

**How Embarrassment and Superstitiousness Affect Consumers'
Superstitious Purchase Decisions?**

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Abstract

Despite being considered as irrational behaviour, consumers across different cultures still incorporate their superstitious beliefs in their purchasing decisions. This phenomenon allows businesses to market products with superstitious meaning to accommodate consumers' beliefs. However, a market for products with superstitious meaning still faces a barrier as consumers are discouraged from purchasing the products due to embarrassment. For businesses to tackle this challenge, it is crucial to understand how consumers can be demotivated to purchase the product when they anticipate embarrassment. Regulatory engagement theory explains how persons can be more motivated or demotivated in pursuing their goals from the means they used to pursue their goals. Furthermore, the purchasing decision also depends on individual differences such as superstitiousness which influence how consumers anticipate the feeling of embarrassment when purchasing a product with superstitious meaning.

This thesis investigates how anticipated embarrassment influences superstitious purchase decisions from a motivational point of view. This thesis also considers individual differences in terms of superstitiousness to further explain how consumers anticipate embarrassment when purchasing the product. As suggested by the results, consumers who anticipate embarrassment when purchasing a product with superstitious meaning tend to be demotivated from purchasing the product since they do not consider the product as an appropriate means for pursuing their goals. An individual's superstitiousness also influences the purchasing decision as highly superstitious consumers tend to anticipate less embarrassment than consumers with low superstitiousness when purchasing the product. The research provides further understanding of superstitious purchasing decisions and suggestions on how the businesses can reduce anticipated embarrassment when consumers purchase a product with superstitious meaning.

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List of Abbreviations

RET = Regulatory engagement theory

IV = Independent variable

DV = Dependent variable

Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. 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.

Signature: [QUT Verified Signature](#)

Date: 27th November 2021

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Two years ago, I started my journey, with zero experience in the field, to become an academic researcher. On one side, the journey is part of a career and life progression. On the other side, it is an effort to prove to myself that I am not a total failure. Although the journey is not over yet, but at this moment, I don't think of myself as a failure anymore. I am glad that I did not give up on myself.

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Chapter1: Introduction

Across different cultures, consumers incorporate superstitious beliefs as an important factor in their purchasing decisions (Block & Kramer, 2009; Ang et al., 2015; Wang et al., 2015). While the average price for a property in Singapore is 8,424 Singaporean dollars per square meter, Chinese consumers in Singapore are willing to pay 2.4% extra for a property with an address containing the number 8 (He et al., 2019). In Hong Kong, license plates containing the number 8 were sold through an auction at a substantially higher price than other plates (Woo et al., 2008). The number 8 is seen as a lucky number in Chinese numerology due to its pronunciation resembling the word “发 (wealthy)” (Huang & Teng, 2009). This belief is also salient in the Chinese pricing strategy as the number 8 is overrepresented among the advertised price in China (Simmons & Schindler, 2002). Additionally, similar superstitious behaviours can be observed across different cultures. Russian consumers are willing to pay extra for an apartment on the 7th floor as they believe it to bring good luck for the residents while avoiding an apartment on the 13th floor due to fear of bad luck (Antipov & Pokryshevskaya, 2015). This evidence clearly indicates that superstitious beliefs play a crucial role in purchasing decisions, yet academic research has provided limited insight on how superstitious beliefs influence purchasing decisions and how individual differences can influence them.

To date, literature has demonstrated negative superstitious beliefs as the only obstacle preventing consumers from purchasing products with superstitious meaning. Different literature has discovered evidence suggesting that products related to negative superstitious meaning tend to be less desirable when compared to products with no superstitious meaning. In the Russian real estate market, an apartment on the 13th floor was sold at a lower price compared to the 12th and 14th floors due to superstitious belief associating number 13 with bad luck (Antipov & Pokryshevskaya, 2015). Similarly, hotel guests who have been assigned to an unlucky room number (e.g., number 4 for Chinese guests and number 13 for western guests) are likely to request a room change (Pratt & Kirillova, 2019). Additionally, an influence of negative superstitious meaning can be observed in pricing strategy as number 4 were avoided as an advertised price in China as Chinese consumers believe the number to be associated with bad luck (Simmons & Schindler, 2002). However, recent literature provided empirical evidence suggesting that a negative emotion (such as embarrassment) induced by

superstitions-based purchasing decisions can be an obstacle for consumers to purchasing products with superstitious meaning (Wang et al., 2017).

As a negative emotion induced by superstitions-based purchasing decisions, embarrassment can discourage consumers from purchasing products with superstitious meaning. Recent literature provided empirical evidence arguing that consumers are likely to avoid purchasing products with superstitious meaning due to an anticipated embarrassment (Wang et al., 2017). The anticipated embarrassment is influenced by public perceptions, which associate superstitious beliefs with irrationality and incompetence (Vyse, 1997; Wang et al., 2014). When a product is considered to be embarrassing, consumers are unlikely to purchase the product to avoid experiencing embarrassment (Dahl et al., 2001; Nichols et al., 2015). For instance, consumers who intend to purchase a lucky charm may anticipate that they would be perceived by others to be unintelligent and feel embarrassed. They, hence, decide to not purchase the lucky charm to avoid embarrassment. While a majority of the literature has focused on explaining the influence of negative superstitious beliefs on superstitions-based purchasing decisions, a relevant negative emotion such as embarrassment has not received the same attention.

For consumers, anticipating embarrassment when purchasing a product with superstitious meaning can demotivate them from purchasing the product (Wang et al., 2017). From a motivational point of view, this behaviour can be explained by the regulatory engagement theory (RET). Regulatory engagement theory (Higgins, 2006; Scholer & Higgins, 2009) demonstrates that when individuals use an appropriate means to pursue their goals, they will be more engaged and more motivated to pursue the goals, leading to a boost in the value of the utilised means. By considering a product with superstitious meaning as a means for consumers to pursue their goals (achieving the highest score from an exam, for instance), consumers who anticipate embarrassment when purchasing the product might not consider the product as a proper means to pursue their goals. This could result in them being less engaged and less motivated to pursue the goals, and ultimately discouraged from purchasing the product. However, extant research has not yet considered using regulatory engagement theory to explain an underlying mechanism of the relationship between anticipated embarrassment and superstitious purchasing decisions.

1.1 RESEARCH OBJECTIVES, GAPS AND QUESTIONS.

This thesis seeks to expand an understanding of a superstitions-based purchase decision by addressing two research questions in consumers' superstitious behaviours. Firstly, the study aims to further understand an underlying mechanism of the relationship between anticipated embarrassment and superstitious purchasing decisions. Secondly, the study investigates the influence of superstitiousness on how consumers anticipate embarrassment when purchasing a product with superstitious meaning.

Despite the fact that literature has demonstrated the influence of embarrassment on superstitious purchasing decisions (Wang et al., 2017), there is little understanding of the underlying mechanism of this relationship from a motivational point of view. As motivation encourages and dictates how individuals behave when pursuing their goals (Fiske & Taylor, 1991; Higgins, 2012), investigating the phenomenon from a motivational point of view allows the researcher to understand how anticipated embarrassment and engagement play a role in determining consumers' willingness to pay toward a product with superstitious meaning.. Consumers have been found to anticipate a feeling of embarrassment when engaging with superstitions-based purchasing decisions (e.g., purchasing a lucky charm) (Wang et al., 2017) due to being aware of an impression perceived by others that associate superstitious beliefs with incompetence and irrationality (Vyse, 1997; Wang et al., 2014). This negative emotion can demotivate consumers, through reduced engagement, from purchasing products with superstitious meaning. Despite an understanding of the result of embarrassment on superstitious purchasing decisions, the literature lacks insight into how anticipated embarrassment affects consumers' motivation to purchase a product with superstitious meaning. Hence, the research question is:

Research Question 1: How does anticipated embarrassment induced by a product with superstitious meaning influence superstitious purchasing decisions?

Furthermore, consumers who are more familiar with embarrassing products tend to experience less embarrassment (Brackett, 2004; Dahl et al., 2001; Moore et al., 2006). As superstitiousness connotes a tendency to use superstitious items (e.g. Bring a lucky charm to an exam will lead to a good grade; Wang et al., 2012), it is safe to assume that consumers with a high superstitiousness are often relying on a product with superstitious meaning and likely to be familiar with the product. Hence, as suggested by the embarrassment literature,

highly superstitious consumers are expected to anticipate less embarrassment when purchasing a product with superstitious meaning. Even though superstitiousness might provide further understanding in how consumers anticipate embarrassment from a product with superstitious meaning, it has not been applied in either embarrassment or superstitions literature before. To address this gap, this thesis investigates the following research question:

Research question 2: How does superstitiousness influence consumers to anticipate embarrassment when purchasing a product with superstitious meaning?

1.2 THEORETICAL FRAMEWORKS

To address the research questions, this study adopts the regulatory engagement theory (Higgins, 2006; Higgins & Scholer, 2009) to explain how an anticipated embarrassment influences a superstitions-based purchase decision. Based on the theory, engagement strength derived from the process of goal pursuit can influence the perceived value of an object involved in the goal pursuit. By applying the theory in a superstitious context, a superstitions-based purchase decision can be considered among consumers as a process in their goal pursuits in which a product with superstitious meaning can be influenced by an engagement strength derived from the purchasing decision. Additionally, as anticipated embarrassment and superstitiousness are expected to be involved in the purchasing decision, they are expected to subsequently affect the perceived value of a product with superstitious meaning. Hence, this thesis will adopt the regulatory engagement theory to demonstrate an influence of anticipated embarrassment and superstitiousness on a superstitions-based purchasing decision.

The theory will be used to understand the underlying mechanism of how anticipated embarrassment influences superstitious purchasing decisions as a process for consumers to acquire a product with superstitious meaning (RQ1). Anticipated embarrassment is expected to influence consumers' engagement strength with the purchasing decision and subsequently influence willingness to pay for the product. Additionally, superstitiousness will be incorporated as a moderating factor to provide further understanding on how individual differences impact the perception toward a product with superstitious meaning (RQ2). The research framework is presented in Figure 1.

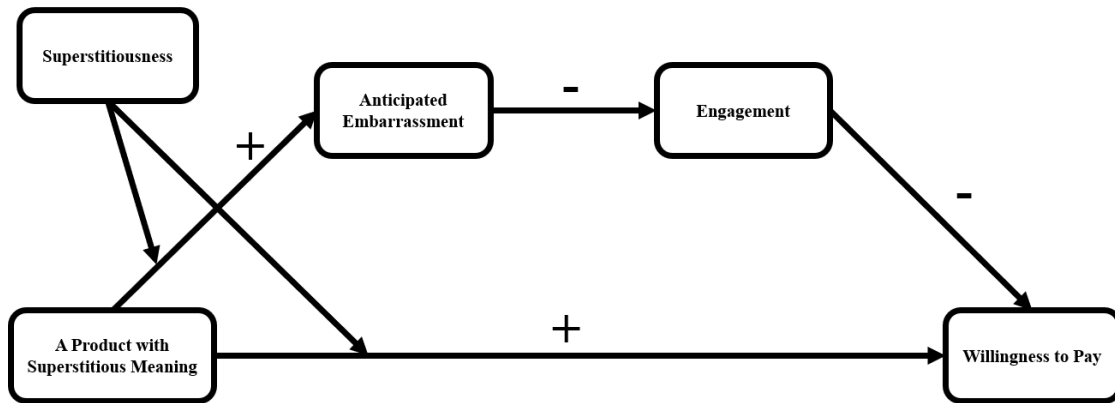


Figure 1; Research Framework.

1.3 RESEARCH METHOD

This study seeks to further understand the influence of anticipated embarrassment and superstiousness on superstious purchasing behaviours. The study conducts an online experiment which recruits Chinese consumers as participants. The sampling strategy is supported by literature suggesting Chinese consumers are highly superstious and more likely to exhibit superstious behaviours than their Western consumer counterparts (Simmon & Schindler, 2003; Pratt & Kirillova, 2019; Tsang, 2004). The experiment observes how consumers respond to a product with superstious meaning compared to a product with non-superstious meaning, and how do the responses influence superstious purchasing decisions. The experiment also involves multiple variables, including anticipated embarrassment, engagement, superstiousness and willingness to pay.

1.4 CONTRIBUTIONS OF RESEARCH

This study makes contributions to literature in different areas, including embarrassment and superstitions. While the literature has investigated and suggested that purchasing a product with superstious meaning is embarrassing and likely to be avoided (Wang et al., 2017), the literature has yet to demonstrate an underlying mechanism of the relationship between anticipated embarrassment and superstitions-based purchase decisions. Embarrassment literature has demonstrated the influence of embarrassment on purchasing decisions from different theories, including the theory of planned behaviour (Dahl et al.,

2001; Nichols et al., 2015) and impression management (Wang et al., 2017). By investigating the relationship from a motivational point of view, the study contributes to embarrassment literature by employing the regulatory engagement theory to explain the underlying mechanism of how anticipated embarrassment affects superstitions-based purchasing decisions. This also contributes to the regulatory engagement literature as it suggests the applicability of the theory in explaining superstitions-based purchasing decisions.

Furthermore, the research contributes to superstitions literature by providing further insight into how consumer differences, in terms of superstitiousness, influence anticipated embarrassment and superstitions-based purchasing decisions. In terms of anticipated embarrassment, the findings extended an insight discovered by Wang et al. (2017), suggesting that consumers tend to anticipate embarrassment when purchasing a product with superstitious meaning. The findings suggested that superstitiousness influences how consumers anticipate embarrassment when purchasing a product with superstitious meaning, as consumers with low superstitiousness tend to anticipate more embarrassment when purchasing and vice versa. Additionally, this thesis provided evidence to support an association between superstitiousness and a tendency to exhibit superstitious behaviour. Although it is widely understood that superstitiousness is positively correlated with a tendency to behave superstitiously (Huang & Teng, 2009; Wang et al., 2012; Wishman & Watt, 2004), evidence to support the statement in purchasing context is limited. This thesis provides empirical evidence suggesting that superstitiousness is also positively correlated with a tendency to purchase a product with superstitious meaning.

Considering practical contributions, businesses and marketing practitioners who market products with superstitious meaning can further understand the relationship between anticipated embarrassment and superstitious purchasing decisions. Firstly, as the study investigates how consumers perceive a product with superstitious meaning differently, practitioners need to consider consumer superstitiousness when developing an effective segmentation strategy. While highly superstitious consumers can be considered as a profitable segment, communicating with consumers with low superstitiousness might require different tactics instead. Additionally, insight into the underlying mechanism between anticipated embarrassment and superstitious purchasing decisions allows practitioners to develop a strategy to minimise the effect of anticipated embarrassment when consumers purchase a product with superstitious meaning.

1.5 OUTLINE OF THE THESIS

This thesis consists of six chapters. In the first chapter, *Introduction*, an overview of the study is provided. This is followed by *Literature Review* as the second chapter. The chapter discusses existing literature on superstitions, embarrassment and engagement. The third chapter, *Hypotheses development*, focuses on explaining the developing process of each hypothesis. *Research Design*, as the fourth chapter, demonstrates how this study plans to collect and analyse data. In the fifth chapter, *Data Analysis*, the study presents statistical results as evidence to support the proposed hypotheses. Finally, *Discussion and Conclusion*, the last chapter discusses the findings and how these findings can contribute to both theoretical and practical domains. The chapter also outlines limitations and suggestions for future research.

Chapter 2: Literature Review

This chapter presents a review of relevant literature, including superstitions, embarrassment and engagement. Firstly, the chapter will discuss existing literature on superstitions, both theoretical construct and antecedents. This chapter will also demonstrate the influence of superstitious beliefs in the consumption context and identify gaps in the current literature. Embarrassment literature is then critically reviewed to explain further how embarrassment plays a role in superstitious consumption. Lastly, engagement literature will be presented along with regulatory engagement theory to illustrate how engagement can explain the underlying motivational mechanism of superstitious purchasing decisions.

2.1 SUPERSTITIONS

In superstitions literature, the term ‘Superstition’ has been broadly conceptualised as a force interacting with an external environment to influence an outcome (Malinowski, 1992; Vyse, 1997). The term can be categorised as either a socially shared belief or an idiosyncratic belief. While a socially shared superstitious belief is commonly believed and shared among individuals in the same culture (Vyse, 1997), an idiosyncratic superstitious belief is a personal belief held by each individual (Hamerman & Johar, 2013). As suggested, the idiosyncratic superstitious belief is referred to as a personal belief that can be different across individuals despite sharing the same culture. For instance, a person might believe that a blue pen is a symbol of good luck, while another person might disagree and suggest that a green pen is instead a symbol of good luck. The belief can create a significant challenge for experimental design as superstitious beliefs among recruited participants can be vastly diverse and difficult to control. To avoid confusion, this study focuses on social shared superstitious beliefs only as it poses less complication in experimental design when compared to the idiosyncratic superstitious belief.

2.2 PSYCHOLOGICAL EXPLANATIONS OF SUPERSTITIONS

The early psychological concept was mentioned by Malinowski (1992) as the author observed the Trobriand Islander cultures and discovered that the islanders rationally behave during regular activities, fishing in a safe area around shallow water, for instance. However, they perform superstitious rituals when fishing in an unsafe deep-sea area in an attempt to control an uncertain environment. This suggests that superstitions involve (i) a belief shared among individuals in the same culture, and (ii) such belief suggests that an external environment can be controlled through specific means. The construct has been further developed as Vyse (1997) incorporated the influence of science into the construct. The new theoretical construct refers to superstitions as a belief that is inconsistent with scientific knowledge, suggesting that superstitions are irrational beliefs as they contradict scientific knowledge. It has been adopted by marketing literature, including Mayo and Mallin (2014), Block and Kramer (2009; 2011), and Kramer and Block (2008). Hence, resonating with Vyse (1997) and other marketing literature, this study conceptually defines ‘Superstition’ as a culturally shared and illogical belief that suggests the use of specific actions to influence the environment and create desirable outcomes.

Throughout history, superstitions have been investigated and explained by different literature. Several studies have conducted a literature review on superstitions, in which they approached the literature review by classifying conceptual explanations of superstitions into multiple groups based on similarities in sociological and psychological factors. Svedholm and Lindeman (2012) classified superstitions into seven groups: False belief, Belief in the scientifically impossible, Covariation bias, Laws of sympathetic magic, Irrational act, Counterintuitive, and Intuitive belief. In contrast, Vaidyanathan et al. (2018) created a classification of three major groups, including Personality traits, Failed learning processes, and Coping mechanisms. However, this study will not adopt these classifications as they are not entirely mutually exclusive and are easily confused. For an easier understanding, this study intends to provide psychological explanations of superstitions through time.

Early psychological literature considers superstitions as a failure in an individual’s cognitive mechanism. Investigations conducted by Morse and Skinner (1957) and Skinner (1948) observed pigeons’ behaviour by giving them food when they interact with a switch. After repeatedly providing the food, they found that the pigeons associate interaction with the switch and receiving food. This led the pigeons to interact with the switch when they expected to be fed. Morse and Skinner (1957) and Skinner (1948) explained that the

underlying mechanism is attributed to faulty associative learning between action and consequence. As the pigeons have repeatedly received food every time they interacted with the switch, they then associated pressing the switch with food despite the fact that the switch had no causal influence over the provision of food. The proposed explanation has been tested in humans by Catania and Cutts (1963) and found supporting evidence for the cognitive failure mechanism. The concept of faulty association has become an explanation for superstitious beliefs occurring in an individual. For instance, students who successfully pass an exam after purchasing a lucky charm tend to associate the lucky charm with passing the exams. This leads the students to superstitiously believe that the lucky charm can make them pass the exam, even though the lucky charm has no actual influence over the exam.

Beck and Forstmeier (2007) further explained the mechanism of the faulty association by suggesting that an occurrence of superstitious beliefs is an inevitable result of associative learning and risk management. As part of a learning process, individuals observe a pattern of occurred events to understand the surrounding environment. This leads them to decide whether to categorise the events as either a coincidence or a causal pattern. When categorizing the events as a causal pattern, suggesting the prior event leads to the subsequent event, individuals potentially risk creating a false association and superstitious beliefs. In contrast, when categorizing the events as a coincidence, individuals face a potential risk of ignoring either a dangerous or an opportunistic causal pattern. Since the potential cost of creating a false association is likely to outweigh the potential cost of ignoring the useful pattern, superstitious beliefs are often created as a by-product of an individual's learning process.

The concept of superstitions has also been expanded by Campbell (1996) to explain a number of individuals who claim to be non-superstitious believers yet behave superstitiously. The phenomenon has been termed as 'Modern superstition' (Campbell, 1996), defining an individual who rejects to hold any superstitious beliefs but allows the beliefs to affect their behaviours and thoughts. For instance, individuals might knock on wood when talking about a bad incident despite denying either superstitious beliefs or the logical effects of the action. This paradox was explained by Campbell (1996) with the notion that an individual, who assigns value to be able to do something, tend to act superstitiously as a method to cope with the situation where they find themselves helpless. For example, consumers who hold such value might purchase a lucky charm as a method to cope with helplessness while waiting for their loved ones to recover in a hospital despite having no superstitious belief.

More recently, Risen (2016; 2017) proposed the use of the dual-process model in explaining modern superstitions. The mechanism is termed as 'Acquiescence'. The dual-process model refers to two thinking systems named System 1 and System 2, operating behind an individual's cognition (Kahneman & Frederick, 2005). System 1 is responsible for generating intuitive thoughts, which allows an individual to react instinctively toward an environment. On the other hand, System 2 is responsible for analysing and reasoning the intuitive thoughts generated by System 1. Although not every intuitive thought generated by System 1 would be filtered by System 2, any intuitive thoughts deemed by System 2 to be unreasonable or non-sensical would be discarded and not result in any action. However, according to Risen (2016; 2017) and Walco and Risen (2017), the acquiescence occurs when an intuitive thought generated from System 1 is deemed irrational by System 2 yet results in an action. For instance, consumers who are going to have a job interview might have an intuition generated by System 1 telling them to purchase a lucky charm to bring in good luck during the interview. The intuition would subsequently be considered by System 2 as an irrational thought but might not be discarded. This ultimately results in consumers purchasing a lucky charm despite claiming to be a non-believer. The phenomenon can be observed among modern superstitious behaviour in which an intuitive thought to follow superstitious beliefs has been generated by System 1 and deemed irrational by System 2 yet results in superstitious behaviour.

Through time, literature has attempted to understand an occurrence of superstitions by providing psychological explanations for it. An early psychological explanation suggested that superstitions stemmed from faulty association (Catania & Cutts, 1963; Morse & Skinner, 1957; Skinner, 1948). As individuals attempt to understand randomly occurring events, they associate the events with causal relationships, resulting in the creation of superstitions. Literature also further explained the phenomenon by suggesting that this faulty association is an inevitable product of an individual learning process (Beck & Forstmeier, 2007). Individuals are facing a decision whether to explain randomly occurred events by causally associating them or accepting them as a random occurred event. Due to relatively lower risk from a survivability point of view, individuals tend to causally associate randomly occurred events rather than accepting them as they are. Lastly, literature also pointed out that some individuals claim to be non-superstitious believers yet behave superstitiously (Campbell, 1996). By using the dual-process model, literature demonstrated that such behaviours are

caused by a failure in individuals' cognitive systems to discard superstitious thoughts despite recognising them as irrational (Risen, 2016; 2017; Walco & Risen, 2017).

2.3 SUPERSTITIOUS BEHAVIOUR

Although various studies have focused on superstitious behaviours, the term 'Superstitious behaviour' has not been clearly defined. The majority of studies, instead, focus on defining the term 'Superstition' and merely refer to 'Superstitious behaviour' as behaviour involving superstitions or superstitious beliefs (Keinan, 2002; Kramer & Block, 2011; Mayo & Mallin, 2014). However, Vaidyanathan et al. (2018) have reviewed relevant literature and identified two crucial characteristics of superstitious behaviour commonly used in the literature. Firstly, the behaviour must appear to accept or believe that the extraordinary beliefs are real. Secondly, the behaviour must aim to influence an outcome which either appeals to desired outcomes or avoids undesired outcomes. Hence, following Vaidyanathan et al. (2018), this study adopted a conceptual definition of 'Superstitious behaviour' as a behaviour or action based on an extraordinary belief to influence an outcome.

2.3.1 Socio-demographic antecedents of superstitious behaviours.

Different studies have investigated the relationship between socio-demographic antecedents and the likelihood to engage with superstitious behaviours (Aarnio & Lindeman, 2005; Mowen & Carlson, 2003; Torgler, 2007). Although several studies demonstrate contradicted findings, the majority of the findings show that socio-demographic antecedents generally influence the likelihood of an individual engaging with superstitions.

The majority of the literature suggested that age is negatively associated with the likelihood of an individual behaving superstitiously. A study conducted by Torgler (2007) discovered that as individuals get older, they are less likely to believe in superstitions due to less openness toward new beliefs. Sagone and Caroli (2014) also confirmed the results, as the study found older adolescents in Italy to be less likely to believe in superstitions than the younger group. A study conducted by Mowen and Carlson (2003) found a similar result that only individuals older than 40 showed a negative correlation between age and likelihood to believe in superstitions. Lastly, Pratt and Kirillova (2019) found that Chinese individuals

aged between 18-24 are likely to exhibit superstitious behaviour more than older age groups. In general, as individuals get older, they are less likely to exhibit superstitious behaviours.

In terms of gender, the majority of the studies indicate significant gender differences and suggest women are more likely than men to behave superstitiously. Studies conducted by Torgler (2007), Huang and Teng (2009), and Brevers et al. (2011) found women to be substantially more likely to believe in superstitions than men. However, Mowen and Carlson (2003) found no significant difference between the two genders in terms of superstitious behaviours. Overall, the likelihood for an individual to engage in superstitions is significantly influenced by gender.

An association between education and the likelihood to engage in superstitious behaviours is found to be negative. Studies conducted by Aarnio and Lindeman (2005) and Torgler (2007) suggested that individuals with a higher educational level are unlikely to believe in superstitions. However, Mowen and Carlson (2003) found education does not significantly influence an individual to believe in superstitions. Furthermore, a separate line of research has found analytical thinking to explain the influence of education on the likelihood to engage with superstitions. Aarnio and Lindeman (2005) discovered that university students tend to be less superstitious than students from a vocational school due to higher analytical thinking among university students. Analytical thinking also affects superstitiousness among disciplines as students from disciplines related to high analytical thinking (e.g., psychology and medicine) are relatively less superstitious than students from education and theology disciplines (Aarnio & Lindeman, 2005). Existing literature thus suggests education, including educational level, type of education and discipline, to influence a tendency to engage with superstitions due to different degrees of analytical thinking.

Despite receiving little attention, several socio-demographic antecedents have been found to influence the likelihood to exhibit superstitious beliefs. Employment status significantly affects superstitious behaviours as unemployed individuals are likely to be more superstitious than employed individuals due to a lower sense of control over their life (Pratt & Kirillova, 2019; Torgler, 2007). In terms of marital status, singles and couples are less likely to be superstitious compared to widowed, divorced and separated individuals (Torgler, 2007).

Although not unanimous, literature has thus confirmed that several socio-demographic antecedents significantly influence individuals to engage with superstitions. Age has been found to play a role as individuals tend to reject superstitious beliefs and are

less likely to exhibit superstitious behaviours when they get older (Sagone & Caroli, 2014; Torgler, 2007). Research also demonstrated that gender is a significant antecedent as women are more likely to behave superstitiously than men (Brevers et al., 2011; Huang & Teng, 2009; Torgler, 2007). In terms of education, the literature suggests that individuals with advanced education are less likely to engage with superstitions when compared to individuals with less education (Aarnio & Lindeman, 2005; Torgler, 2007). Lastly, having a job makes individuals less likely to exhibit superstitious behaviours (Pratt & Kirillova, 2019), as does being single and having a partner (Torgler, 2007).

2.3.2 Psychological antecedents of superstitious behaviours.

Different factors involving control have been presented as the major psychological antecedents that influence individuals to behave superstitiously. According to the locus of control theory (Rotter, 1990), belief in an internal locus of control means thinking that an individual has the power to control an event. In contrast, believing in an external locus of control means thinking that an occurred event is influenced by chance. Sagone and Caroli (2014; 2015) and Tobacyk et al. (1988) discovered individuals believing in external locus of control to be more superstitious than individuals believing in internal locus of control. This aligns with the concept proposed by Malinowski (1992), which referred to superstition as a response to an uncontrollable external environment.

Relatedly, perceived control and desire for control are also crucial psychological indicators of superstitious behaviours. When facing a situation, individuals who experience less power to control the environment, as indicated by low perceived control, are likely to behave superstitiously to obtain a sense of control (Keinan, 1994; 2002). Different studies have explained the mechanism of obtaining control through engaging with superstitions in different ways. For instance, Case et al. (2004) suggested that engaging with superstitions allows individuals to gain secondary control, which refers to an ability to control one's own thoughts and emotions rather than the environment. In contrast, Rudski and Edwards (2007) argued that engaging with superstitions allows individuals to obtain an illusion of control which refers to a perception of having control over the outcome despite no actual control occurring.

The desire for control also plays a crucial role in determining the likelihood for individuals to exhibit superstitious behaviours (Keinan, 2002; Wang et al., 2021). A desire

for control refers to the degree to which an individual is motivated to exert their control over an environment. Individuals with a strong desire for control tend to exhibit superstitious behaviour (e.g., knocking on wood) when exposed to a stressful situation more than individuals with a low desire for control (Keinan, 2002). The effect was explained by the notion that individuals with a strong desire for control are more motivated to exert their controls over the external environment when compared to individuals with a low desire for control. The same finding has been confirmed by Wang et al. (2021), which suggest that individuals tend to exhibit superstitious behaviours when encountering resource scarcity due to the high desire for control induced by resource scarcity.

In addition, past literature has investigated other psychological antecedents influencing individuals to engage in superstitious behaviours. According to Tobacyk et al. (1988), an individual's self-perceived ability in performing a task was found to be negatively correlated with superstitious behaviours. The finding supports an association between believing in internal locus of control and superstitious behaviours. In addition, Tobacyk et al. (1988) also found that an individual's tendency to focus on winning negatively influences superstitious behaviours. The findings resonate with Hamerman and Morewedge (2015), who confirmed that individuals are more likely to exhibit superstitious behaviour when their goals involve competencies evaluated by others (performance goal) rather than goals involving the internal perception of competencies (learning goal). In other words, performance goals tend to involve uncontrollable external factors, hence encouraging people to exhibit superstitious behaviours to gain control over them.

In conclusion, individuals are likely to engage in superstitious behaviours when they are highly motivated to gain control over an environment. The motivation is influenced by both desire for control and perceived control. As individuals engage in superstitious behaviours, they believe that they can actually control the environment. In addition, several psychological antecedents denoting a belief in the external locus of control influence individuals to behave superstitiously while psychological antecedents denoting the internal locus of control lead to the opposite effect.

2.3.3 Situational antecedents of superstitious behaviours.

Extant literature has identified a series of situational antecedents influencing superstitious behaviours. The majority of these factors indirectly encourage individuals to

exert their control over an environment. Resonating with the external locus of control, situational factors involving an uncertain external environment play a vital role in superstitious behaviour. Padgett and Jorgenson (1982) found that Germans during 1918-1940 were highly interested in superstitious related contents, which correlated with an uncertain economic and political situation in Germany. Keinan (1994) also found that Israeli residents living in the area exposed to missile attacks are likely to exhibit more superstitious behaviours than residents living in the area safe from missile attacks. The association between superstitious behaviours and uncertain environments was explained by Keinan (2002) as uncertain or uncontrollable environments significantly induce stress and reduce a sense of control, leading individuals to behave superstitiously to regain control.

A study investigating superstitious behaviours (e.g., using lucky charms or rituals) among university students showed that task difficulty and the importance of the task significantly contribute to superstitious behaviour among students (Rudski & Edwards, 2007). Athletes were also found to exhibit superstitious behaviours when experiencing psychological tension (Brevers et al., 2011). The study also found that the psychological tension is contributed by competitiveness and the importance of the competition. Lastly, consumers experiencing resource scarcity tend to have a strong desire for control and are more likely to exhibit superstitious behaviours (Wang et al., 2021). In short, situational factors that motivate individuals to exert their controls, such as uncertainty, the importance of the outcome, and resource scarcity, can influence individuals to engage with superstitions.

Similar to psychological antecedents, literature involving situational antecedents suggests a relationship between superstitious behaviours and an ability to control the situation. As the situation becomes uncertain, resulting in less perceived control for individuals, they are motivated to engage in superstitious behaviours to regain control over the situation. In addition, several situational antecedents which provide a reason for individuals to gain control over the situation (e.g., task importance) encourage individuals to exhibit superstitious behaviours in the same manner with a desire for control.

2.4 SUPERSTITIONS AND DECISION MAKING

Literature has discovered that believing in superstitions can substantially influence how individuals make decisions. In decision making, superstitions play a role as

an additional source of information to support decision making (Tsang, 2004).

This additional information can reduce cognitive burdens during the decision-making process as individuals have been found to make their decisions faster when involving relevant or accessible superstitions (Ang et al., 2014).

Concerning risk, exposing individuals to superstitions has been found to influence their preference over risk. Kramer and Block (2008) discovered that consumers who are reminded to think of Friday the 13th become more risk-averse. This behaviour can also be observed in the real estate market, which is widely perceived as a high-risk environment. Data from housing transactions in Singapore shows a significant drop in housing transactions during the inauspicious days due to belief associating these days with bad luck (He et al., 2019). In contrast, exposure to positive superstitions results in the opposite direction as it encourages individuals to be risk-takers instead. A study that investigated gambling behaviours among Thai consumers discovered consumers were likely to gamble more after receiving a positive superstitious item (e.g., lucky pen; Chinchanchokchai et al., 2017). The underlying mechanism has been explained by Jiang et al. (2009) as priming individuals with superstitions can temporarily change the perception of their luck and subsequently influence the estimation of the event likelihood. When exposed to positive superstitions (e.g., receiving a lucky charm), individuals temporarily believe their luck increases and then estimate the likelihood of achieving their desired outcome is higher. This results in an increased likelihood to engage in a risky decision.

In addition, a study conducted by Dong and Labroo (2018) further demonstrated that the influence of positive superstitious exposure over risk-taking behaviour does not occur with every superstitious individual equally. The study found superstitious individuals who merely believe in uncontrollable external forces (termed as passive superstition) are more likely to make a risky decision after getting exposed to positive superstitions. In contrast, getting exposed to positive superstitions would not change the risk-taking behaviour of individuals who actively perform superstitious rituals (termed as proactive superstition). As they believe in their own abilities to influence the outcomes through performing superstitious rituals already, individuals with proactive superstitions are risk-takers regardless of additional exposure to positive superstitions. In conclusion, exposing individuals to superstitions can substantially influence their decision-making regarding risk, and the influences can be varied across different individuals.

In decision making, superstitions act as an additional source of information to support the evaluation of an outcome. This is clearly evidenced in a decision involving risk, e.g., gambling. As individuals evaluate the probability of each outcome, engaging with superstitions can temporarily change their perception of outcome probabilities. Engaging with positive superstitions (e.g., receiving a lucky charm) leads individuals to believe that a higher probability of desired outcomes may occur, while engaging with negative superstitions (e.g., witnessing a bad omen) results in a belief that an undesired outcome is more likely to occur. To summarise, individuals who have been exposed to positive superstitions are likely to engage in risky decisions, while those who received a prime with negative superstitions tend to avoid risky decisions instead (Dong & Labroo, 2018; Kramer & Block, 2008).

2.5 SUPERSTITIONS AND CONSUMER BEHAVIOUR

As a culturally shared belief, superstition has been observed to influence consumers in different consumption stages, including searching, purchasing, and consuming. Literature has confirmed that consumers across different cultures assign superstitious meaning to product or service attributes, leading to a belief that products associated with positive superstitious meaning perform better than regular products counterparts (Block & Kramer, 2009; Kramer & Block, 2008). This can be observed from consumer preferences over products associated with positive superstitious meanings (e.g., a property with an address containing a lucky number) and consumer avoidance of products associated with negative superstitious meanings (e.g., clothes with an unlucky colour). Antipov and Pokryshevskaya (2015) investigated transactional data of the Russian real estate market and discovered that Russian consumers are willing to pay for apartments on the 7th floor significantly more than apartments from close floors (6th and 8th floors). The value of the apartments is greatly influenced by the superstitious meaning associated with the number 7 (lucky number). A similar pattern can be found in the Singaporean real estate market as He et al. (2019) discovered an apartment with an address containing number 8 (lucky number) had been sold for a premium price among Chinese consumers. The phenomenon stems from superstitious beliefs in Chinese culture associating number 8 with positive superstitious meaning as the pronunciation of number 8 in Mandarin sounds like the word “发 (Wealthy)” (Huang & Teng, 2009). The preference of number 8 among Chinese consumers was also observed by

Simmons and Schindler (2003) as they found number 8 to be substantially overrepresented in the advertised price, particularly in high-end products (Westjohn et al., 2017).

Interestingly, the preference over products with a positive superstitious meaning has been found to defy rational economic decisions. An empirical study conducted by Kramer and Block (2008) discovered Taiwanese consumers to prefer a portable radio with positive superstitious pricing (TW\$888) over the exact same portable radio with non-superstitious pricing (TW\$777) despite the positive superstitious pricing to be higher than non-superstitious pricing. Similarly, they also found Taiwanese consumers to prefer a digital camera with a more expensive price (TW\$6555.55) over the same product with an unlucky price (TW\$6444.44). However, this irrational economic decision can be observed only when superstitious beliefs influence purchase decisions only at a non-conscious level (Kramer & Block, 2008). In other words, when consumers consciously compare the price, the effect may not be observed.

In terms of new product adoption, superstitious beliefs have been found to influence consumer behaviours regarding product awareness and trial. Superstitious consumers can be classified into passive and proactive superstitious consumers (Hernandez et al., 2008). Passive superstitious consumers refer to consumers who believe an event in life is determined by fate or destiny. In contrast, proactive superstitious consumers refer to consumers who actively perform superstitious rituals on a regular basis. Passive superstitious consumers are less likely to seek information about a new product as they believe discovering a new product is predetermined by fate, while proactive superstitious consumers are likely to seek information for a new product as they are motivated to exert control over an environment (Hernandez et al., 2008). Furthermore, when trying a new product, passive superstitious consumers tend to judge their experience without the influence of others due to the belief in predetermined fate.

With regards to the consumption stage, superstitious attributes have been found to influence consumer satisfaction when experiencing product failure. Kramer and Block (2008) suggested that consumers are likely to rate their satisfaction toward a product with a positive superstitious attribute (e.g., a red rice cooker) less than a regular counterpart product (e.g., white rice cooker) when experiencing product failure. The underlying mechanism of this behaviour comes from an expected performance of the product as a superstitious attribute can influence the expected performance of the product (Kramer & Block, 2008). This results in consumers expecting a product with a positive superstitious attribute to perform better than

the regular counterpart and ultimately results in relatively less satisfaction when experiencing a product failure.

Lastly, consumers tend to experience anticipated embarrassment when purchasing a product with superstitious meaning under social presence. An empirical study conducted by Wang et al. (2017) discovered consumers anticipate more embarrassment when purchasing a product with superstitious meaning (e.g., lucky charm) under social presence compared to a private environment. This is influenced by public perception, which associates superstitions with incompetence (Wang et al., 2014), irrationality (Vyse, 1997), and an uneducated person (Aarnio & Lindeman, 2001; Torgler, 2007). Consumers who purchase a lucky charm are aware that others perceive their undesired images, which subsequently influences them to anticipate a feeling of embarrassment. Anticipating embarrassment also results in less purchase intention toward the product with superstitious meaning (Wang et al., 2017). Although the literature has shown how embarrassment can influence superstitious purchasing behaviours, little is known about the underlying mechanism.

The majority of literature involving superstitions in the consumption context focus on investigating how superstitious beliefs influence purchasing behaviour. Yet, relevant factors surrounding purchasing behaviours has received limited attention. Consumers across different cultures have been found to associate their superstitious beliefs with product attributes. By purchasing such a product, consumers believe a certain outcome is likely to occur. Purchasing a product associated with positive superstitious beliefs means desired outcomes are likely to occur, while purchasing a product associated with negative superstitions leads to a higher probability for undesired outcomes. This can be considered as superstitious beliefs are capable of influencing product value, which subsequently leads consumers to express their preferences. As superstitious beliefs influence an expected outcome, experiencing a discrepancy between the expected outcome and an actual outcome can lead consumers to be less satisfied. As a factor involving superstitious purchasing decisions, embarrassment is caused by a product with superstitious meaning and ultimately discourages consumers from purchasing the product.

2.6 EMBARRASSMENT

Embarrassment is a negative emotional state involving a transgression of behaviour that portrays an undesired impression of oneself. It has been studied with a different point of view over a context (Public or Private) and a source of appraisal between self and other

(Krishna et al., 2019). Early studies in the field considered embarrassment as a transgression of behaviours in public contexts involving an appraisal from others (Goffman, 1963; Modigliani, 1968). For instance, according to this view, consumers could experience embarrassment when observed by a sales clerk purchasing an embarrassing product from a shop. The view later has been expanded, and it has been suggested that embarrassment can occur in a private context with an appraisal from imagined others (Dahl et al., 2001; Edelman, 1981). According to the expanded view, the consumer can experience embarrassment from purchasing an embarrassing product even without being observed by a sales clerk. In this case, the appraisal can come from an imagined sales clerk. The notion of embarrassment in a private context was also supported by Higuchi and Fukada (2002), and Krishna et al. (2015). Based on these developments, it is widely accepted that embarrassment can occur in both public or private contexts, and a source of the appraisal can come from both self and others (Krishna et al., 2019). This study will focus on the idea of embarrassment induced by an appraisal from imagined others. Therefore, this study defines embarrassment following Edelman (1981) as an emotional state concerned with one's impression perceived by either real or imagined others regarding inappropriate behaviour.

For embarrassment to occur, several components are required. Edelman (1985) has proposed an underlying process to explain an occurrence for embarrassment. The process begins with a transgression of social rules or standards, which can be observed by either real or imagined others. The rules or standards are considered as the desired image that an individual wants to achieve. By knowing the desired image, an individual can recognise their action when it communicates a wrong image which can undermine an impression of the individual perceived by either real or imagined others. With a motivation to manage impressions, an individual then compares the current image with the desired image in which the discrepancy between the two images can result in experiencing embarrassment. Following embarrassment, an individual then displays certain behaviours, including blushing of the face and speech disturbance. Finally, an individual might attempt to exhibit face-saving behaviours to reduce the gap between the current image and the desired image.

2.7 EMBARRASSMENT IN CONSUMPTION

Marketing literature has provided an explanation of embarrassment in the consumption context. In the consumption context, consumers often experience

embarrassment when consuming a product or service deemed to be embarrassing as they pose a threat to consumer social identity by communicating undesired impressions about the consumer to others (Dahl et al., 2001; Kumar, 2008). An experience of embarrassment can occur in different stages of consumption ranging from purchasing to disposing of products (Lau-Gesk & Drolet, 2008). However, the purchasing stage has been found to be the most salient stage in terms of experiencing embarrassment (Moore et al., 2006).

In the purchasing stage, desired images derived from social rules or standards are applicable as the purchased products can signify an image of the consumer. By being aware of the desired image, consumers can recognise whether the products communicate the desired image. For instance, consumers with the desired image to be an intelligent individual may consider purchasing a textbook as it portrays the right image. In contrast, purchasing a lucky charm would portray the wrong image as the product is associated with a lack of education (Aarnio & Lindeman, 2005; Torgler, 2007). Hence, purchasing a lucky charm would threaten the impression that consumers want to portray.

By purchasing a product, consumers portray an image of themselves to others (Dahl et al., 2001). As consumers are motivated to manage their impression perceived by others, they compare their current perceived image and the desired image. When purchasing a textbook, consumers portray an image of a well-educated individual, which indicates a marginal discrepancy between the portrayed image and the desired image. On the other hand, if consumers decide to purchase a lucky charm instead, they portray themselves as uneducated individuals instead. This results in a substantial discrepancy between the portrayed image of a poorly educated individual and the desired image of a well-educated individual. The occurred discrepancy ultimately leads to an embarrassment. With a comparison between the image induced by the products and the desired image, consumers become aware of the discrepancy in their impression perceived by others and thus experience embarrassment.

Familiarity with a product can help reduce a feeling of embarrassment when purchasing the product. Literature investigating an influence of an embarrassing product on consumer embarrassment discovered that consumers who are more familiar with an embarrassing product tend to experience less embarrassment than consumers who are not familiar due to less reliance on external influences when purchasing familiar products (Brackett, 2004; Dahl et al., 2001; Moore et al., 2006). In other words, consumers who are familiar with an embarrassing product tend to be less concerned by how others perceive them. This results in them experiencing less embarrassment than consumers who are not

familiar with the product. However, in the case of embarrassment due to imagined others, an underlying mechanism can be differed. Literature suggested that consumers who are familiar with an embarrassing product are less likely to imagine an audience when purchasing the product and hence experience less embarrassment (Dahl et al., 2001).

Similar to embarrassments that occurred in regular contexts, literature has explained the phenomenon of embarrassment in consumption contexts. As consumers purchase an embarrassing product, they portray an image to others that can be different from the desired image they wish to portray (Dahl et al., 2001). By becoming aware that the impression perceived by others is different from the desired one, consumers experience an emotional state of embarrassment. In addition, the intensity of embarrassment can be influenced by relevant factors. Social presence during the purchasing stage can intensify embarrassment as the undesired impression can be perceived by others directly. In contrast, familiarity with purchasing an embarrassing product makes consumers less likely to be influenced by others. This makes consumers care less about how their impression is perceived by others and thus experience less embarrassment.

2.8 EMBARRASSMENT AND PURCHASE DECISION

The relationship between embarrassment and purchasing decisions has been widely investigated. Extant literature in the field demonstrates a significant relationship between embarrassment and purchasing decisions. A phenomenon of embarrassment in purchasing situations comprises two unique characteristics that distance it from embarrassment in other contexts. Firstly, it focuses on ‘anticipated embarrassment’ rather than ‘felt embarrassment’ (Krishna et al., 2019). The term refers to a feeling of embarrassment that an individual anticipates when he/she intends to behave in a way that would stimulate the embarrassment. Secondly, an embarrassment in purchasing situations focuses on embarrassment stimulated by embarrassing products (e.g., condoms and feminine hygiene products). An underlying mechanism of the relationship between anticipated embarrassment and purchasing decisions has been attributed to the theory of planned behaviour (TPB) proposed by Ajzen (1991). By applying the theory, consumers would plan their behaviours to alleviate embarrassment that they believe an embarrassing product would stimulate (Nichols et al., 2015). As consumers anticipate embarrassment from purchasing an embarrassing product, they then behave in a manner that would alleviate the embarrassment.

Different embarrassing products have been investigated, which different studies unanimously suggest that anticipated embarrassment discourages consumers from purchasing an embarrassing product. The majority of products deemed embarrassing often involve bodily and sexually related items, such as hair loss treatment and condoms (Krishna et al., 2019). A survey among millennial consumers discovered a range of embarrassing products, including sexual health products, feminine care products, digestive health products, foot care products, and weight loss products (Nichols et al., 2015). However, several products outside of the example above can also carry an embarrassing stigma. Iacobucci et al. (2002) found that hearing aid products have a stigma involving feeble and incompetency. They can thus induce anticipated embarrassment among hearing-impaired consumers, which results in decreasing purchase intention toward such products. Similarly, Wang et al. (2017) demonstrated that a superstitious related product (e.g., lucky charm) portrays an impression of unintelligence, resulting in consumers anticipating embarrassment when purchasing the product and hence less likely to purchase it.

In conclusion, consumers tend to anticipate feelings of embarrassment when purchasing embarrassing products (e.g. personal hygiene and sexually related products). As the products tend to associate with an undesired image, purchasing the product portrays an undesired impression of the consumers themselves to others. By being aware of the impression, consumers then anticipate feelings of embarrassment. This embarrassment can occur in both public and private settings, and the concern over undesired impressions can be influenced by both real and imagined others. Additionally, embarrassing products are not limited to personal hygiene or sexually related products. Consumers also tend to anticipate embarrassment when purchasing a product with superstitious meaning as the products are often associated with incompetence which portrays an undesired image. Nonetheless, the feeling of embarrassment can be mitigated by product familiarity, as consumers who are more familiar with the products tend to anticipate less embarrassment when purchasing the product.

2.9 REGULATORY ENGAGEMENT THEORY

Across the span of marketing literature, the term "Engagement" has been frequently used to explain consumer behaviour. In order to explain the relationship between engaging in purchase decisions and willingness to pay for a superstitious product, this study employs the

Regulatory Engagement Theory (RET) proposed by Higgins (2006, and Scholer and Higgins (2009). According to the theory, the term ‘Engagement’ is defined as a state of sustained concentration in an activity through involving or engrossing oneself with it (Higgins, 2006; Higgins & Scholer, 2009). If consumers are highly involved in a purchasing decision, the decision can be considered as having a high engagement strength (Mathmann et al., 2019).

RET suggests that a value evaluation of an object that has been used for pursuing goals can be influenced by engagement strength derived from the process of goal pursuit. (Higgins, 2006; Scholer & Higgins, 2009). While direct benefits of an object can influence the direction of the value evaluation to be either positive or negative, engagement strength plays a role as a directionless intensifier by reinforcing an attraction of the process or object involved during the goal pursuit. For example, a student who has a goal to pass an exam might consider purchasing a lucky charm as a means to pursue his/her goal. In this case, engagement strength derived from purchasing the lucky charm can intensify his/her motivation to pass the exam and subsequently influence the value he/she perceives for the lucky charm itself. After the theory was introduced by Higgins (2006), it has received substantial attention among scholars involving both theoretical discussion and implementation under different contexts. Although several aspects of the theory have been questioned by Fishbach (2009), Forster (2009), and Pham and Avnet (2009), the issues have been addressed and clarified by Scholer and Higgins (2009).

2.10 ENGAGEMENT AND PURCHASE DECISION.

Across the span of RET literature, the term “Engagement” has been frequently mentioned as an indicator of whether individuals pursue their goals in an appropriate manner. The term is defined as a state of sustained concentration in an activity through involving or engrossing oneself with it (Higgins, 2006; Higgins & Scholer, 2009). When consumers are highly involved in a purchasing decision, the decision can be considered as having a high engagement strength (Mathmann et al., 2019). For instance, a study conducted by Mathmann et al. (2019) discovered that the perceived value of prosocial products (e.g., environmentally friendly products) were higher when consumers experienced a purchasing process that followed their normative expectations (e.g., sale person performing a good handshake). The underlying mechanism of this phenomenon can be explained by using RET. As consumers who are exposed to prosocial products are motivated to engage

in normatively expected behaviours, purchasing from a store that meets such expectations would be considered as a proper way to purchase prosocial products and ultimately resulting in increasing the perceived value of the prosocial products (Mathmann et al., 2019).

Different studies in the past have adopted RET to explain the underlying mechanism of consumer motivations under different purchasing contexts. However, the theory has never been used to investigate purchasing behaviours involving superstitious beliefs. By adopting RET, this thesis can investigate the influence of anticipated embarrassment and superstitiousness on a superstitions-based purchase decision through engagement. For instance, consumers who report anticipated embarrassment from purchasing a product with superstitious meaning also indicate a significantly lower purchase intention toward the product than consumers who do not anticipate embarrassment (Wang et al., 2017). This study, hence, can explain the underlying mechanism of this phenomenon by applying RET. Consumers who experience embarrassment from purchasing a product with superstitious meaning may not consider the purchasing decision as a proper means to pursue their goals. This should result in consumers experiencing less engagement from the purchasing decision, resulting in a reduced value of the superstitious product followed by lowered willingness to pay.

2.11 CHAPTER SUMMARY

This chapter has reviewed extant literature involving superstitions, embarrassment, and engagement. An extensive literature demonstrated different factors influencing superstitious purchasing decisions. These factors include sociodemographic factors, psychological factors, and situational factors. However, superstitions literature has paid limited attention to emotional factors such as embarrassment. Although the literature has discovered that a product with superstitious meaning can be considered embarrassing as it is widely perceived to associate with incompetence and irrationality, individual differences in terms of superstitiousness were silent. Embarrassment literature suggested that consumers who are familiar with an embarrassing product tend to anticipate less embarrassment when purchasing the product. The same effect might be observed when accounting for superstitiousness in superstitious purchasing decisions. Additionally, Embarrassment literature has utilised the theory of planned behaviour to explain the influence of anticipated

embarrassment on superstitious purchasing decisions. Nonetheless, the literature has not approached the mechanism from a motivational point of view before. By applying the regulatory engagement theory, the underlying mechanism of superstitious purchasing decisions can be explained through embarrassment and engagement. These research gaps will be further demonstrated in chapter 3, which focuses on demonstrating research questions and outlining proposed hypotheses.

Chapter 3: Hypotheses Development

The chapter presents the process of a research question and hypothesis developments. Firstly, two research questions are outlined. The questions are formed by reviewing a gap in the existing literature. The first research question aims to investigate the influence of superstitiousness on anticipated embarrassment, while the second question focuses on the underlying motivational mechanism of a superstitious purchasing decision. After that, to address the research questions, four hypotheses are proposed.

3.1 RESEARCH QUESTIONS

Despite extensive studies in embarrassment and purchasing decisions, little is known about the underlying mechanism of the relationship between anticipated embarrassment and superstitious purchasing decisions from a motivational point of view. Embarrassment literature suggested that embarrassment caused by an embarrassing product can discourage consumers from purchasing the product (Brackett, 2004; Dahl et al., 2001; Moore et al., 2006). The same phenomenon is also found in a superstitious context, as consumers anticipate a feeling of embarrassment when purchasing a product with superstitious meaning, which subsequently discourages them from purchasing the product (Wang et al., 2017). The phenomenon can be explained by using the theory of planned behaviour (Ajzen, 1991), which suggests individual behaviours are influenced by anticipation of what they would experience when engaging with that particular behaviour. By applying the theory to explain consumers' response to an embarrassing product, literature suggested that consumers consciously plan their purchasing decisions to avoid experiencing the embarrassment which they anticipate the product would generate (Nichols et al., 2015). Nonetheless, an understanding of the underlying mechanism from a motivational point of view remains limited. In providing better explanations, a motivational point of view that considers purchasing decisions as a process of goal pursuit can be a more suitable approach in explaining the decision (Fiske & Taylor, 1991; Higgins, 2012). To further investigate the underlying mechanism of the relationship between an anticipated embarrassment and a superstitious purchasing decision, the researcher asks:

Research Question 1: How does anticipated embarrassment induced by a product with superstitious meaning influence a superstitious purchasing decision?

Although the literature has recognised that a product with superstitious meaning is embarrassing (Wang et al., 2017), research incorporating individual differences is scarce. An individual experiences embarrassment when portraying an undesired impression to others (Dahl et al., 2001; Krishna et al., 2019). As superstitious beliefs are often associated with a lack of education (Aarnio & Lindeman, 2001; Torgler, 2007) and irrationality (Vyse, 1997), individuals who engage in superstitious behaviours are perceived by others to be incompetent (Wang et al., 2014). This leads consumers to experience embarrassment when purchasing a product with superstitious meaning. By purchasing the product, consumers are aware that they are portraying an impression of being an irrational and incompetent consumer to others. This results in them experiencing embarrassment when purchasing a product with superstitious meaning. However, literature discovered that consumers tend to experience less embarrassment when they are more familiar with the product (Brackett, 2004; Dahl et al., 2001; Moore et al., 2006). In a superstitious context, superstitiousness indicates how much an individual believes in superstitions. It also connotes a degree of familiarity toward superstitious items (e.g. lucky charm) as evidenced by the use of superstitious items as an indicator of superstitiousness (Fluke et al., 2014; Huang & Teng, 2009). To have a clear picture of how different consumers anticipate feelings of embarrassment from a product with superstitious meaning, it is important to incorporate individual differences when investigating their perceptions. Specifically, how superstitiousness influences consumers to anticipate embarrassment when purchasing a product with superstitious meaning. Hence, this study addresses the following questions:

9-Research Question 2: How does superstitiousness influence consumers to anticipate embarrassment when purchasing a product with superstitious meaning?*

3.2 HYPOTHESES DEVELOPMENT

Despite the fact that existing literature has suggested an association between a superstitious purchasing decision and an anticipated embarrassment, evidence for this relationship remains scarce. Superstitions literature demonstrated that consumers are likely to anticipate embarrassment when purchasing a product related to superstitious beliefs (Wang et al., 2017). The effect is influenced by the perception which associates superstitious individuals with incompetence and irrationality (Vyse, 1997; Wang et al., 2014). As

suggested by embarrassment literature, consumers experience feelings of embarrassment when they realise that they are portraying an impression which is perceived by others to be an undesired image (Dahl et al., 2001; Krishna et al., 2019). When engaging with a product with superstitious meaning, consumers portray an impression of being an incompetent and irrational consumer. By realising how others perceive them, consumers experience embarrassment. For example, consumers who purchase a lucky charm from a store might anticipate embarrassed feelings as they realise how others perceive their superstitious behaviours. Hence, compared with a product with non-superstitious meaning, this study expects consumers to anticipate more embarrassment when purchasing a product with superstitious meaning. Therefore, the following hypothesis is proposed;

Hypothesis 1 (H₁): Consumers anticipate high embarrassment when purchasing a product with a superstitious meaning (vs. a non-superstitious meaning).

In addition, this study expected individual differences in superstitiousness to influence how consumers anticipate embarrassment when purchasing a product with superstitious meaning. Fundamentally, consumers experience embarrassment when purchasing an embarrassing product (Dahl et al., 2001; Krishna et al., 2019). However, consumers who are more familiar with the product tend to experience less embarrassment (Brackett, 2004; Dahl et al., 2001; Moore et al., 2006). As superstitiousness connotes a tendency for an individual to use a lucky charm (Huang & Teng, 2009; Wang et al., 2012; Wiseman & Watt, 2004), consumers with high superstitiousness are expected to be more familiar with a product with superstitious meaning and subsequently experience less embarrassment when purchasing the product. Thus, highly superstitious consumers are expected to anticipate less embarrassment compared to low superstitious consumers when purchasing a product with superstitious meaning. Formally, this study proposes;

Hypothesis 2 (H₂): Consumers with more (vs. less) superstitiousness anticipate low (vs. high) embarrassment when purchasing a product with a superstitious meaning.

With regards to superstitious purchasing decisions, the study proposed a relationship between a product with superstitious meaning and willingness to pay. As suggested by the embarrassment literature, empirical evidence from different studies demonstrated that

consumers tend to avoid a product that is considered to be embarrassing (Dahl et al., 2001; Iacobucci, 2002). As consumers anticipate feelings of embarrassment prior to purchasing the product, they consciously avoid the product to reduce the embarrassment (Nichols et al., 2015). The same mechanism could be applied to a product with superstitious meaning as the literature demonstrated that consumers anticipate more embarrassment when purchasing the product (Wang et al., 2017). The anticipated embarrassment could motivate consumers to avoid purchasing a product with superstitious meaning. For example, consumers who anticipate feelings of embarrassment from purchasing a product with superstitious meaning might indicate little intention to purchase the product to avoid the embarrassment. As a product with superstitious meaning can be considered as an embarrassing product, this study proposed that consumers may express their willingness to pay for a product with superstitious meaning to be less than a product with non-superstitious meaning. Such that;

Hypothesis 3 (H₃): Consumers are willing to pay for a product with superstitious meaning less than a product with non-superstitious meaning.

To extend the findings suggested by Wang et al. (2017), this thesis proposed that when consumers anticipate a feeling of embarrassment from purchasing a product with superstitious meaning, they experience less engagement strength with the purchasing decision, which leads to a decline in willingness to pay toward the product. By applying regulatory engagement theory, the study suggested that both anticipated embarrassment and engagement could explain a relationship between a product with superstitious meaning and willingness to pay. According to the theory, an individual using an appropriate means to pursue the goal will be more engaging in the process of pursuing the goal. Subsequently, the engaging goal pursuit will motivate the individual to pursue the goal and increase the value of the mean itself (Higgins, 2006; Scholer & Higgins, 2009). For example, consumers who aim to excel in a job interview might believe that a lucky charm could help them to achieve their goals. As they consider the lucky charm to be an appropriate method to achieve their goals, acquiring the lucky charm would make the process to excel in the job interview more engaging. This then strongly motivates consumers to excel in the job interview and also value the lucky charm more. This study proposed that anticipated embarrassment and engagement could mediate the effect of a product with superstitious meaning on willingness to pay. Therefore, the following hypothesis is proposed;

Hypothesis 4 (H₄): The relationship between a product with superstitious meaning and consumers' willingness to pay is explained by a sequential mediation of anticipated embarrassment and engagement.

3.3 CHAPTER SUMMARY

This chapter has formally proposed research questions and hypotheses. To address the gap in embarrassment and superstition literature, this study proposed to investigate individual differences in terms of superstitiousness and how it can influence anticipated embarrassment in consumers when purchasing a product with superstitious meaning. Additionally, the study also suggested a further investigation into an underlying mechanism of the relationship between anticipated embarrassment and superstitious purchasing behaviours from a motivational point of view. The study proposed four hypotheses to examine the influence of superstitiousness and the relationship between anticipated embarrassment and superstitious purchasing decisions in response to the research questions. The hypotheses are tested by the data in which the process will be presented in the next chapter, *Research Design*.

Chapter 4: Research Design

This chapter presents different aspects of research design ranging from the philosophical approach supporting the utilised method to survey design. Firstly, the chapter presents the paradigm that underpins the research method in this study. Secondly, sampling strategy is discussed. Thirdly, a plan for data collection is outlined. This is also followed by the plan for data analysis and consideration toward ethics in conducting research.

4.1 RESEARCH APPROACH

To understand how consumers engage with a product with superstitious meaning, it is crucial to understand how the researcher perceived reality through a paradigm, ontology, and epistemology concept. A research paradigm is defined as a fundamental frame used for observing and understanding reality (Babbie, 2015). There are three major paradigms in social science, each with a unique perspective on society's reality. These include positivist social science, interpretive social science, and critical social science. This study focused on positivist social science as the paradigm underpinning this research. The positivist social science can be broadly defined as a natural science as it associates with rationality and a belief in a single existing truth (Neuman, 2014). This led us to ontology, defined as a belief regarding the fundamental nature of reality (Neuman, 2014). By adopting the positivist social science, the researcher's belief regarding reality aligned with the realist perspective, which suggests that reality exists independently from interpretation. To learn about reality, the study then considered epistemology which refers to the method to learn about reality (Neuman, 2014). As a positivist researcher, the researcher observed reality through quantifiable data as it provides empirical evidence to verify a causal hypothesis. By taking all these together, the researcher believed that a quantitative research method is a suitable method for this study.

This study aimed to explain consumers' superstitious behaviours under the positivist paradigm. The researcher approached research questions by using a quantitative research method to observe objective reality while minimising subjective influence from the researcher. The method involves precisely measuring variables to test hypotheses (Neuman, 2014). Based on the characteristics of the method, this study focused on utilising an experiment as it allowed the study to focus and measure relevant variables by limiting the influence of other variables. To test hypotheses, the researcher collected numerical data and performed statistical analyses to verify the proposed hypotheses.

4.2 SAMPLING STRATEGY

In terms of the unit of analysis, this study focused on an individual consumer as a unit of analysis. Unit of analysis is defined as What or Who being examined to holistically describe all of the units and compare differences among them (Babbie, 2015). The unit of analysis in this study was defined as an individual consumer of at least 18 years of age.

Although probability sampling is widely accepted as an ideal sampling strategy, this study utilised a purposive sampling strategy by selecting Chinese consumers as a sample group to represent the population. Theoretically, there are two types of sampling strategies, probability and non-probability sampling strategies. The fundamental difference between the two strategies is based on the use of probability theory, as stated by the names. In an ideal situation, the probability sampling strategy is preferred as it allows researchers to select a sample group that contains the same variation as the population, which ultimately provides a useful description of the total population (Babbie, 2015). However, as the study population of this research was a consumer, it was impractical to select a sample that can reflect the same variation of every consumer. For practical reasons, this study adopted a purposive sampling strategy instead. The purposive sampling strategy suggests that the observation unit can be selected based on the researcher's judgment in terms of usefulness and representativeness (Babbie, 2015). As the study aimed to explain consumer superstitious purchasing behaviours, representing the sample must allow the behaviours to be apparent for observation. Suggested by relevant literature, Chinese consumers are highly superstitious and more likely to exhibit superstitious behaviours than their Western counterparts (Simmons & Schindler, 2003; Pratt & Kirillova, 2019; Tsang, 2004). These characteristics endorse the suitability of Chinese consumers in representing the consumer population. Hence, this study adopted a purposive sampling strategy focusing on Chinese consumers due to an apparent superstitious behaviour.

The sampling frame of this study was Chinese consumers over 18 years of age who have registered in the database of the online platform WJX. WJX is an online survey platform, equivalent to Amazon Mechanical Turk, with access to a wide range of Chinese consumers. The platform randomly sent an invitation to participate in an online experiment to users who were over 18 years of age and residing in China. The invitation was sent out to the registered users randomly across China without bias toward any particular group or location. Users who received an invitation were able to accept or decline to participate in an online experiment without penalty. Users who decided to participate in the online experiment would receive a credit equivalent to RMB 5 as a compensation reward.

This study utilised G*Power (Faul et al., 2009) as a method to determine the required sample size for performing statistical analyses and verifying the proposed hypotheses. To calculate the required sample size, the method demanded three key information, including statistical power ($1-\beta$), effect size (f^2), and significance criterion (α). Statistical power is defined as a probability that a study will correctly reject the null hypothesis (Cohen, 1992). A standard of statistical power to detect a true effect of the interested phenomenon in social science is set at 0.8 (Cohen, 1988). Effect size refers to the discrepancy between the null hypothesis and the alternate hypothesis, in which it can be broadly estimated as small, medium, and large (Cohen, 1992). The medium effect size means the effect is apparent for any careful observers. As this study aimed to observe superstitious purchasing behaviours, which is deemed observable, the effect size was considered medium ($f^2 = 0.15$). Lastly, the significance criterion refers to the probability of the results to be falsely positive, which the standard of significance criterion in social science is at 0.05 (Cohen, 1992). Based on the criteria, the G*power method suggested the minimum sample size for this study to be 92.

4.3 DATA COLLECTION

Based on the proposed hypotheses, this study investigated the effect of anticipated embarrassment on superstitious purchasing behaviours. This study observed the phenomenon by comparing purchasing behaviours between a product with superstitious meaning and non-superstitious meaning. As the goal was to determine an effect of a product with superstitious meaning on anticipated embarrassment and superstitious purchasing behaviours, an experiment was a suitable method for data collection. An experiment involves purposely controlling study elements by incorporating theoretically relevant variables and removing irrelevant variables from an analysis (Neuman, 2014). The method allows the researcher to manipulate the circumstance to replicate an effect or phenomenon which may be difficult to observe in the real world. Conducting an experiment allowed this study to observe participants' responses toward a product with superstitious meaning, which might not be an easily observed phenomenon. In addition, the method was suitable for observing a small phenomenon of effect on an individual scale, such as purchasing behaviours. Hence, the researcher conducted an experiment by comparing how participants react differently across a product with superstitious meaning and a product with non-superstitious meaning.

The researcher established the reliability of the data collection method through a clear conceptualisation of relevant constructs and using a multiple-item scale to measure each construct. Reliability refers to the quality of a data collection method that can produce the same result when used repeatedly under identical or very similar situations (Neuman, 2014). In other words, a reliable data collection method that has been used repeatedly under identical conditions should always produce the same result. Although there are several approaches to establish reliability, this study focused on defining a clear concept of relevant constructs and used multiple indicators to measure each construct. In terms of a clear conceptualisation, this study adopted conceptual definitions established by relevant literature. For instance, this study adopted a definition of the term 'Engagement' established by Higgins (2006) and Higgins and Scholer (2009) as a state of sustained concentration in an activity through involving or engrossing oneself with the activity. This allowed the study to measure sustained concentration as an indicator of engagement. Furthermore, this study also used multiple items to measure each construct to capture different aspects of the constructs. For instance, to measure anticipated embarrassment, participants were asked to report on multiple items, including embarrassment, comfort, and awkwardness. In conclusion, this study established reliability by using multiple indicators to measure different aspects of the explicitly defined constructs.

To improve measurement validity, the researcher used scales developed by relevant literature to measure the constructs. In the context of measurement, validity refers to the accuracy of the measurement in reflecting reality (Neuman, 2014). This means a measurement with validity should accurately reflect the actual value of the construct. By using established scales, measurement validity was improved in two ways. Firstly, as the established scales have been widely adopted by relevant literature, the scale is widely accepted as an accurate measurement among professionals in the research community. Secondly, as the scales have been applied across different bodies of literature, the scales have been repeatedly confirmed to predict the constructs accurately. For instance, the study utilised scales measuring anticipated embarrassment developed by Dahl et al. (2001). The scales have been widely adopted by Blair and Roese (2013), Krishna et al. (2015), and Wang et al. (2014). In sum, this study achieved a high validity in data collection by using established measurements.

4.4 SURVEY DESIGN

An experiment was conducted consisting of four stages to investigate how anticipated embarrassment influences superstitious purchasing behaviours. Full details of the experiment can be found in Appendix A. In the first stage, upon starting the experiment, participants were exposed to a short story involving COVID-19. The process was intended to induce stress and a sense of uncertainty, as suggested by literature that individuals are more likely to exhibit superstitious behaviours in an uncertain situation (Case et al., 2004). The COVID-19 story is presented below.

The situation of COVID-19 in China has been alleviated, and many cities have resumed their normal life again. However, there is no evidence confirming that the virus is completely eradicated. A number of people can be infected without showing any symptoms, yet they are capable of spreading the virus to others. Multiple studies also discovered patients who have been re-infected. While everything may appear to be normal, a chance for you or people around you to get infected is not zero.

In addition, to confirm the effectiveness of the COVID-19 story, participants were asked to respond to two questions relating to their COVID-19 experience. The first question was administered before presenting the COVID-19 story, in which participants were asked whether they knew about COVID-19 before (Have you ever heard about COVID-19?). After reading the COVID-19 story, participants then responded to a question whether they felt concerned with the situation (To what extent are you concerned about contracting COVID-19?). Participants who responded ‘Not at all’ were excluded from the data analysis.

In the second stage, participants were randomly assigned to one of three experimental conditions. The three conditions represent a product with superstitious meaning as a treatment condition and two control conditions. Participants assigned to the treatment condition would encounter two cushions, a square and a round cushion, with the word “幸运 (Lucky)” on each of them. This condition was referred to as the lucky condition. Images of cushions in the lucky condition are presented in Figure 2. Similarly, each of the two control conditions consisted of two cushions. One of the control conditions had the word “开心 (Happy)” on the cushions, while the other control condition had two plain colour cushions. They were referred to as the happy condition and the plain colour condition. Images of cushions in the happy and plain colour conditions are illustrated in Figure 3 and Figure 4, respectively. The plain colour condition was designed to be a control condition for a

superstitious meaning as it was deemed to be relatively less superstitious than the lucky condition. On the other hand, the happy condition was designated to control a confounding variable involving aesthetic design. In other words, the happy condition was included in determining whether the effect is caused by aesthetic design as it was designed to replicate the lucky condition without a superstitious meaning. This was supported by a pre-test survey which confirmed that Chinese consumers consider the word “幸运 (Lucky)” to be associated with superstitious meaning more than the word “开心 (Happy)” ($t(126) = 5.28, p < .05$). In addition, the cushions were presented, along with a description describing the quality of the cushions. In the description, the square-shaped cushion was referred to as cushion A, while the round-shaped cushion was cushion B. The description was intended to create a sense of decision making, which will be further elaborated in the third stage. The description remained identical across the three experimental conditions. The description is presented below;

Cushion A; Soft and durable cushion with square shape (50×50 cm). The cushion is made from cotton with a velvet texture. The inside of the cushion is filled with polyester. The cushion has received a 5-star rating on Taobao.

Cushion B; Soft and durable cushion with a round shape (50cm in diameter). The cushion is made from cotton with a velvet texture. The inside of the cushion is filled with polyester. The cushion has received a 3-star rating on Taobao.

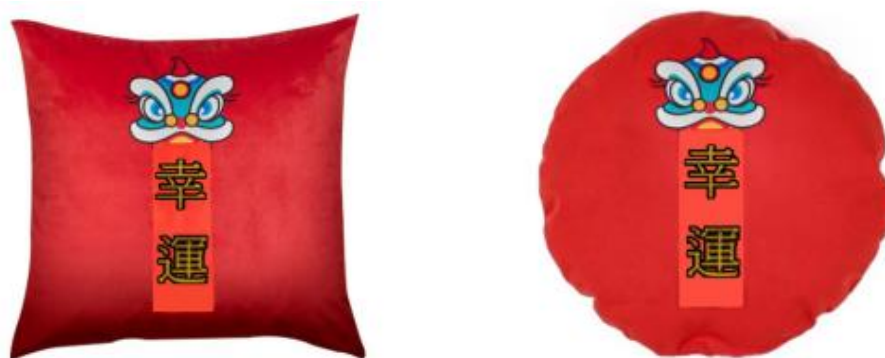


Figure 2; Lucky condition (Square-shaped and round-shaped cushions with the word "幸运 (Lucky)").

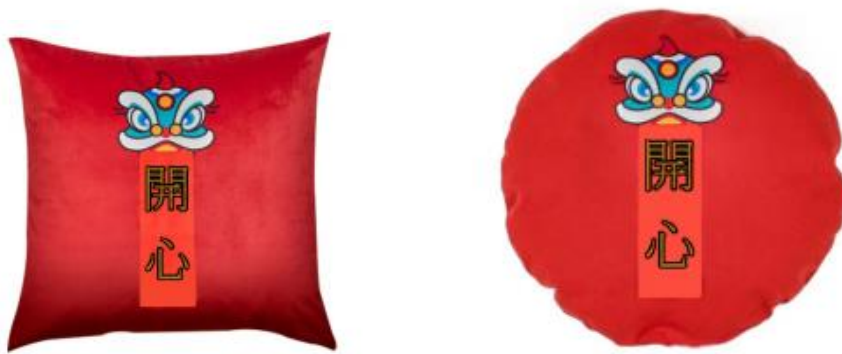


Figure 3; Happy condition (Square-shaped and round-shaped cushions with the word "开心 (Happy)").

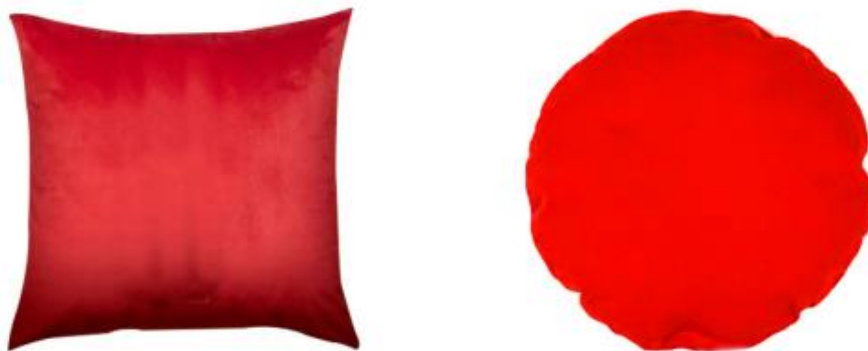


Figure 4; Plain colour condition (Square-shaped and round-shaped cushions with plain red colour).

In the third stage, participants were asked to make a purchasing decision through a bidding process. The method was designed in an incentive induced manner to measure willingness to pay. They were asked to imagine that they have encountered the assigned cushions on an online store to replicate an actual purchase situation. After that, participants indicated their preferences between cushion A and cushion B. The description was provided to assist in deciding and persuading participants to choose cushion A. To avoid confounding effects from different cushions, participants who chose cushion B were excluded from the data analysis. After that, participants were instructed to purchase their chosen cushions through an auction. At the beginning of the auction, participants received a pocket credit of RMB 100 (equivalent to AUD 20) which they could use to bid for the cushion as they desired. The bid proposed by participants were then compared to a pre-determined reserve price. If the proposed bid was equal to or higher than the reserve

price, the auction would be considered as successful, and participants could receive the cushion and the changes. In contrast, if the proposed bid was lower than the reserve price, the auction would be considered as failed, and the pocket credit could be returned to the participants in full. However, prior to the auction, participants were entered into a lucky draw. If participants won the lucky draw, the reward and credits from the auction would be converted into an actual cushion and money as a bonus reward for participating in the experiment. For instance, if participants won both the auction and the lucky draw, they would receive both actual cushion and money as a bonus reward. If participants won only the lucky draw, they would receive the full amount of pocket credit as actual money. However, if participants did not win the lucky draw, the reward from the auction would be treated as a hypothetical scenario.

In the auction process, to encourage honest responses, participants reported their bids twice. After proposing the first bid, participants were informed that they had been given a second chance to bid again in which they would be able to change the proposed bidding price or remain the same (Wertenbroch & Skiera, 2002). Before finishing the third stage, participants responded to three questions to determine whether they understood the bidding instructions. Participants who failed in any of the questions were excluded from the data analysis.

In the fourth stage, participants responded to several questions to measure relevant variables, including anticipated embarrassment, engagement, and superstitiousness. Firstly, participants were asked to rate their experience on a 7-item scale involving the purchase decision (e.g. Irrelevant – Relevant). The question, proposed by Bruner (2013), consisted of 15 items intended to measure engagement strength. In addition, participants also responded to a question involving embarrassing experiences from the purchase decision on a 7-items scale (How did you feel when choosing the cushion?). The question was proposed by Dahl et al. (2001) and consisted of 3 items (e.g., Not embarrassed at all – Very embarrassed). Participants then answered six questions on a 6-item (Strongly disagree – Strongly agree) scale to measure a degree of belief in Chinese superstitions (Wang et al., 2012). The questions include items such as “Carrying a lucky charm will bring good luck”. Then, participants responded to demographic questions, including gender, age, and education. Lastly, participants were asked whether they had checked the price of the cushion during the bidding stage. Participants who indicated that their bids were influenced by price checking were excluded from the data analysis.

4.5 DATA ANALYSIS PLAN

To investigate how superstitiousness and anticipated embarrassment influence superstitious purchasing behaviours, this study conducted both linear regressions and moderating mediation analysis using PROCESS macro for SPSS (Hayes, 2018). The plan for data analysis can be divided into five stages. The first stage addressed the data cleaning process, while the remaining four stages addressed each proposed hypothesis.

Prior to performing the data analyses, two dummy variables were created to test the effect of the treatment condition compared to the two controlled conditions. The independent variable in this study consisted of three experimental conditions, in which the lucky condition was considered as a treatment condition. In contrast, both happy and plain colour conditions were considered as control conditions. Under this circumstance, two dummy variables were created by using the lucky condition as a reference value. The first dummy variable, X₁, represents a comparison between the happy condition and the lucky condition (0 = Lucky condition, 1 = Happy condition). The second dummy variable, X₂, represents a comparison between the plain colour condition and the lucky condition (0 = Lucky condition, 1 = Red condition).

In the first stage, the researcher performed a data cleaning process by excluding participants who failed to meet statistical standards from the data analyses. Firstly, the researcher determined missing values in variables by using a frequency table in which participants with missing values were excluded. Secondly, as the experiment involved a piece of information about COVID-19 as a stimulus for uncertainty, participants who reported of no prior knowledge about COVID-19 nor concern about COVID-19 were excluded from the data analyses. Thirdly, due to the complicated instruction for the auction and the lucky draw, participants who provided wrong answers for the instruction check questions were excluded. Lastly, to avoid an influence from a confounding factor, participants who chose cushion B were excluded.

In response to the H₁, this study performed a multiple linear regression analysis to determine the effect of a product with superstitious meaning on anticipated embarrassment. The first analysis considered anticipated embarrassment as a dependent variable, while the two dummy variables, X₁ and X₂, were considered as independent variables.

To determine the moderating effect of Superstitiousness on the relationship between a product with superstitious meaning and anticipated embarrassment, as proposed in H₂, the researcher performed PROCESS macro model 1 for SPSS (Hayes, 2018). In this analysis,

anticipated embarrassment was treated as a dependent variable, while X1 and X2 were treated as independent variables. In addition, Superstitiousness was considered as a moderator affecting the relationship between the independent variable and the dependent variable.

Regarding H3, the researcher conducted a multiple linear regression analysis to demonstrate a direct relationship between a product with superstitious meaning and consumer willingness to pay. The two dummy variables, X₁ and X₂, representing an effect of a product with superstitious meaning compared to control conditions, were considered independent variables. As the researcher was intended to observe an influence of a product with superstitious meaning on purchasing behaviours, willingness to pay was treated as a dependent variable.

Lastly, in order to investigate the mediating effect of anticipated embarrassment and engagement on the relationship between a product with superstitious meaning and purchasing behaviours, the researcher conducted the PROCESS macro model 85 for SPSS (Hayes, 2018). Both dummy variables X₁ and X₂ were treated as independent variables, while willingness to pay was deemed as a dependent variable. The relationship was also mediated by two sequential mediators, including anticipated embarrassment and engagement. Anticipated embarrassment was suggested to affect engagement, while engagement was proposed to affect willingness to pay. In addition, the analysis included superstitiousness as a moderator affecting the influence of both X₁ and X₂ on anticipated embarrassment.

4.6 ETHICAL CONSIDERATIONS

Before conducting the data collection process, the study obtained ethics approval from the Office of Research Ethics and Integrity (OREI), QUT. The study was granted ethics approval with the approval number 2000000581. This suggested that the data collection process has been ethically conducted with minimising harm to participants. Upon starting the experiment, participants were presented with an information sheet that outlined the study in detail. The details consist of study objectives, benefits, potential risk, confidentiality, and contact details of the research team. The study's objectives demonstrated that this experiment aimed to investigate how consumers make purchase decisions in an uncertain environment. As participants were exposed to the COVID-19 story, a limited psychological risk was expected. To minimise the risk, participants were informed of public counselling services available in China. Details regarding the counselling service were provided again after

participants finished the experiment. Although participants might not directly obtain the benefits of this study, they could learn how they behave in this context. Regarding participants' privacy, this study collected only non-identifiable data (age and gender, for instance), which indicates that this study would not be able to identify any participant. Lastly, participants were informed of the contact details of the research team. This allowed participants to ask for further information or provide feedback regarding the study.

4.7 CHAPTER SUMMARY

This chapter outlined an overview of the research methodology utilised in this study. Aligning with the positivist point of view, this study focused on quantitative research methods by using the experiment as a tool for data collection. The chapter also demonstrated the data collection method, including sampling technique and experimental design. A non-probability sampling technique was used by focusing on Chinese consumers as a representative sample. In terms of the experimental design, this study simulated superstitious purchase decisions and measured relevant variables via an online platform WJX. The chapter then discussed a plan for data analysis involving multiple linear regression and Hayes PROCESS macro. Finally, the ethical considerations of the study were demonstrated. The following chapter 5 will demonstrate data analysis and findings of the study.

Chapter 5: Data Analysis

This chapter presents statistical results as evidence to prove the proposed hypotheses. Firstly, the data collection process is presented to demonstrate the process of obtaining the data. This is followed by the pre-test data collection, which supports the design of the three experimental conditions. Secondly, the data preparation process and sample characteristics are outlined. Lastly, the statistical results following each hypothesis is presented.

5.1 DATA COLLECTION

This study conducted two rounds of data collection, which consisted of the pre-test and the main test. The pre-test data collection aimed at determining consumer perception of symbols associated with luck. In contrast, the main-test data collection aimed to verify the proposed hypotheses. The data was obtained through an online experiment via the platform WJX, which specializes in Chinese consumers. This study focused on Chinese consumers as suggested by the literature that Chinese consumers are highly superstitious (Simmons & Schindler, 2003; Pratt & Kirillova, 2019; Tsang, 2004).

In the pre-test, participants were asked to rate their perception of symbols regarding their association with luck. For the main test, participants were randomly assigned to one of the three experimental conditions in which they were asked to engage in a purchase decision. After that, participants then responded to several questions regarding prior decisions. The data obtained for this study is considered anonymous as participants were asked to provide only non-identifiable data. Each case was recorded as a numerical ID, allowing this study to identify the case without compromising privacy.

5.2 PRE-TEST

This study conducted a short survey with 127 Chinese consumers to determine consumer perceptions toward superstitious symbols as to whether the word “幸運”(Lucky) is considered a lucky symbol. This study compared a lucky word “幸運 (Lucky)” and a neutral word “開心 (Happy)” to determine which one is perceived to be more strongly associated with luck. The result from paired sample t-test shows that the word “幸運 (Lucky)” ($M =$

6.17, SD = .81) is considered to be more strongly associated with luck ($t(126) = 5.28, p < .05$) than the word “開心(Happy)” ($M = 5.52, SD = .81$). The result is illustrated in Table 1. The findings demonstrate that Chinese consumers associate the word “幸運(Lucky)” with a superstitious symbol. Hence, the word “幸運(Lucky)” can be considered as a superstitious meaning associated with luck.

	Mean	SD	t	df	Sig (2-tailed)
幸運 (Lucky) is a lucky word	6.17	.81	5.283	126	.00
開心(Happy) is a lucky word	5.52	1.36			

**Table 1; Results of a One-Sample T-Test
Comparing Perceived Association between Symbols and Luck.**

5.3 DATA PREPARATION

To prepare the data for statistical analysis, this study excluded 95 invalid cases in total from the analyses. In the first stage, this study utilised six questions to exclude disqualified samples from data analyses. As the experiment involved the COVID-19, participants who showed no knowledge about COVID-19 prior to participating in the experiment would be excluded. No case was excluded in this stage. After reading a story about COVID-19, participants were asked whether they had a concern over the COVID-19 situation. The question was intended to confirm the effect of the COVID-19 story. This resulted in nine cases being excluded from the analysis as they reported having no concern regarding COVID-19. As for the cushion preference, no participants preferred cushion B, which resulted in no case being excluded. Furthermore, as the experiment involved a combination of auction and lucky draw, three questions were designed to determine whether participants understood the instructions provided. No case was excluded at this stage. Lastly, participants reported whether the experiment was affected by an external source of information. Eighty-one participants, who were excluded from the analysis, reported that they performed an online price check which affects their bidding decision. This resulted in 481 cases remaining before exclusion based on missing values and outliers.

With 481 cases remaining, this study further prepared the data by excluding cases containing missing values and outliers among relevant variables. These variables included experimental conditions, anticipated embarrassment, engagement strength, superstitiousness and willingness to pay. No case was excluded in regard to a missing value as no missing value was detected among relevant variables. Regarding outliers, this study considered both univariate and multivariate outliers. A univariate outlier refers to the observation of those falling at the outer range of the distribution in each variable (Hair, 2019). The researcher utilised a box plot to determine the observation falling at the outer range in each variable to determine univariate outliers. The boxplot results suggested three observations to be extremely high in anticipated embarrassment. Hence, these observations were considered univariate outliers, and the cases containing these observations were excluded. In addition, the researcher determined and excluded cases containing multivariate outliers. A multivariate outlier refers to any observation that falls outside the range of other observations when considering relevant variables altogether (Hair, 2019). The multivariate outlier can be detected by using the Mahalanobis D^2 measure, which suggested that two cases were excluded from the analysis. In conclusion, the data preparation process resulted in 476 cases for data analyses.

Lastly, the researcher converted three experimental conditions into two dummy variables to test the effect of a product with superstitious meaning. The treatment condition, lucky condition, was considered as a reference for the other two control conditions. The first dummy variable, X_1 , quantified the comparison between happy condition and lucky condition (0 = Lucky condition, 1 = Happy condition). The second dummy variable, X_2 , represented the comparison between the plain colour condition and lucky condition (0 = Lucky condition, 1 = Plain colour condition).

5.4 SAMPLE CHARACTERISTICS

The valid sample group for this study can be defined as a Chinese consumer over 18 years old who is concerned by the COVID-19 situation at the time of data collection and was not influenced by an external source of information during the experiment ($N = 476$, $M_{Age} = 40$). The sample group consisted of both male and female participants (275 female/201 male, $SD = .49$). In terms of age, the majority of the sample was between 26-35 years (17.65%). As for education, the majority of the participants held a bachelor degree (71.8%). Lastly, the descriptive analysis showed that participants were in equal numbers assigned to the three

experimental conditions as participants in the lucky condition accounted for 33.4%, the happy condition accounted for 35.9, and the red condition accounted for 30.7%. A summary of the sample characteristics is provided in Table 2.

Characteristics (N = 476)	N	%
Gender		
Male	201	42.2
Female	275	57.8
Others	0	0
Education		
None	0	0
Junior high school	2	0.4
Senior high school	22	4.6
College	66	13.9
Bachelor degree	342	71.8
Master degree	42	8.8
Doctorate	2	0.4
Age		
18 - 25 years	135	28.36
26 - 35 years	234	49.16
36 – 45 years	84	17.65
46 – 55 years	19	3.99
56 – 65 years	3	0.63
66+ years	1	0.21
Experimental Conditions		
Lucky Condition	159	33.4
Happy Condition	171	35.9
Plain Colour Condition	146	30.7

Table 2; Characteristics of the Sample Group.

5.5 RESULTS

H₁; Consumers anticipate more embarrassment when purchasing a product with a superstitious meaning (vs. a non-superstitious meaning).

The researcher performed a linear regression analysis with two dummy variables, X₁ and X₂, to determine an influence of a product with superstitious meaning on anticipated embarrassment. The results showed that an influence of both X₁ ($\beta = -.03$, $p = .61$) and X₂ ($\beta = .01$, $p = .87$) over anticipated embarrassment are not significant. The statistical results are

illustrated in Table 3. The results suggested that an anticipated embarrassment induced by the lucky condition is not significantly different from an anticipated embarrassment induced by either happy condition or plain colour condition. This study concluded that purchasing a product with superstitious meaning does not result in higher anticipated embarrassment. Hence, H₁ was not supported.

DV = Anticipated embarrassment

	B	Std Error	β	Sig
Constant	3.06	.06		.00
Happy Condition	-.04	.08	-.03	.61
Plain Colour Condition	.01	.08	.01	.87

Table 3; Regression Coefficients of Happy Condition and Plain Colour Condition on Anticipated Embarrassment

H₂; High (vs. Low) superstitious consumers anticipate less embarrassment when purchasing a product with a superstitious meaning.

The researcher performed PROCESS macro model 1 for SPSS (Hayes, 2018) to investigate the influence of superstitiousness over the relationship between a product with superstitious meaning and anticipated embarrassment. Two dummy variables, X₁ and X₂, were treated as independent variables in the analysis. In addition, anticipated embarrassment was considered a dependent variable, while superstitiousness was considered a moderator affecting the relationship between the two dummy variables and anticipated embarrassment.

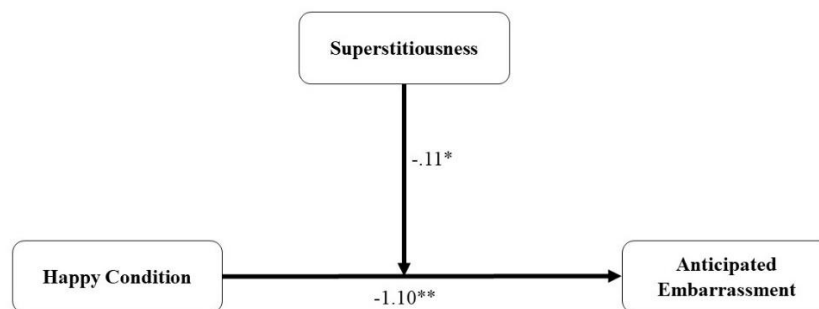
The analysis incorporated multiple regression into the process and showed a significant influence of both X₁ and X₂ on anticipated embarrassment when controlling for superstitiousness. The results showed that X₁ significantly affects anticipated embarrassment ($\beta = -1.1, p < .05$). This suggested that, when controlling for superstitiousness, participants in the lucky condition anticipate more embarrassment than participants in the happy condition. Likewise, the results showed that X₂ also significantly affects anticipated embarrassment ($\beta = -.84, p = .00$). This suggested that participants in the lucky condition anticipate more embarrassment than participants in the plain colour condition when controlling for superstitiousness.

DV = Anticipated embarrassment

	B	Std Error	t	95% CI
Happy Condition (X ₁)	-1.10	.30	-3.61	[-1.70, -.50]
Plain Colour Condition (X ₂)	-.84	.30	-2.86	[-1.43, -.26]
Superstitiousness (M)	-.11	.05	-2.13	[-.22, -.01]
Interaction 1(X ₁ x M)	.25	.07	3.60	[.12, .39]
Interaction 2(X ₂ x M)	.21	.10	3.03	[.07, .35]

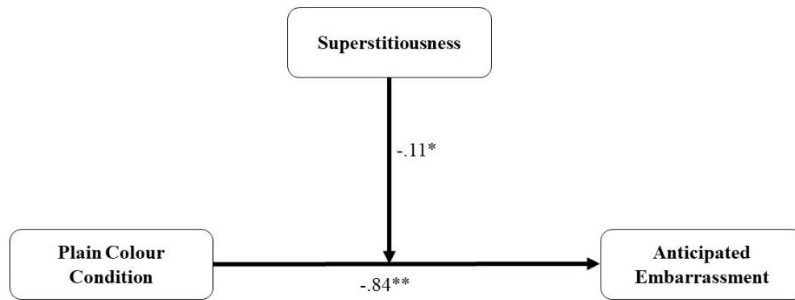
Table 4; Regression Table of Effects on Anticipated Embarrassment from PROCESS Macro Model 1 (Hayes, 2018)

In support of the moderating effect of superstitiousness, the result showed an interaction effect of both X₁ and X₂ with superstitiousness on anticipated embarrassment. The study discovered that an interaction effect between X₁ and superstitiousness on anticipated embarrassment is significant ($\beta = .25, p < .05$). Similarly, an interaction effect between X₂ and superstitiousness on anticipated embarrassment was found to be significant ($\beta = .21, p < .05$). The results suggested that superstitiousness significantly moderates the effect of the lucky condition when compared with the two control conditions on anticipated embarrassment. The diagrams of path effect size are presented in Figures 5.1 and 5.2.



*p < .05, **p < .01, ***p < .001

Figure 5.1; Path Effect Sizes (β) for Moderation Model of Happy Condition (H₂)



*p < .05, **p < .01, ***p < .001

Figure 5.2; Path Effect Sizes (β) for Moderation Model of Plain Colour Condition (H_2)

By considering the conditional effect of both X_1 and X_2 at various degrees of superstitiousness, this study discovered that superstitiousness changes how anticipated embarrassment is affected by the lucky condition when compared with both happy and plain colour conditions. At low superstitiousness (Sup = 2.83), the results showed that the effects of both X_1 ($\beta = -.38$, 95% CI [-.62, -.14]) and X_2 ($\beta = -.25$, 95% CI [-.49, -.01]) on anticipated embarrassment were negative. These suggested that, among participants with low superstitiousness, participants in the lucky condition anticipate significantly more embarrassment when compared to participants in either the happy or the plain colour condition. In contrast, this study discovered that an effect of both X_1 ($\beta = .26$, 95% CI [.03, .49]) and X_2 ($\beta = .28$, 95% CI [.04, .51]) on anticipated embarrassment became positive among highly superstitious participants (Sup = 5.33). These demonstrated that highly superstitious participants anticipate embarrassment in the lucky condition less than happy or plain colour conditions. The mean score of anticipated embarrassment is presented in Table 4. The researcher concluded that highly superstitious consumers anticipate less embarrassment than consumers with low superstitiousness when purchasing a product with superstitious meaning. Hence, H_2 was supported.

Estimated Mean of Anticipated Embarrassment

	Superstitiousness		
	Sup = 2.83	Sup = 4.33	Sup = 5.33
Lucky Condition	3.20	3.03	2.92
Happy Condition	2.82	3.04	3.18
Plain Colour Condition	2.95	3.10	3.20

Table 5; Mean Score of Anticipated Embarrassment at Different Degrees of Superstitiousness.

H₃; Consumers are willing to pay for a product with superstitious meaning less than a product with non-superstitious meaning.

The researcher performed a linear regression analysis to investigate the direct effect of the two dummy variables, X₁ and X₂, on willingness to pay. The results, illustrated in Table 5, showed that both X₁ ($\beta = -.004$, $p = .94$) and X₂ ($\beta = .04$, $p = .48$) did not significantly influence willingness to pay. The results suggested that participants in the lucky condition did not report willingness to pay higher than participants in either happy or plain colour conditions. The study showed no evidence to suggest that a product with superstitious meaning results in a higher willingness to pay when compared with a product with non-superstitious meaning. Hence, the evidence did not support H₃.

DV = Willingness to pay

	B	Std Error	β	Sig
Constant	39.49	1.68		.00
Happy Condition	.18	2.34	-.004	.94
Plain Colour Condition	1.71	2.43	.04	.48

Table 6; Linear Regression Showing an Effect of Happy Condition and Plain Colour Condition on Willingness to Pay.

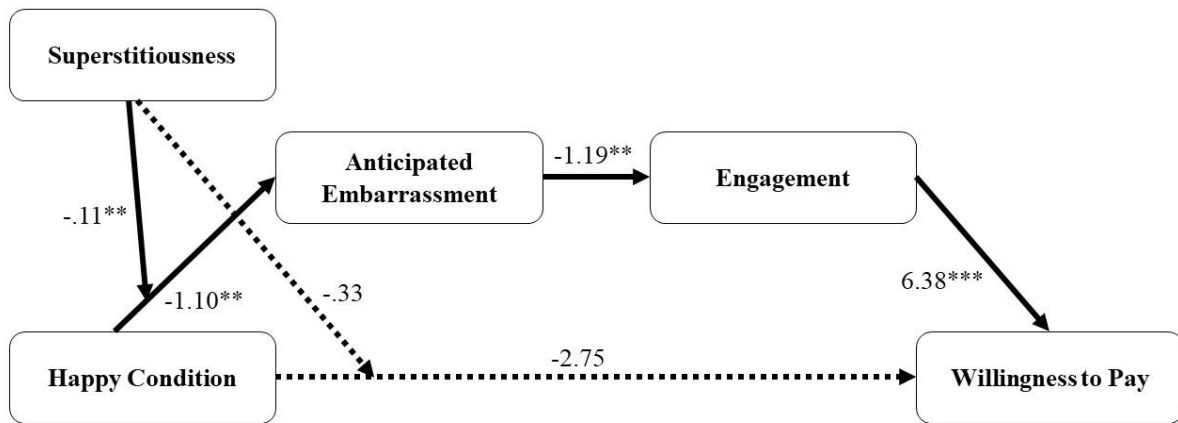
H₄; The relationship between a product with superstitious meaning and consumers' willingness to pay is explained by a sequential mediation of anticipated embarrassment and engagement.

Intending to investigate the proposed hypothesis, this study performed PROCESS macro model 85 for SPSS model 85 (Hayes, 2018). The researcher investigated both direct and indirect effects of the dummy variables X₁ and X₂ on willingness to pay. The indirect

effect was proposed to be a sequential mediator of anticipated embarrassment and engagement. Furthermore, the model also allows us to observe a moderating effect of superstitiousness on both direct and indirect effects.

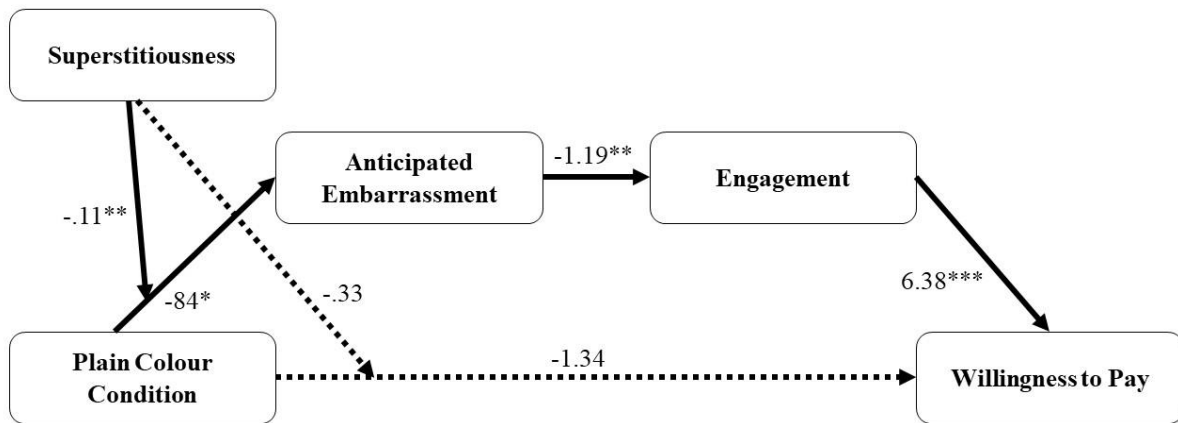
In terms of the direct relationship between the two dummy variables and consumer willingness to pay, the results showed that both X_1 ($\beta = -2.75$, $p = .76$) and X_2 ($\beta = -1.34$, $p = .88$) do not significantly affect willingness to pay. The results demonstrated that the willingness to pay reported by participants in the lucky condition were not significantly different from the willingness to pay reported by participants in both happy and plain colour conditions. The results also showed that interaction effects between superstitiousness and both X_1 ($\beta = .62$, $p = .76$) and X_2 ($\beta = .08$, $p = .62$) on willingness to pay are not significant. In other words, superstitiousness did not influence the direct effect of the lucky condition on willingness to pay.

The study also considered the sequential mediation effect of anticipated embarrassment and engagement. The influence of anticipated embarrassment on engagement was found to be significant and negative ($\beta = -.18$, $p < .05$), which indicated that an increase in anticipated embarrassment would reduce engagement. Additionally, the influence of engagement on willingness to pay was found to be positive ($\beta = 6.38$, $p < .05$). It demonstrated that an increase in engagement would also result in an increase in willingness to pay. The indirect effect of X_1 on willingness to pay was found to be significant when superstitiousness is low (Sup = 2.83, 95% CI [.08, 1.03]) and high (Sup = 5.33, 95% CI [-.74, -.03]). The results from X_1 demonstrated that the indirect effect of the lucky condition on willingness to pay was negative in a group of participants with low superstitiousness, while the indirect effect became positive in the group of high superstitious participants. On the other hand, the indirect effect of X_2 on willingness to pay was significant only when superstitiousness is high (Sup = 5.33, 95% CI [-.76, -.05]). It indicated that an indirect effect of the lucky condition on willingness to pay was negative in the group of the highly superstitious participant only. Additionally, the results suggested that the moderated mediation effect of both X_1 (95% CI [-.66, -.07]) and X_2 (95% CI [-.56, -.05]) on willingness to pay are significant. When considering the variables altogether, these statistical results showed that superstitiousness moderates an effect of the happy condition on anticipated embarrassment. The diagrams of path effect size are presented in Figures 6.1 and 6.2.



*p < .05, **p < .01, ***p < .001

Figure 2.1; Path Effect Sizes (β) for Moderated Mediation Model of Happy Condition (H₄)



*p < .05, **p < .01, ***p < .001

Figure 2.1; Path Effect Sizes (β) for Moderated Mediation Model of Plain Colour Condition (H₄)

Considering evidence holistically, this study resulted in two critical findings. Firstly, an effect of both dummy variables on willingness to pay was an indirect only mediation effect. The effect was found to be mediated by sequential mediators of anticipated embarrassment and engagement. Secondly, the indirect effect was found to be moderated by superstitiousness. The evidence supported the notion that participants with low superstitiousness reported willingness to pay in the lucky condition to be higher than happy and red conditions. In contrast, highly superstitious participants reported willingness to pay in the lucky condition higher than happy and red conditions. The evidence supports that a

relationship between a product with superstitious meaning and consumer willingness to pay is mediated by anticipated embarrassment and engagement. Hence, H₄ was supported.

5.6 CHAPTER SUMMARY

To test the proposed hypotheses, this study conducted a linear regression analysis and PROCESS macro in SPSS (Hayes, 2018). The study expected an anticipated embarrassment to be directly influenced by a product with superstitious meaning (H₁). In fact, the hypothesis was not supported as the data suggested that the indirect influence was not significant. Secondly, the study predicted that superstitiousness would play a role in determining anticipated embarrassment (H₂). This study discovered that consumers with low superstitiousness tend to anticipate more embarrassment when purchasing a product with superstitious meaning than a product with a non-superstitious meaning. In contrast, highly superstitious consumers are likely to anticipate less embarrassment when purchasing a product with superstitious meaning instead. Hence, the hypothesis was supported. Thirdly, the expectation of a direct effect between a product with superstitious meaning and willingness to pay (H₃) was not supported. However, evidence was found to support the role of anticipated embarrassment and engagement as an indirect effect of a product with superstitious meaning on willingness to pay (H₄). The results suggest that a product with superstitious meaning indirectly influences consumers' willingness to pay via the sequential mediators of anticipated embarrassment and engagement, while the indirect effect was moderated by superstitiousness. In the next chapter, Chapter 6 will discuss the findings, implications, limitations and recommendations for future studies.

Chapter 6: Discussion and Conclusion

This chapter presents a summary and implication of the study. This chapter begins by outlining the findings and elaborating on their implications in both theoretical and practical domains. This is then followed by an outline of the potential limitations of the study. Lastly, the chapter provides suggestions for future research to address the limitations and investigate further relevant topics.

6.1 SUMMARY OF FINDINGS

This study aimed to investigate the influence of anticipated embarrassment and superstitiousness on superstitious purchasing decisions. The researcher conducted an online experiment with Chinese consumers by replicating an actual purchasing situation to observe how consumers anticipate a feeling of embarrassment when purchasing a product with superstitious meaning and how it influences their purchasing decisions.

The findings suggested that a product with superstitious meaning might not always be perceived as embarrassing. To further explain the existing literature, which suggested that a product with superstitious meaning is considered embarrassing (Wang et al., 2017), the study discovered that such perception is also influenced by superstitiousness. In fact, the data suggested that there is no significant relationship between a product with superstitious meaning and anticipated embarrassment. However, the relationship became significant when the analysis controlled for superstitiousness. The study found that superstitiousness plays a significant role in influencing anticipated embarrassment by moderating the effect of a product with superstitious meaning on anticipated embarrassment. The results showed that a product with superstitious meaning leads to an increasing anticipated embarrassment among consumers with low superstitiousness. On the contrary, among highly superstitious consumers, a product with superstitious meaning led to a decreasing anticipated embarrassment instead. These findings suggested that superstitiousness can change whether consumers consider a product with superstitious meaning to be embarrassing.

However, the contradicted results from H1 might be influenced by a study design. To verify the relationship between a product with superstitious meaning and anticipated embarrassment (H1), the researcher performed a linear regression which demonstrated a non-significant relationship between a product with superstitious meaning and anticipated embarrassment. The results were found to be contradicted with

results provided by PROCESS macro model 1 for SPSS (Hayes, 2018), which demonstrated a significant relationship between a product with superstitious meaning and anticipated embarrassment when controlling for superstitiousness. Additionally, the results were found to contradict Wang et al. (2017), which suggests that consumers anticipated more embarrassment when purchasing a product with superstitious meaning. These contradictions might be contributed by an experimental design involving an embarrassment in a private context. Although an individual can anticipate embarrassment in private context from both self-appraisal and other appraisals (Krishna et al., 2015; 2019), embarrassment literature remained silent on how the differences between the two sources of embarrassment can influence an underlying mechanism of anticipated embarrassment.

As the experiment involved private embarrassment, a potential explanation for the contradicted results between H1 and H2 could be contributed by a difference between self-appraisal and other appraisals. When individuals anticipate a feeling of embarrassment due to self-appraisal, they compare an impression perceived by themselves against their desired impressions (Krishna et al., 2015; 2019). For instance, consumers who intend to purchase a lucky charm from an online store might anticipate a feeling of embarrassment as they perceive the behaviour to be irrational, which contradicts to desired impressions of being a rational consumer. On the other hand, when individuals anticipate embarrassment from other appraisals, they compare how others would perceive them against their desired impressions (Dahl et al., 2001; Krishna et al., 2019). In this context, consumers would anticipate embarrassment as they imagine others would perceive them as irrational, contradicting their desired impression. Based on the difference between the two sources of embarrassment, the findings of H1 and H2 might be influenced by this difference. The reason that the relationship between a product with superstitious meaning and anticipated embarrassment became significant only when controlling for superstitiousness might be due to the source of embarrassment being self-appraisal rather than others appraisal. Since the source of embarrassment is stemmed from self-appraisal, superstitiousness might influence how individuals perceive themselves. Highly superstitious consumers might not perceive an act of purchasing a lucky charm as irrational and do not anticipate embarrassment as their self-perceived impression does not contradict their desired impression. In contrast, consumers with low superstitiousness might anticipate embarrassment as they perceive the act as

irrational and experience the difference between self-perceived impression and desired impression.

The potential source of embarrassment in this study could also explain the difference between findings from H1 and the findings demonstrated by Wang et al. (2017). Based on the findings from H1, the relationship between a product with superstitious meaning and anticipated embarrassment was not significant. The findings were considered to be contradicted with Wang et al. (2017), which suggested the relationship to be significant. However, the contradicted findings might be influenced by the difference in the sources of embarrassment. A study conducted by Wang et al. (2017) clearly focused on anticipated embarrassment induced by other appraisals as the study designed experiments to include other individuals when observing a superstitions-based purchasing decision. In contrast, as the experiment utilised online purchasing, a potential source of embarrassment in this study could come from self-appraisal instead. This difference in terms of a study design might lead to the relationship between a product with superstitious meaning and anticipated embarrassment being non-significant without controlling for superstitiousness.

The difference in perception among consumers with different degrees of superstitiousness in terms of anticipated embarrassment can be attributed to product familiarity. Consumers experience embarrassment when they are aware that an impression perceived by others is undesirable (Dahl et al., 2001), and purchasing a product with superstitious meaning can portray such an impression. However, literature pointed out that product familiarity can alleviate the effect on embarrassment as consumers tend to experience less embarrassment when they are more familiar with the product (Dahl et al., 2001; Moore et al., 2006). When consumers become more familiar with a product, they are less likely to be influenced by how others perceive them. In the case of highly superstitious consumers, high superstitiousness can imply that they are familiar with the product with superstitious meaning. This means highly superstitious consumers are less likely to anticipate embarrassment from a product with superstitious meaning and thus do not consider it as embarrassing.

By considering the influence of a product with superstitious meaning on purchase decisions, the results showed that a product with superstitious meaning has no direct influence on willingness to pay. This was inconsistent with the third hypothesis, which expects the direct effect to be significant. The current evidence is inconclusive to determine the cause of this result as an unaccounted variable might influence it.

Lastly, the findings showed that an indirect effect of a product with superstitious meaning on willingness to pay could be explained by the sequential mediating effect of anticipated embarrassment and engagement. This means a product with superstitious meaning can influence anticipated embarrassment, which subsequently influences engagement and ultimately influences willingness to pay. Furthermore, as the relationship between a product with superstitious meaning and anticipated embarrassment was moderated by superstitiousness, the indirect effect of a product with superstitious meaning on willingness to pay was influenced by superstitiousness. The indirect effect was found to be positive when superstitiousness was high, while the indirect effect turned to be negative at low superstitiousness. Highly superstitious consumers were found to anticipate less embarrassment and experience more engagement, resulting in increased willingness to pay. In contrast, consumers with low superstitiousness anticipated more embarrassment, which subsequently experienced less engagement. This resulted in decreasing willingness to pay.

To explain the underlying mechanism of the indirect effect, this study adopted the regulatory engagement theory. The theory suggests that when individuals are pursuing goals using appropriate means, they feel more engaged and become more motivated to pursue the goals (Higgins, 2006; Higgins & Scholer, 2009). This subsequently influences the individuals to value the utilised means more. As suggested by a substantial reduction in anticipated embarrassment, highly superstitious consumers were likely to consider purchasing a product with superstitious meaning as an appropriate means to pursue their goals. This intensified engagement, which subsequently increased their motivation to pursue the goals, led them to evaluate the product with superstitious meaning to be more valuable and ultimately reported a higher willingness to pay. In contrast, consumers with low superstitiousness might not consider a product with superstitious meaning as an appropriate means. This can be observed from an increase in anticipated embarrassment when purchasing a product with superstitious meaning. When consumers with low superstitiousness used a product with superstitious meaning as a means to pursue their goals, they felt less engaged and less motivated to pursue the goals. This resulted in a decreasing value and willingness to pay for a product with superstitious meaning.

6.2 THEORETICAL IMPLICATIONS

Based on the findings, this thesis contributed to embarrassment literature by providing insight toward an underlying mechanism of the relationship between anticipated

embarrassment and superstitions-based purchase decisions. In the past, literature has attempted to explain the influence of embarrassment on purchasing decisions by using the theory of planned behaviour (Dahl et al., 2001; Nichols et al., 2015) and impression management (Wang et al., 2017). By investigating the underlying mechanism from a motivational point of view, the researcher employed the regulatory engagement theory (Higgins, 2006; Higgins & Scholer, 2009) to explain the underlying mechanism. The findings showed that an influence of anticipated embarrassment on superstitions-based purchasing decisions followed the regulatory engagement theory. Consumers who consider a product with superstitious meaning as appropriate means to pursue their goals, suggested by less anticipated embarrassment, tended to be more motivated to pursue the goals and more engaged with the purchasing decision. This high engagement subsequently led them to value the means, a product with superstitious meaning, more. In contrast, consumers who anticipated more embarrassment were unlikely to consider a product with superstitious meaning as an appropriate means to pursue their goals. This resulted in them being less motivated to pursue the goals and less engaged with the purchasing decision. Ultimately, the consumers perceived the value of the product to be less. As the thesis approached the relationship from a motivational point of view, this thesis contributed to embarrassment literature by furtherly explaining the underlying mechanism of the relationship between anticipated embarrassment and a superstitions-based purchasing decision.

Secondly, the thesis contributed to superstitions literature by suggesting an influence of superstitiousness on how consumers anticipate embarrassment when purchasing a product with superstitious meaning. This study extended the notion that consumers anticipate embarrassment when purchasing a product with superstitious meaning (Wang et al., 2017) by suggesting that the anticipated embarrassment is also determined by a degree of superstitiousness. Highly superstitious consumers were found to anticipate less embarrassment, compared to consumers with low superstitiousness. These suggested that a product with superstitious meaning might not always be an embarrassing product for every consumer as it depends on individual differences in superstitiousness.

Additionally, the thesis also provided evidence supporting the notion that superstitiousness is positively associated with a tendency to exhibit superstitious behaviour in purchasing context. Although different literature has attempted to propose superstitiousness as an indicator to measure a tendency to behave superstitiously (Huang & Teng, 2009; Wang et al., 2012; Wiseman & Watt, 2004), empirical evidence supporting the measurement under

purchasing context is limited. As the finding suggested that consumers differences in terms of superstitiousness can influence their tendency to purchase a product with superstitious meaning, the thesis provides empirical evidence to support superstitiousness as an indicator of a tendency to behave superstitiously under purchasing context.

6.3 PRACTICAL CONTRIBUTIONS AND RECOMMENDATIONS

Considering the findings holistically, this thesis provided three important practical contributions for businesses marketing a product with superstitious meaning. Firstly, consumers tend to perceive the value of a product with superstitious meaning to be higher when they consider the product as a proper means to pursue their goals. Secondly, businesses should consider anticipated embarrassment as a barrier discouraging consumers from purchasing a product with superstitious meaning. Lastly, superstitiousness should be accounted in developing segmentation and targeting strategies.

By applying the regulatory engagement theory, businesses can increase a perceived value of a product with superstitious meaning by emphasising the product as a suitable means for their goal pursuits. Following evidence suggested by the data, consumers are likely to value a product with superstitious meaning more when they consider the product as a proper means to pursue their goals. It provides an opportunity for businesses marketing a product with superstitious meaning to increase the perceived value of the products by suggesting how the product can be a proper means in customers' goal pursuits. For instance, a study conducted by Rudski and Edwards (2007) suggests that university students tend to exhibit superstitious behaviours prior to a difficult exam. This suggests that businesses can market their products with superstitious meaning to university students by emphasising their potential in helping with an important exam.

As demonstrated by the findings, businesses should consider anticipated embarrassment as a barrier in marketing a product with superstitious meaning. The findings showed that consumers tend to anticipate a feeling of embarrassment when purchasing a product with superstitious meaning and subsequently get discouraged from purchasing the product. The findings are also supported by past literature, which suggested that consumers anticipated a feeling of embarrassment when purchasing a product with superstitious meaning under a public environment (Wang et al., 2017). To reduce such barrier, businesses can

utilise marketing communication to normalise and minimise embarrassment related to the product. For instance, an adult diaper company aimed to shift cultural norms by emphasising that wearing a different kind of underwear is normal (Krishna et al., 2018). Additionally, businesses can consider product framing to reduce anticipated embarrassment. For example, in 2018, Timberland introduced a collection of boots incorporating superstitious symbols in the design. Rather than introducing the boots as a lucky boot, Timberland framed them as boots inspired by a lunar new year. The framing allowed the products to avoid the notion of being superstitious products and subsequently reduce anticipated embarrassment among consumers. An image of the products is presented in Figure 7.

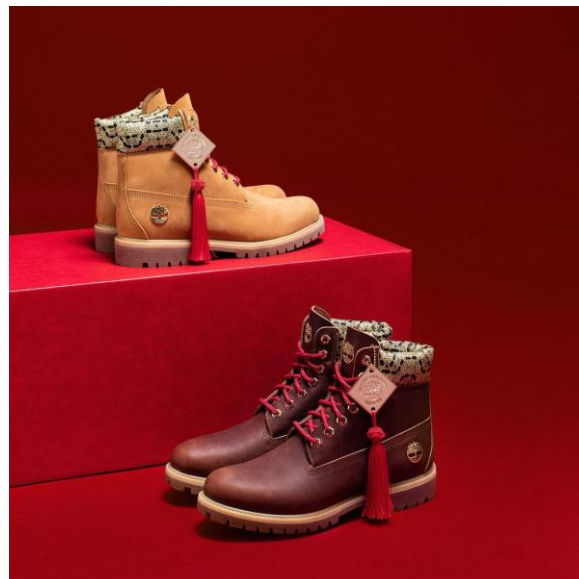


Figure 7; Timberland Lunar New Year Inspired Boots in 2018 (Timberland Australia, 2018).

6.4 LIMITATIONS

To investigate an influence of superstitiousness and embarrassment on superstitious purchasing decisions, the study was based on two assumptions. Firstly, the researcher assumed that consumers would anticipate embarrassment when purchasing a product with superstitious meaning in a private environment. As part of the experiment, the study initially aimed to simulate an actual purchasing decision to achieve external validity. However, due to COVID-19 restrictions, the experiment was changed to a hypothetical online scenario to accommodate an online experiment. Although the literature suggested that embarrassment

can occur in a private environment as consumers imagine how others would perceive them (Krishna et al., 2015; 2019), empirical evidence in the superstitious context was limited. Secondly, the researcher assumed that superstitiousness is associated with a familiarity toward a product with superstitious meaning. A high superstitiousness should suggest a high familiarity toward a product with superstitious meaning and vice versa. Superstitiousness can be referred to as a tendency to believe in superstitions as high superstitiousness suggests the person greatly believe in superstitions. Furthermore, literature that proposed a superstitiousness scale often incorporate the use of a superstitious item as an indicator of superstitiousness (Huang & Teng, 2009; Wang et al., 2012; Wiseman & Watt, 2004). Based on the literature, the researcher assumed that a highly superstitious person should be highly familiar with a product with superstitious meaning. The findings of this study, hence, were developed on certain assumptions.

Additionally, participants might experience mental depletion from answering the questionnaires due to the complexity of the auction and lucky draw process. As a part of the experiment, participants were asked to purchase a product as a method to measure willingness to pay. Initially, the researcher aimed to measure willingness to pay in an incentive-compatible manner (Wertenbroch & Skiera, 2002), which allows participants who offer sufficient bidding prices to actually receive a product. However, the method could lead to a significant amount of financial cost exceeding the research budget provided by the university. In response to this challenge, the researcher incorporated lucky draw into the process to control and limit the financial cost of the study. This resulted in a complicated purchasing process that required lengthy instruction. Although participants understood the instruction provided, the process potentially demanded substantial attention and might mentally exhaust participants prior to engaging with other sections of the experiment. Although the consequence of this limitation is inconclusive, it is worth paying attention to it for future studies.

6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

Future studies are recommended to address the limitations and replicate the study under less restriction. To address the limitation regarding the assumption of embarrassment influenced by imagined others, researchers should conduct a field experiment to determine an occurrence of embarrassment instigated by imagined others. A field experiment could manipulate participants to consider purchasing a product with superstitious

meaning and measure the source of embarrassment. Furthermore, future studies should investigate an association between superstitiousness and familiarity toward a product with superstitious meaning. Researchers can replicate this study and incorporate superstitious product familiarity into the framework. By doing so, researchers can observe an influence of superstitious product familiarity and compare it with superstitiousness. Thirdly, future research should consider a simpler method to measure willingness to pay. Although simulating an actual purchase decision could achieve high external validity, the process could potentially compromise other aspects of the study. Using a simpler method would allow future studies to obtain a good measurement without burdening participants.

Considering potential topics for further investigations, future studies should investigate relevant topics to provide a more holistic insight. As the nature of superstitious belief is a socially shared belief, the researcher was required to focus on a sample with the same cultural background. This led the researcher to recruit Chinese consumers as a representative sample group. Although the researcher believed that Chinese consumers are a good representative sample, as supported by literature suggesting a high tendency to exhibit superstitious behaviours (Simmons & Schindler, 2003; Pratt & Kirillova, 2019; Tsang, 2004), the generalisability of the findings could be further improved by replicating the study with different consumer groups. Additionally, superstitions literature has demonstrated superstitious behaviours across different cultures (Sierra et al., 2015; Antipov & Pokryshevskaya, 2015; Pratt & Kirillova, 2019). Hence, future studies are recommended to investigate how anticipated embarrassment and superstitiousness influence superstitions-based purchase decisions across different cultures.

The study also recommends future research to investigate the use of coping strategies under an embarrassment influenced by superstitious purchasing behaviours. Embarrassment literature has provided some insights into how consumers cope with embarrassment from purchasing an embarrassing product (Blair & Roese, 2013; Brackett, 2004; Moore et al., 2006). However, an investigation toward how consumers cope with embarrassment from purchasing a product with superstitious meaning has never been explored before. Investigating the issue will provide a further understanding of a product with superstitious meaning as an embarrassing product.

Lastly, future studies may explore and investigate how consumers anticipate embarrassment when purchasing a product with superstitious meaning for others. Despite the lack of insight in gift purchasing from superstitions literature, embarrassment literature might

provide a potential clue for further investigation. A study conducted by Brackett (2004) asked university students to purchase a condom and interviewed how they cope with embarrassment. The study discovered that 13.4% of female participants told the clerks that they were purchasing for an assignment. By expressing that the purchase is an assignment, participants can rationalise the purchasing decision and disassociate themselves from the embarrassing component (Brackett, 2004). The finding potentially suggests that consumers might anticipate less embarrassment when purchasing a product with superstitious meaning for others as the excuse allows the consumers to disassociate themselves from the purchasing decision. As the insight in both superstitions and embarrassment literature is limited, how consumers anticipate embarrassment when purchasing a product with superstitious meaning for others is worth investigating in the future.

6.6 CHAPTER SUMMARY



The study presented in this thesis investigated the influence of superstitiousness and anticipated embarrassment in superstitious purchasing decisions. The study utilised regulatory engagement theory to explain an underlying mechanism of superstitious purchasing behaviours, while superstitiousness was considered a moderator influencing how consumers anticipate embarrassment when purchasing a product with superstitious meaning. The study also discovered that anticipated embarrassment and engagement could explain an underlying mechanism of superstitious purchasing decisions. As consumers anticipated more embarrassment from purchasing a product with superstitious meaning, an engagement with the purchasing behaviours was reduced. This resulted in a decrease in willingness to pay for the product. In contrast, when consumers anticipated less embarrassment, they felt more engaged with the purchasing decisions and were willing to pay more for the product. The differences in how consumers anticipate an embarrassment from a product with superstitious meaning was influenced by superstitiousness. Highly superstitious consumers tended to anticipate less embarrassment when purchasing a product with superstitious meaning due to high product familiarity. In contrast, consumers with low superstitiousness were found to anticipate more embarrassment when purchasing the product. From a theoretical point of view, this study contributed by further explaining the underlying mechanism of superstitious purchasing decisions through regulatory engagement theory and superstitiousness. The findings were also applicable for businesses that market a product with superstitious meaning





as they suggested for businesses to consider anticipated embarrassment and superstitiousness as a part of a marketing strategy.

Appendices

Appendix A

Full Experiment deployed on WJX.

Stage#	Question#	Question Text	Response Text
0	0	Participant Information Sheet	-
1	1	Have you heard about COVID-19 before?	(Yes/ No)
	<p>Now you are going to read some information regarding COVID-19.</p> <p>The situation of COVID-19 in China has been alleviated, and many cities have resumed their normal life again. However, there is no evidence confirming that the virus is completely eradicated. A number of people can be infected without showing any symptoms, yet they are capable of spreading the virus to others. Multiple studies also discovered patients who have been re-infected. While everything may appear to be normal, a chance for you or people around you to get infected is not zero.</p>		
	2	To what extent are you concerned about contracting COVID-19?	8-points scale (Not at all/ Very Likely)
2	<p>Imagine you want to buy a cushion. You go to your favourite online shopping website and find below two options. Please consider it seriously as you will get a chance to win a cushion with a similar design later in the survey.</p> <p><i>* Participants are randomly assigned into one of the three conditions</i></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Condition 1; Lucky Condition</p>		

	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Condition 2; Happy Condition</p> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;">   </div> <p>Condition 3; Plain Colour Condition</p>	
	<p>Descriptions <i>*The descriptions remain identical across the three experimental conditions.</i></p> <p>Cushion A; Soft and durable cushion with square shape (50×50 cm). The cushion is made from cotton with a velvet texture. The inside of the cushion is filled with polyester. The cushion has received a 5-star rating on Taobao.</p> <p>Cushion B; Soft and durable cushion with a round shape (50cm in diameter). The cushion is made from cotton with a velvet texture. The inside of the cushion is filled with polyester. The cushion has received a 3-star rating on Taobao.</p>	
3	Please indicate the cushion that you prefer?	(A/ B)
3	<p>As a thank you for your participation, at the end of this survey, you will be entered into a lucky draw in which one lucky participant will receive RMB 100. The winner will be randomly chosen from every participant who has completed the survey. Please consider the below decision to be applied if you win the lucky draw.</p> <p>Now, please imagine you are the lucky one and have a reward of RMB 100 in your hand.</p>	

<p>We would like you to use this RMB 100 to bid in an auction for the cushion you have just chosen. The rules are as follows:</p> <ol style="list-style-type: none"> 1. Please indicate the bidding price between RMB 1 to RMB 100 that you would like to pay for the cushion. 2. The reserve price has been pre-set. If your bidding price is equal or higher than the reserve price, it means you successfully purchase the cushion. You will receive the cushion and the remaining money will be returned to you. 3. If your bidding price is lower than the reserve price, it means you do not successfully purchase the cushion. You will not receive the cushion, but the RMB 100 will be returned to you instead. <p>Based on the information above, please answer the following two questions.</p>		
4	What is the maximum amount you are willing to pay for the cushion that you've chosen?	(RMB 3.39/ RMB 16.29/ RMB 29.19/ RMB 42.09/ RMB 54.99/ RMB 67.89/ RMB 80.79/ RMB 93.69)
5	How much would you like to bid if you are given a chance to revise your original bid? (To bid the same price or change is entirely up to you).	(RMB 3.39/ RMB 16.29/ RMB 29.19/ RMB 42.09/ RMB 54.99/ RMB 67.89/ RMB 80.79/ RMB 93.69)
<p>We want to make sure you fully understand the preceding bidding procedure. According to your understanding, please answer the following questions.</p>		
6	If my bidding price is higher than the reserve price, regardless of the lucky draw, I will receive a cushion.	(True/ False)
7	If I win the lucky draw, I will certainly receive a cushion.	(True/ False)
8	If I win the lucky draw, but my bidding price is lower than the reserve price, I will receive RMB 100 as a bonus reward.	(True / False)
4	<p>Thank you for your bid. We will let you know whether your bid was high enough to meet the reserve price at the end of this study. In the meantime, we would like to ask you a number of questions.</p>	
9	In the following questionnaire, please rate how well the following words describe the bidding decision you just	

		went through. Be as honest as possible. The decision was...	
	9.1		7-points scale (Unimportant/ Important)
	9.2		7-points scale (Of no concern/ Of concern to me)
	9.3		7-points scale (Irrelevant/ Relevant)
	9.4		7-points scale (Meaningful to me/ Meaningless to me)
	9.5		7-points scale (Not beneficial/ Beneficial)
	9.6		7-points scale (Doesn't matter/ Matters to me)
	9.7		7-points scale (Boring/ Interesting)
	9.8		7-points scale (Unexciting/ Exciting)
	9.9		7-points scale (Nonessential/ Essential)
	9.10		7-points scale (Insignificant/ Significant to me)
	9.11		7-points scale (Undesirable/ Desirable)
	9.12		7-points scale (Mundane/ Fascinating)
	9.13		7-points scale (Not engaging at all/ Very engaging)
	9.14		7-points scale (Uninvolving/ Involving)
	9.15		7-points scale (Not interesting at all/ Very interesting)
	10	How did you feel when choosing the cushion?	
	10.1		7-points scale (Not embarrassed at all/ Very embarrassed)
	10.2		7-points scale (Not uncomfortable at all/ Very uncomfortable)

	10.3		7-points scale (Not awkward at all/ Very awkward)
	11	Please read each of the following statements and decide how much you agree with each according to your beliefs	
	11.1	Carrying a lucky charm will bring good luck.	6-points scale (Strongly disagree/ Strongly agree)
	11.2	Bringing a lucky charm to an exam will lead to a good grade.	6-points scale (Strongly disagree/ Strongly agree)
	11.3	Having a lucky charm in the car will provide a safe journey.	6-points scale (Strongly disagree/ Strongly agree)
	11.4	Performing a team ritual before a football match will lead the team to win.	6-points scale (Strongly disagree/ Strongly agree)
	11.5	If a businessperson often performs rituals to pray for success, he/she is likely to be more successful than others.	6-points scale (Strongly disagree/ Strongly agree)
	11.6	A soldier is likely to survive combat if he/she performs a ritual in advance.	6-points scale (Strongly disagree/ Strongly agree)
	12	Please specify your age.	
	13	Please indicate your gender.	(Male/ Female/ Others)
	14	What is the highest level of formal education you have completed?	(None/ Elementary school/ Junior High school/ Senior High school/ College/ Bachelor degree/ Master degree/ Doctorate)
	15	Before making the bid on the cushion, did you look up the actual price online?	(Yes, and it affects my bid/ Yes, but it did not affect my bid/ No)
<p>Reveals the bidding results.</p> <p><i>*If participants win the auction</i></p> <p>Thank you for participating in this study. We appreciate your effort and your time to support this study. We are happy to inform you that your bidding price is equal or higher than the reserve price, you have a chance to receive a cushion as a bonus reward from a lucky draw. If you are the lucky winner, our research team will contact you via WJX by 10 October 2020. Our research team will instruct you how to claim the cushion and the remaining bonus money.</p> <p>We greatly value your contribution to the study. If you still experience any stress caused by participating the survey, we encourage you to contact a counselling service available in your area. For further information</p>			

please visit <http://bmfw.www.gov.cn/xxgzbdifylxrxcx/index.html>. We wish you have a happy and lucky day.

**If participants lose the auction*

Thank you for participating in this study. We appreciate your effort and your time to support this study. We would like to inform you that your bidding price is lower than the reserve price. You will not receive a cushion, but you have a chance to receive a bonus reward of RMB 100 from a lucky draw. If you are the lucky winner, our research team will contact you via WJX by 10 October 2020. Our research team will instruct you how to claim the bonus reward.

We greatly value your contribution to the study. If you still experience any stress caused by participating the survey, we encourage you to contact a counselling service available in your area. For further information please visit <http://bmfw.www.gov.cn/xxgzbdifylxrxcx/index.html>. We wish you have a happy and lucky day.

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