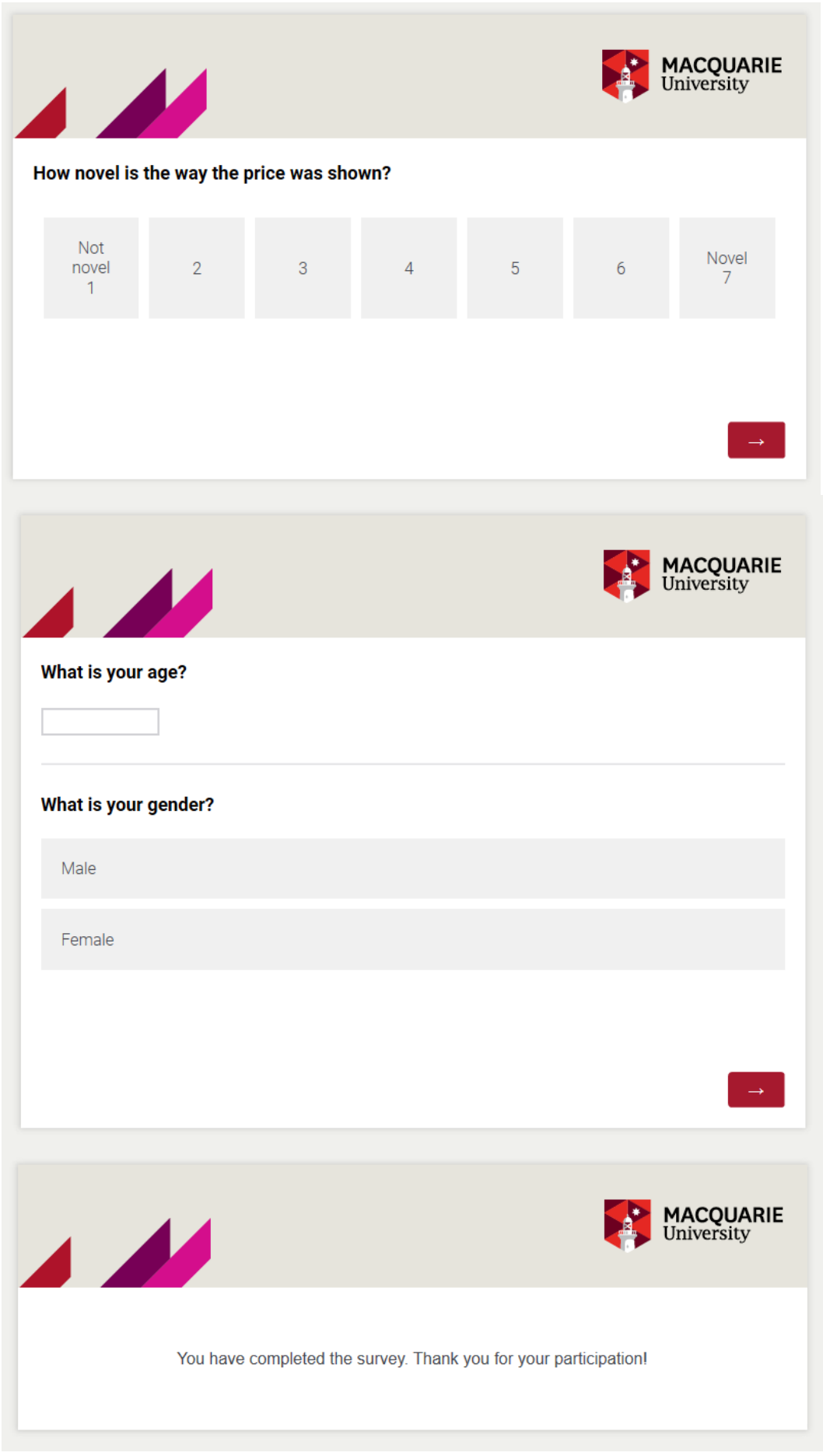
Mac n cheese bites.....$26 or 4 payments of **$6.50**

Sweet platter

Mini-pies (apple, cherry or blueberry) ...$48 or 4 payments of **$12.00**

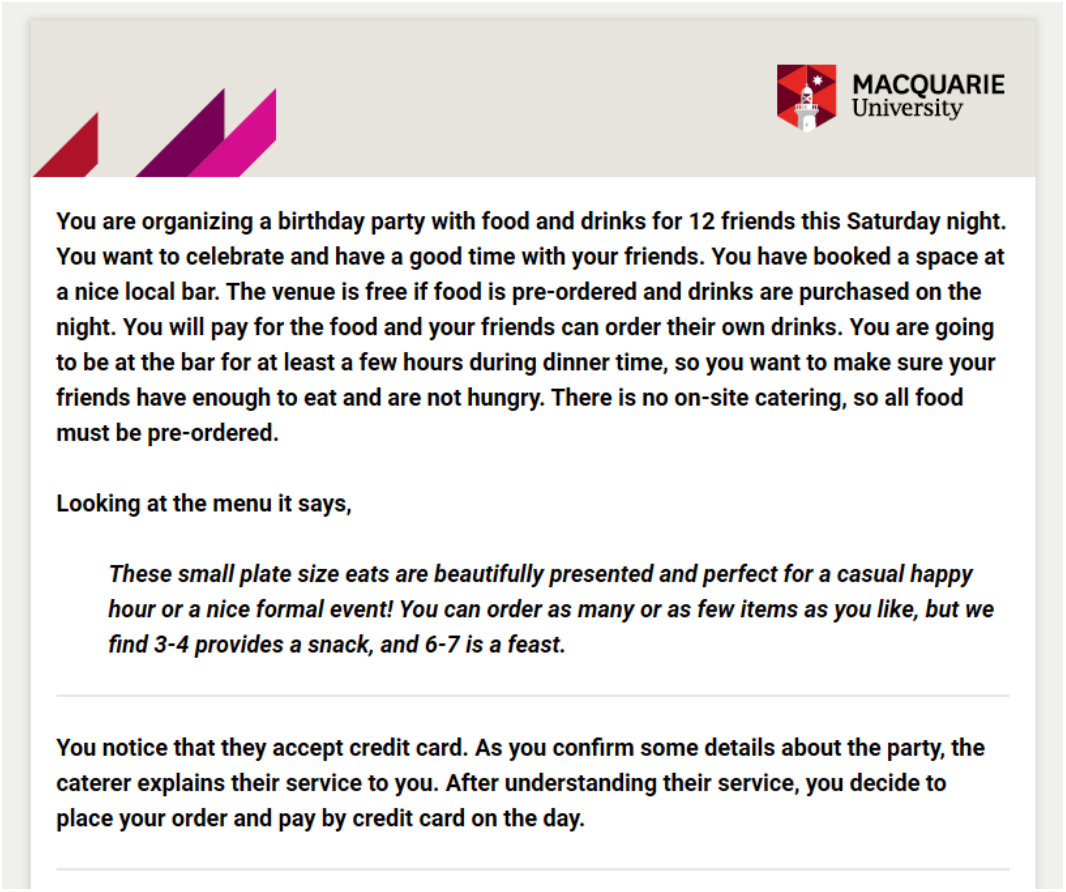
Cookies .....$36 or 4 payments of **$9.00**

→


MACQUARIE University
How novel is the way the price was shown?
Not novel 1
2
3
4
5
6
Novel 7
→
MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix D

Study 1 Stimulus and Measures – Credit Card Condition



MACQUARIE University

You are organizing a birthday party with food and drinks for 12 friends this Saturday night. You want to celebrate and have a good time with your friends. You have booked a space at a nice local bar. The venue is free if food is pre-ordered and drinks are purchased on the night. You will pay for the food and your friends can order their own drinks. You are going to be at the bar for at least a few hours during dinner time, so you want to make sure your friends have enough to eat and are not hungry. There is no on-site catering, so all food must be pre-ordered.

Looking at the menu it says,

> *These small plate size eats are beautifully presented and perfect for a casual happy hour or a nice formal event! You can order as many or as few items as you like, but we find 3-4 provides a snack, and 6-7 is a feast.*

You notice that they accept credit card. As you confirm some details about the party, the caterer explains their service to you. After understanding their service, you decide to place your order and pay by credit card on the day.

Click on each menu item you want to pre-order for your guests:
Note: prices per 12 serves

Cold platter

Avocado guacamole tartlets $58

Corn fritters with tomato relish $46

Hot platter

Beef sliders $56

Beef mini-hotdogs $44

Marinated chicken drumsticks $50

Glazed chicken wings $38

Peppers stuffed with feta cheese $38

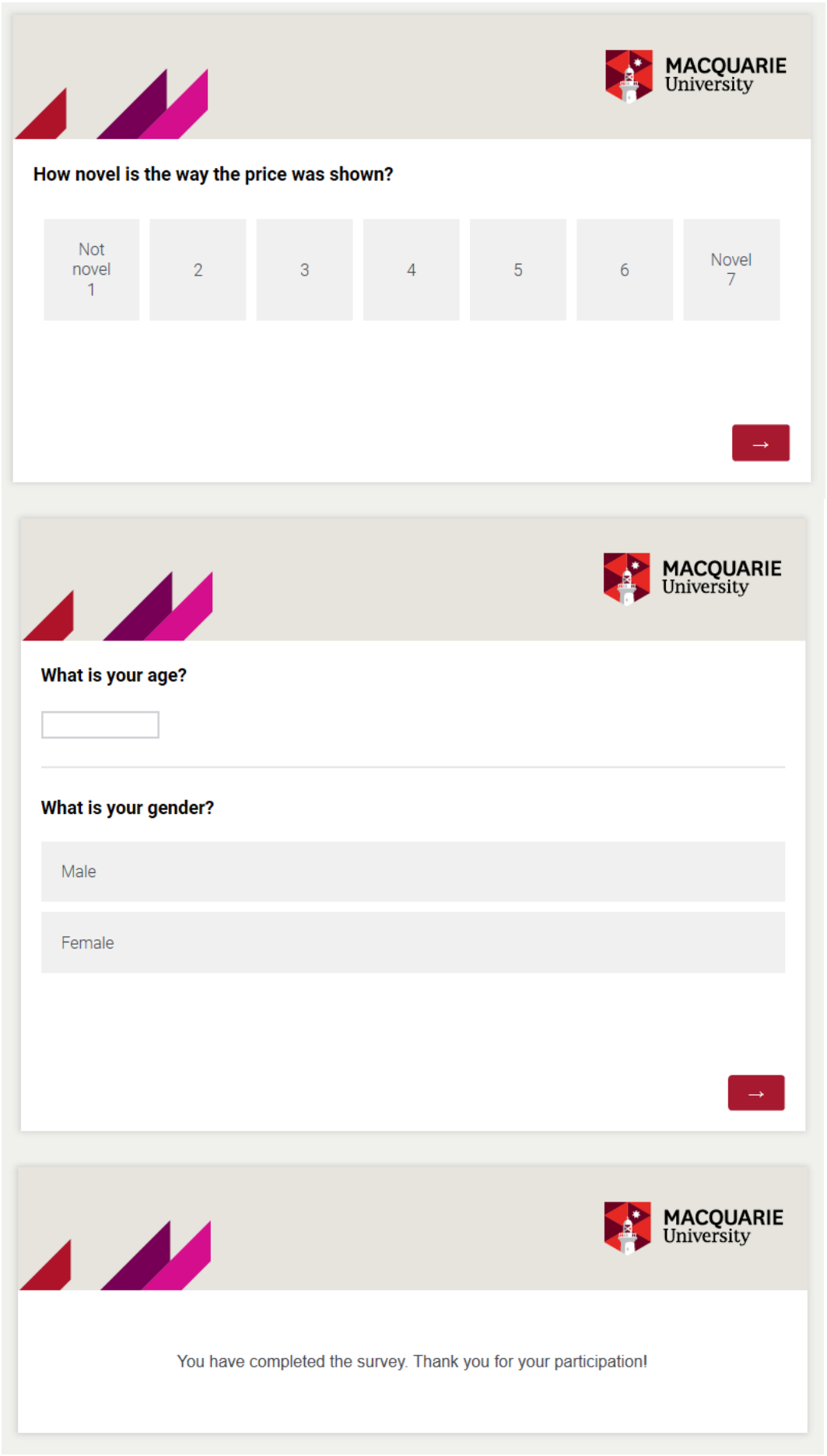
Mac n cheese bites.....$26

Sweet platter

Mini-pies (apple, cherry or blueberry) ...$48

Cookies $36

→


MACQUARIE University
How novel is the way the price was shown?
Not novel 1
2
3
4
5
6
Novel 7
→
MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix E

Study 2 Stimulus and Measures – Buy-now-pay-later Condition

MACQUARIE University

Imagine that on Monday morning you go to the dentist as you have had a toothache over the weekend.

The dentist finds that you need a filling, and advises that it will likely cause further pain if it is not taken care of in the next few weeks. Your dentist confirms that they can do it now as part of your appointment, which will cost $180.

The dentist also provides you a card from the American Dental Association (ADA) that outlines the typical cost of a range of dental services; you notice that the national average cost for a filling is between $171 and $197.

As this was an unexpected purchase you do not have your cash or cards with you. Luckily, the dentist offers a new third party payment service, called 'buy-now-pay-later'.

With 'buy-now-pay-later' you pay for your purchase with 4 equal payments. The first payment is due at purchase, then every 2 weeks. Payments are automatically deducted from your bank account. For example, when you spend $180, you pay $45 today, and $45 every 2 weeks for 3 more payments. There is no interest, and no fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once off $6 late fee. You receive your service today before paying for all of the purchase.

Do you intend to make this purchase today?

Definitely will not purchase 1	2	3	4	5	6	Definitely will purchase 7

How expensive do you think the purchase is?

Very inexpensive 1	2	3	4	5	6	Very expensive 7

Imagine that you are about to pay for the purchase with Buy-now-pay-later. How painful would it be to pay for the purchase?

Not at all painful 1	2	3	4	5	6	Very painful 7

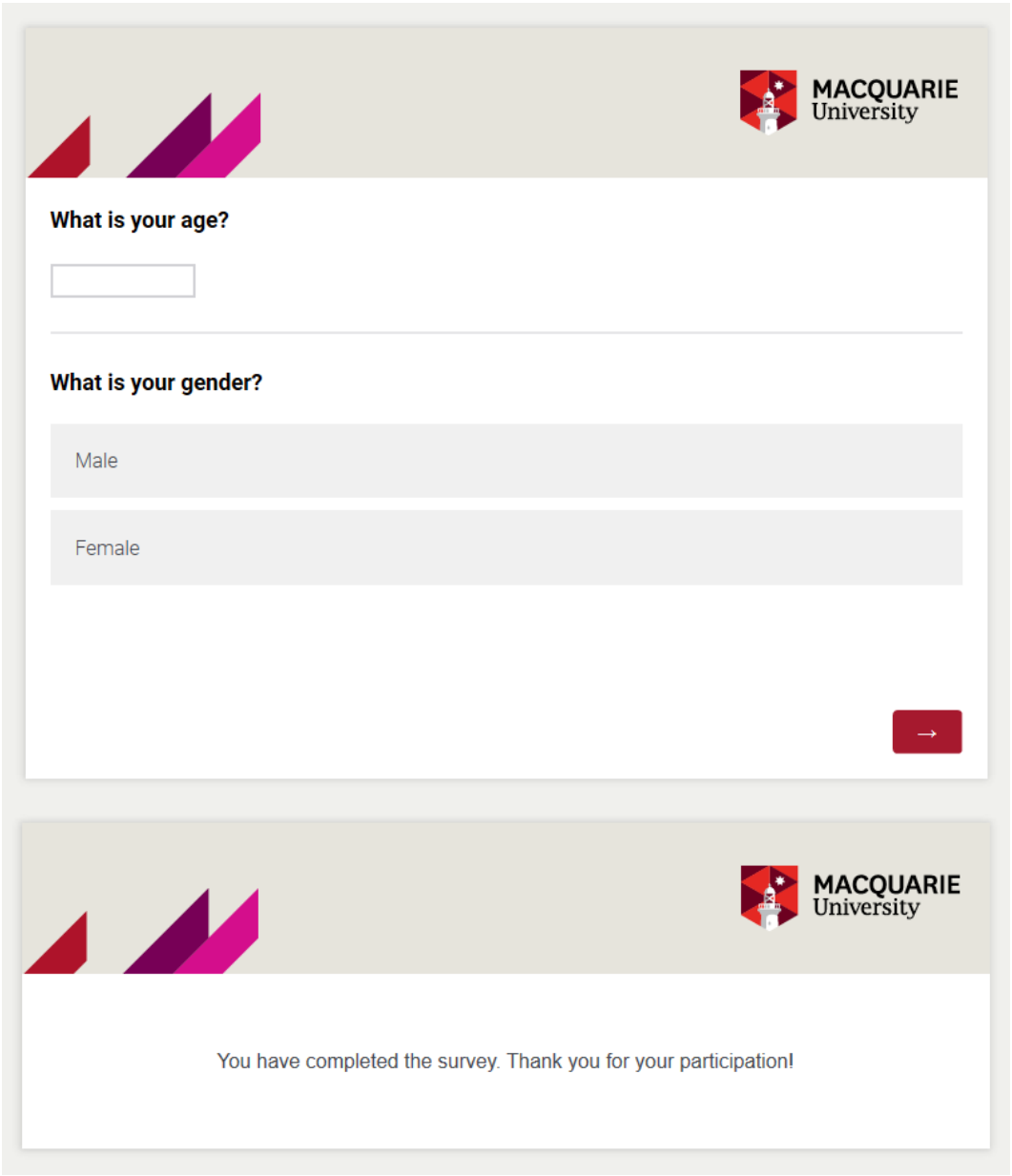
→

MACQUARIE University

How novel is the way the price was shown?

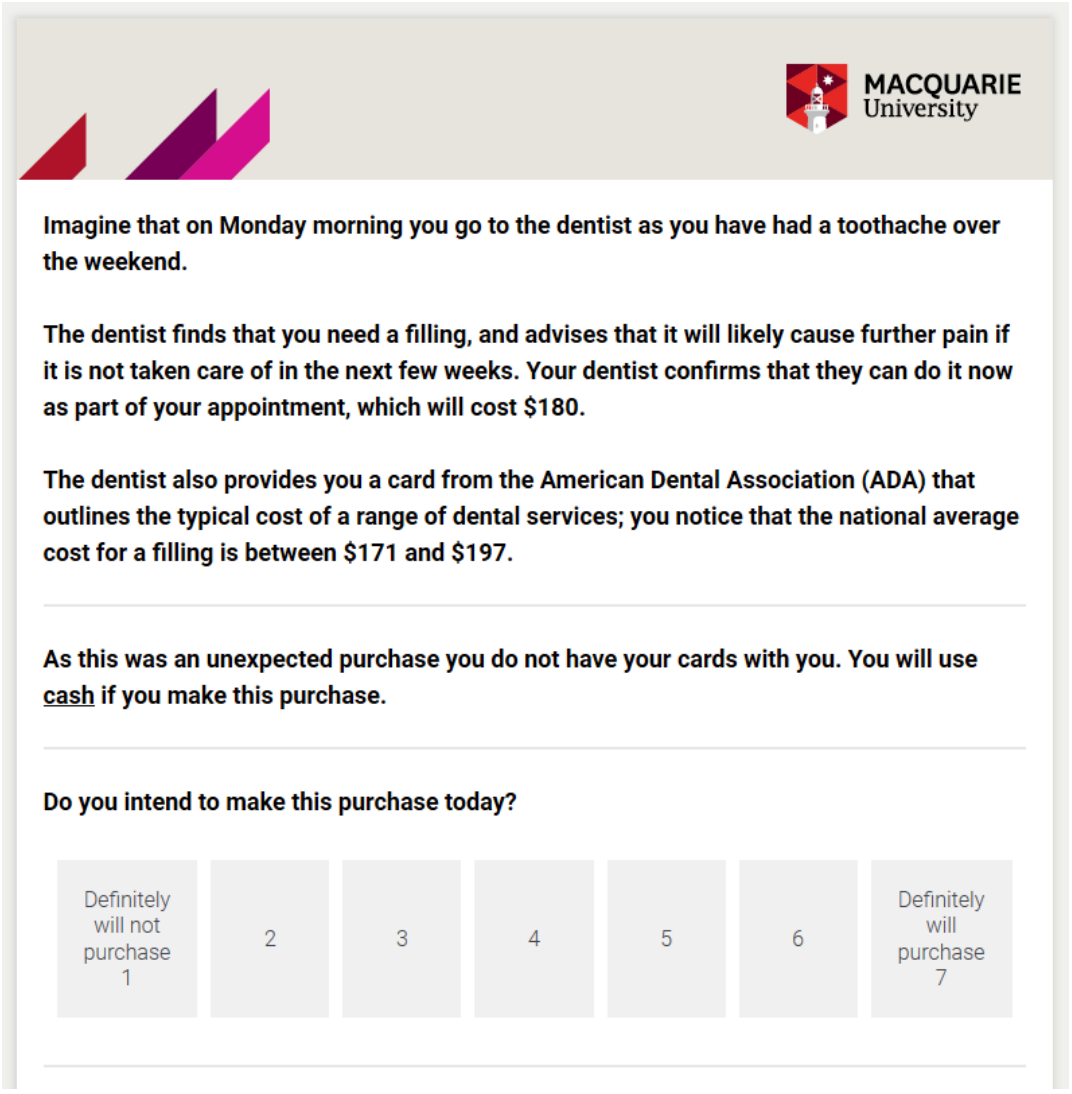
Not novel 1	2	3	4	5	6	Novel 7

→


MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix F

Study 2 Stimulus and Measures – Cash Condition



Do you intend to make this purchase today?

Definitely will not purchase 1	2	3	4	5	6	Definitely will purchase 7

How expensive do you think the purchase is?

Very inexpensive 1	2	3	4	5	6	Very expensive 7

Imagine that you are about to pay for the purchase with Cash. How painful would it be to pay for the purchase?

Not at all painful 1	2	3	4	5	6	Very painful 7

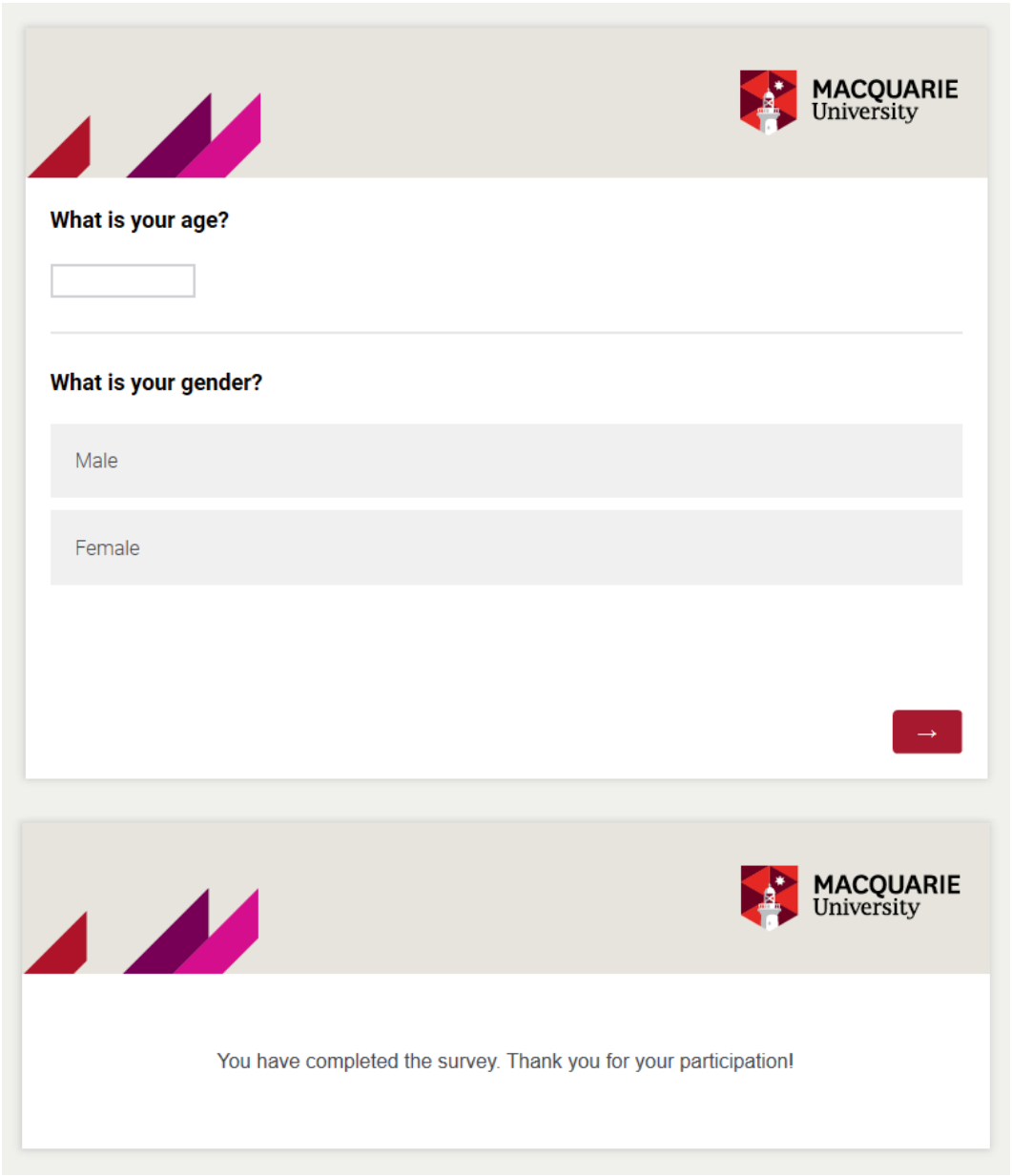
→

MACQUARIE University

How novel is the way the price was shown?

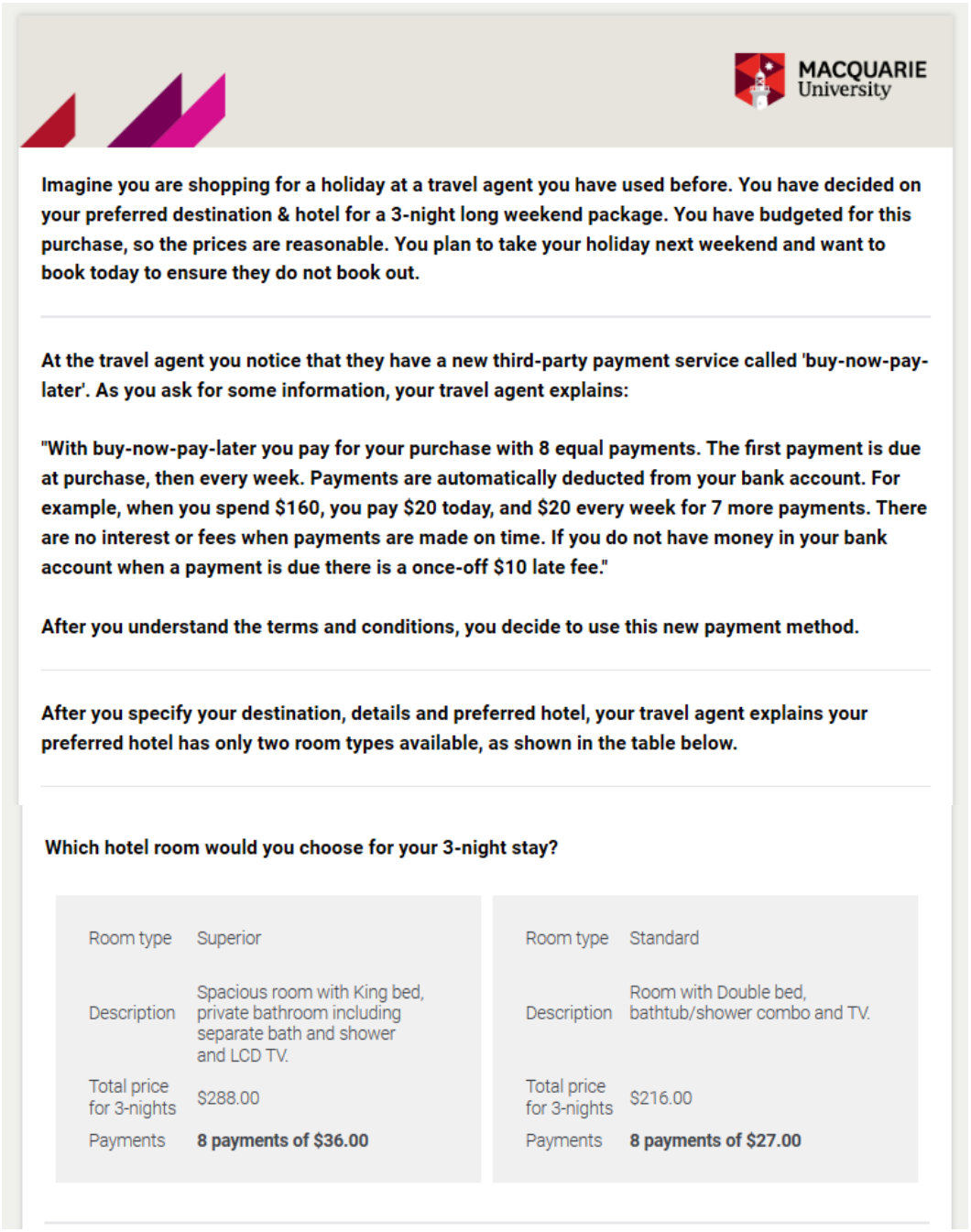
Not novel 1	2	3	4	5	6	Novel 7

→


MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix G

Study 3 Stimulus and Measures – Buy-now-pay-later with 8 Payments



MACQUARIE University

Imagine you are shopping for a holiday at a travel agent you have used before. You have decided on your preferred destination & hotel for a 3-night long weekend package. You have budgeted for this purchase, so the prices are reasonable. You plan to take your holiday next weekend and want to book today to ensure they do not book out.

At the travel agent you notice that they have a new third-party payment service called 'buy-now-pay-later'. As you ask for some information, your travel agent explains:

"With buy-now-pay-later you pay for your purchase with 8 equal payments. The first payment is due at purchase, then every week. Payments are automatically deducted from your bank account. For example, when you spend $160, you pay $20 today, and $20 every week for 7 more payments. There are no interest or fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once-off $10 late fee."

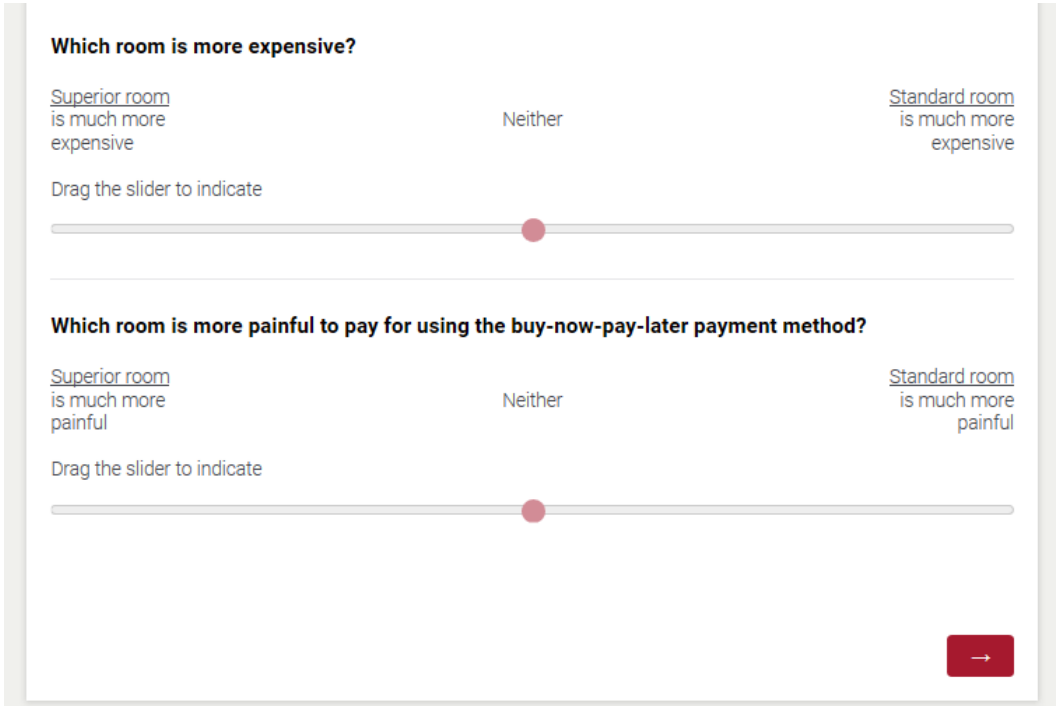
After you understand the terms and conditions, you decide to use this new payment method.

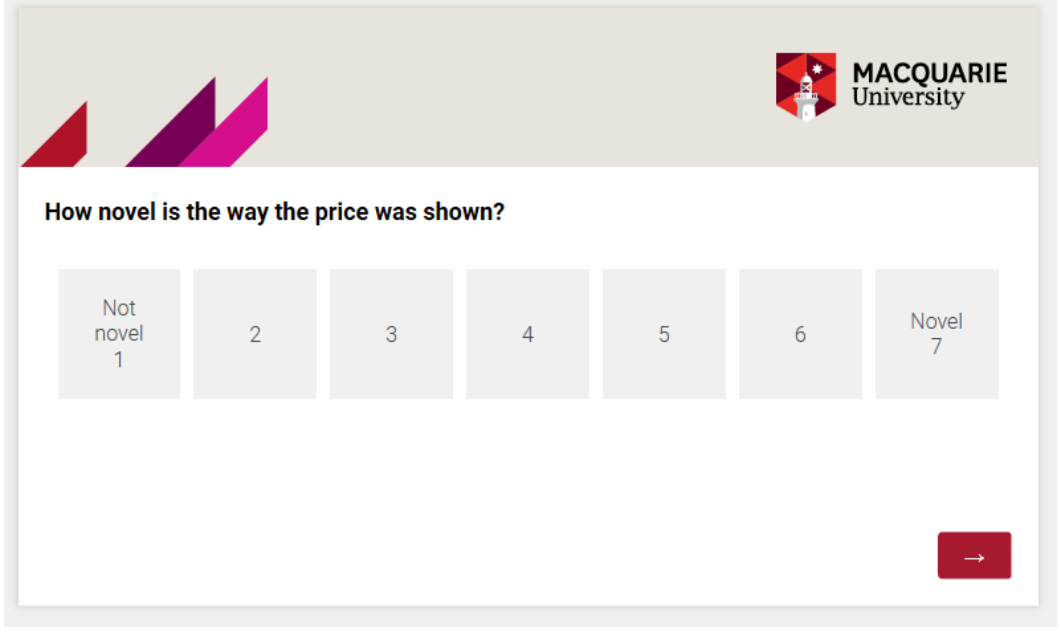
After you specify your destination, details and preferred hotel, your travel agent explains your preferred hotel has only two room types available, as shown in the table below.

Which hotel room would you choose for your 3-night stay?

Room type	Superior
Description	Spacious room with King bed, private bathroom including separate bath and shower and LCD TV.
Total price for 3-nights	$288.00
Payments	**8 payments of $36.00**

Room type	Standard
Description	Room with Double bed, bathtub/shower combo and TV.
Total price for 3-nights	$216.00
Payments	**8 payments of $27.00**


Which room is more expensive?
Superior room is much more expensive
Neither
Standard room is much more expensive
Drag the slider to indicate
Which room is more painful to pay for using the buy-now-pay-later payment method?
Superior room is much more painful
Neither
Standard room is much more painful
Drag the slider to indicate
→


MACQUARIE University
How novel is the way the price was shown?
Not novel 1
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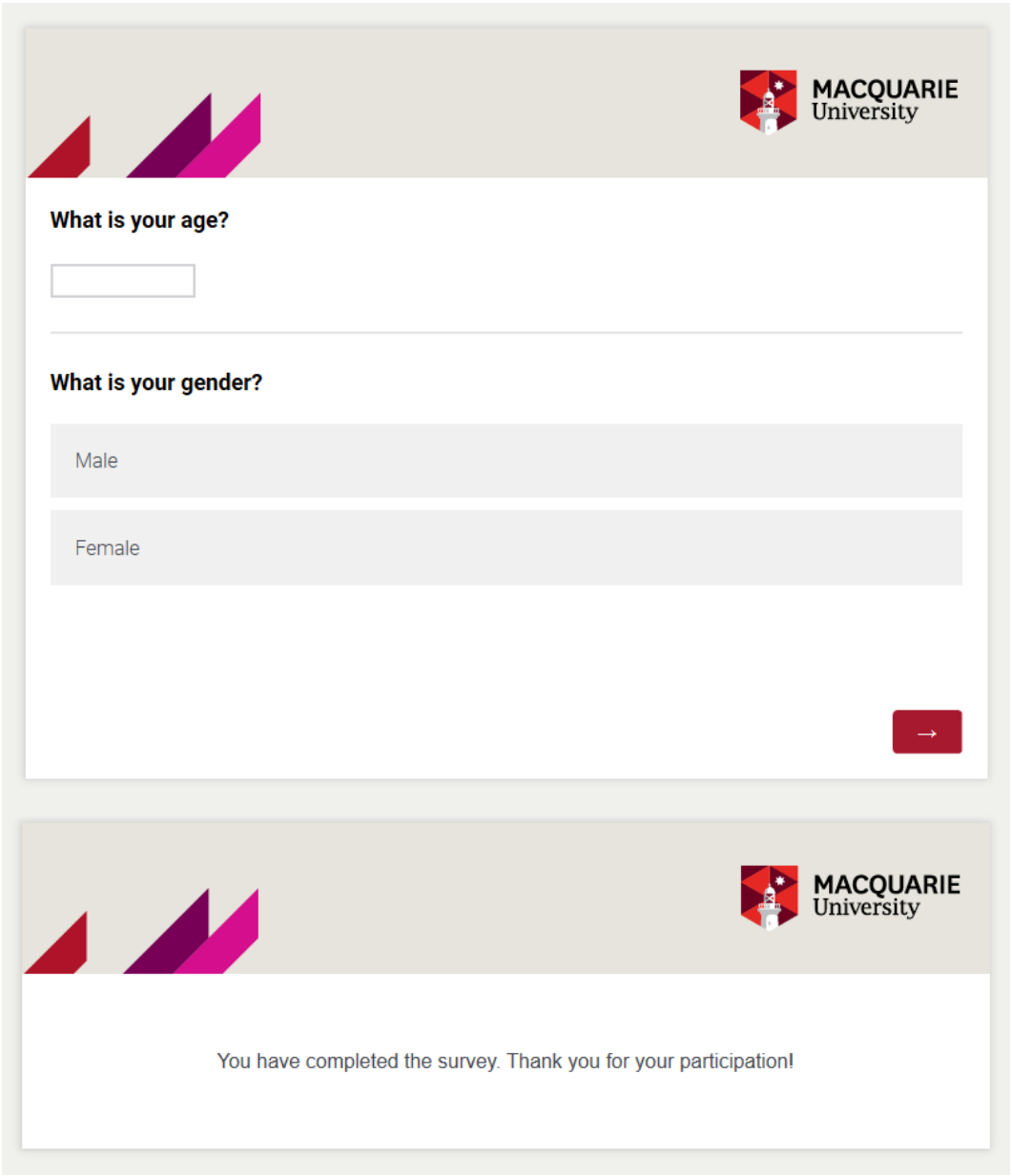
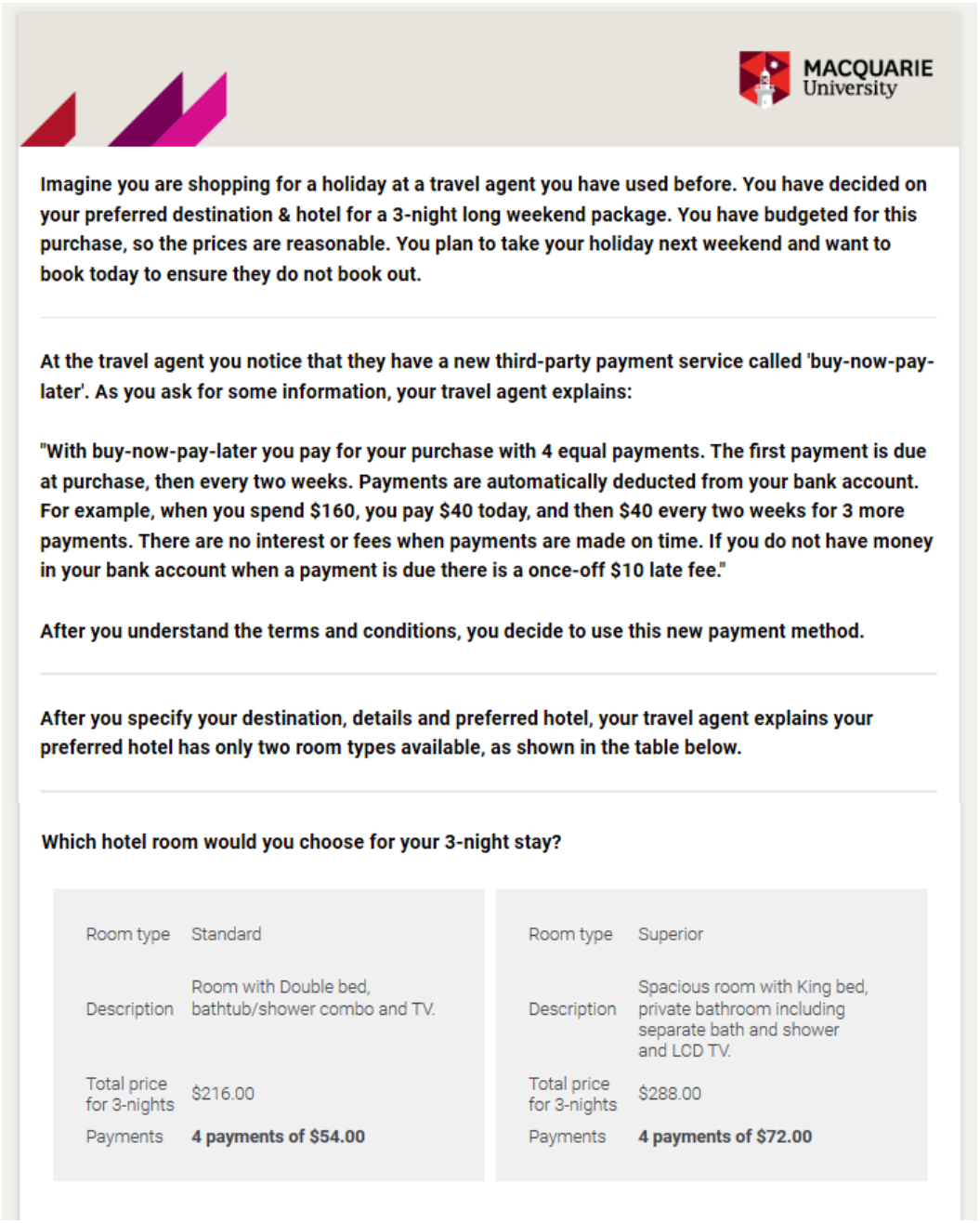
4
5
6
Novel 7
→


MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix H

Study 3 Stimulus and Measures – Buy-now-pay-later with 4 Payments



MACQUARIE University

Imagine you are shopping for a holiday at a travel agent you have used before. You have decided on your preferred destination & hotel for a 3-night long weekend package. You have budgeted for this purchase, so the prices are reasonable. You plan to take your holiday next weekend and want to book today to ensure they do not book out.

At the travel agent you notice that they have a new third-party payment service called 'buy-now-pay-later'. As you ask for some information, your travel agent explains:

"With buy-now-pay-later you pay for your purchase with 4 equal payments. The first payment is due at purchase, then every two weeks. Payments are automatically deducted from your bank account. For example, when you spend $160, you pay $40 today, and then $40 every two weeks for 3 more payments. There are no interest or fees when payments are made on time. If you do not have money in your bank account when a payment is due there is a once-off $10 late fee."

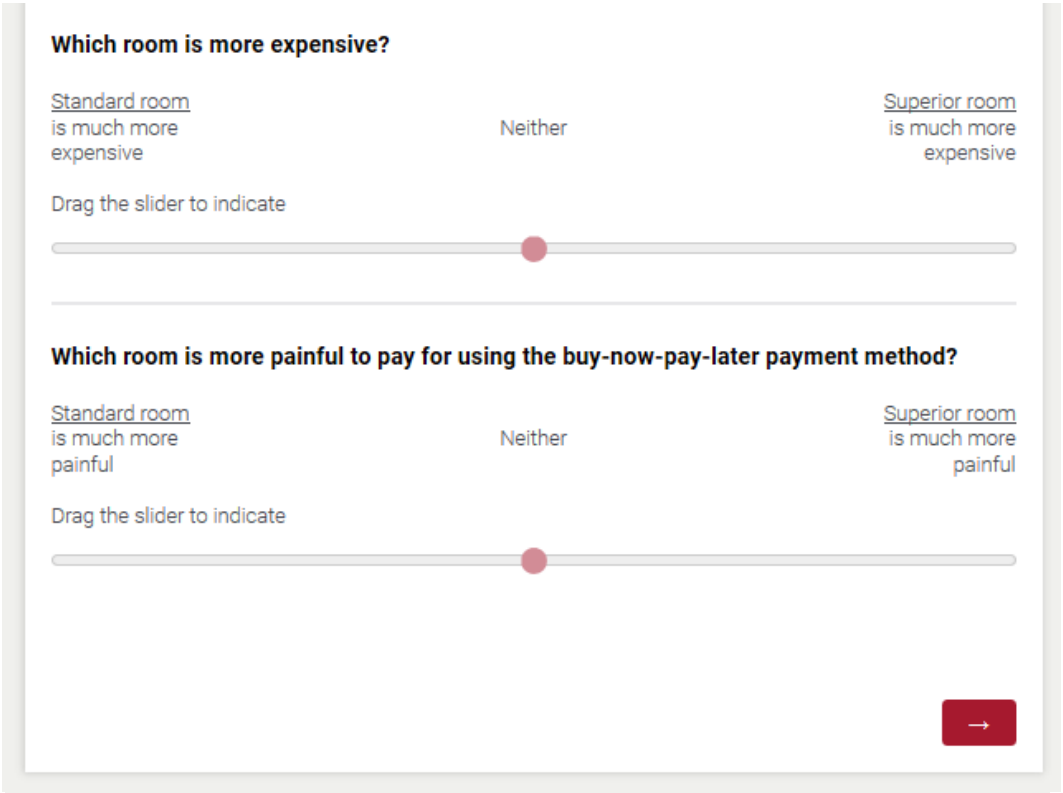
After you understand the terms and conditions, you decide to use this new payment method.

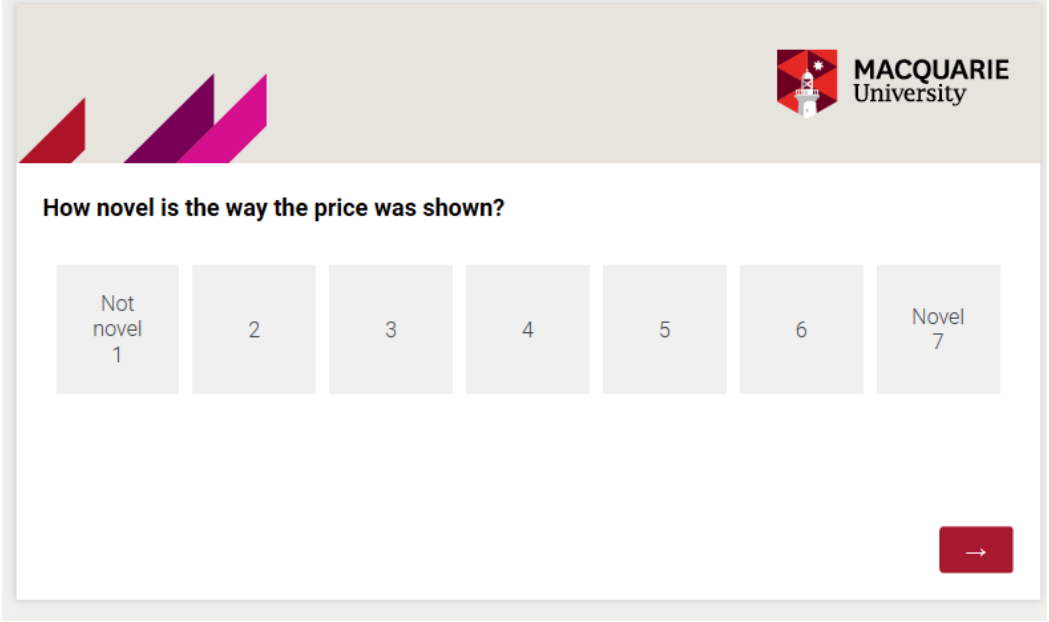
After you specify your destination, details and preferred hotel, your travel agent explains your preferred hotel has only two room types available, as shown in the table below.

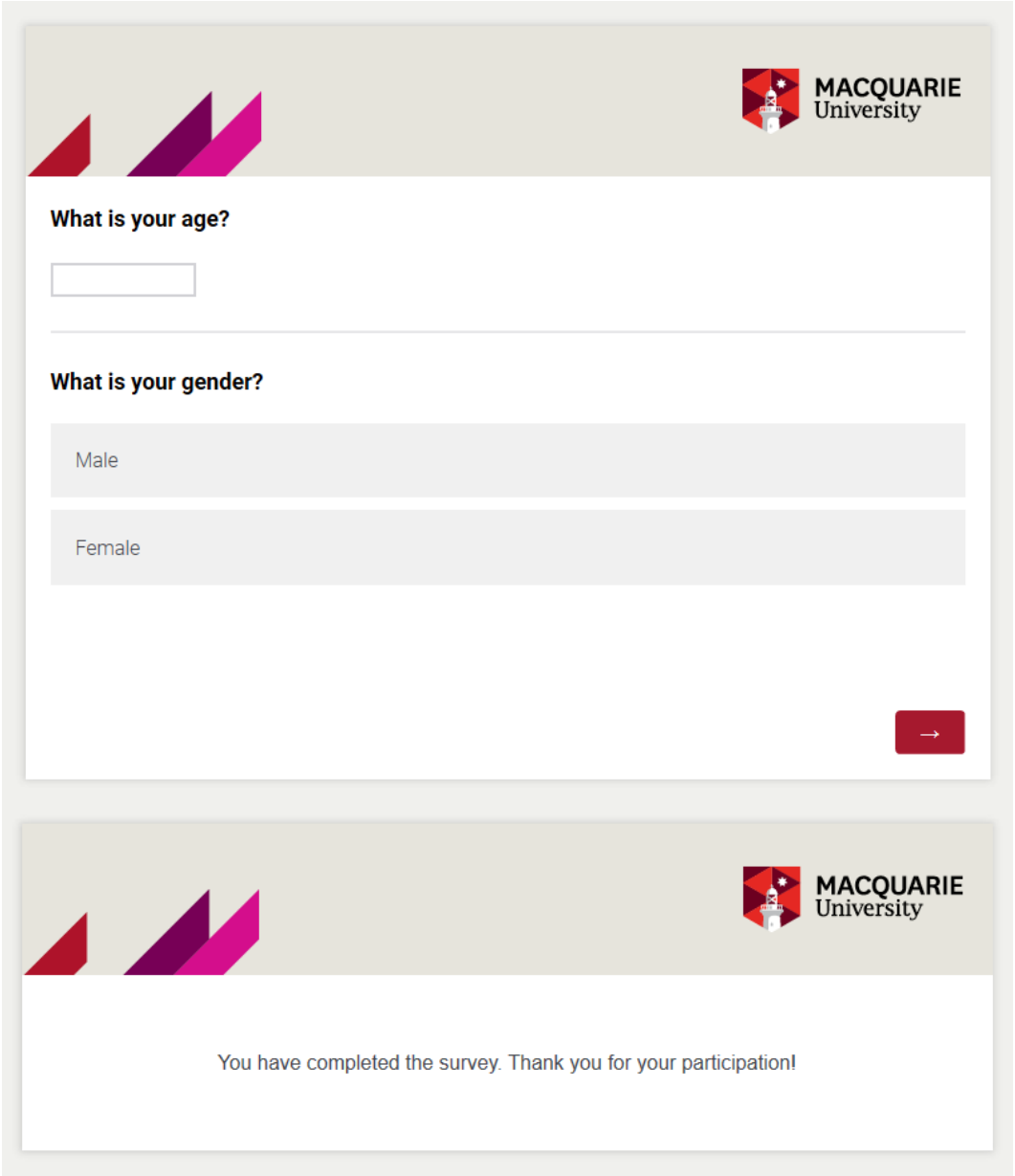
Which hotel room would you choose for your 3-night stay?

Room type	Standard
Description	Room with Double bed, bathtub/shower combo and TV.
Total price for 3-nights	$216.00
Payments	**4 payments of $54.00**

Room type	Superior
Description	Spacious room with King bed, private bathroom including separate bath and shower and LCD TV.
Total price for 3-nights	$288.00
Payments	**4 payments of $72.00**


Which room is more expensive?
Standard room is much more expensive
Neither
Superior room is much more expensive
Drag the slider to indicate
Which room is more painful to pay for using the buy-now-pay-later payment method?
Standard room is much more painful
Neither
Superior room is much more painful
Drag the slider to indicate
→


MACQUARIE University
How novel is the way the price was shown?
Not novel 1
2
3
4
5
6
Novel 7
→


MACQUARIE University
What is your age?
What is your gender?
Male
Female
→
MACQUARIE University
You have completed the survey. Thank you for your participation!

Appendix I

Market Norms of Buy-now-pay-later Compared to Credit Cards

Industry norms in Australia are provided to indicate the typical consumer service.

	Buy-now-pay-later	Credit Cards
Repayment period	Two weeks[1]	Monthly[2]
Repayment minimum per period	25%[1]	3%[2]
Average arrangement balance	$178[3]	$3,200[4]
Spending cap / average limit	$2,000[3]	$9,500[4]

[1] McDuling, J., & Bateman, P. (2018, September 1). The $4b 'buy now, pay later' startup built on a legal loophole. *Sydney Morning Herald*. Retrieved from https://www.smh.com.au/business/companies/the-4bn-buy-now-pay-later-startup-built-on-a-legal-loophole-20180829-p500j4.html

[2] Canstar. (2016, December 6). What is a credit card minimum repayment. Retrieved from https://www.canstar.com.au/credit-cards/credit-cards-and-minimum-repayments/

[3] ASIC. (2018). *Report 600 - Review of buy now pay later arrangements*. Retrieved from https://asic.gov.au/regulatory-resources/find-a-document/reports/rep-600-review-of-buy-now-pay-later-arrangements/

[4] Reserve Bank of Australia. (2019). *C1.1 Credit and Charge Cards – Original Series – Aggregate Data*. Retrieved from: https://www.rba.gov.au/statistics/tables/xls/c01-1-hist.xlsx