The Pennsylvania State University

The Graduate School

The College of Health and Human Development

# WHICH ONE SAVES MORE?

# RANGE OR AVERAGE? MAXIMUM OR MINIMUM?

# EXPLORING HOW ANCHORING AND SELF-CONFIDENCE OF CONSUMERS INFLUENCE PERCEIVED SAVING ON TENSILE PRICE CLAIM FRAMING

A Thesis in

Hotel, Restaurant, and Institutional Management

by

Landie Qiu



Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Master of Science

December 2013

The thesis of Landie Qiu was reviewed and approved* by the following:

David Cranage
Associate Professor of Hospitality Management
Thesis Advisor

Anna S. Mattila
Marriott Professor of Lodging Management
Professor-in-Charge of Graduate Program

John O'Neill
Director and Professor

*Signatures are on file in the Graduate School

# ABSTRACT

Discount promotion is one of the most commonly used sales techniques employed by marketers in the hospitality industry. In addition, the introduction and presentation of the discount information is also critical because, as previous literature has noted, price framing influences consumers' perceived savings.

This present study focuses on one specific type of discount framing—the tensile price claim. Tensile price claims offer ambiguous discount references, such as "as low as $9.99." This study compares customers' perceived savings on two pairs of tensile price framings: minimum framing (save 15% or more) versus maximum framing (save up to 35%), and range framing (save 15% to 35%) versus average framing (save an average of 25%).

Based on the literature review, this study proposes a conceptual framework and two hypotheses. The researcher conducted a pilot study and a main study to test the hypotheses. 56 college students were involved in the pilot study and 207 members of the general public participated in the main study. This study then makes a conclusion based on the results of data analysis. The findings suggest that anchoring and adjustment theory may explain the savings perception process and how consumer self-confidence levels work to moderate perceived savings during this process. The author also discusses both the theoretical and managerial implications of this study.

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## ACKNOWLEDGEMENTS

The success of my thesis depends to a large extent on guidance and assistance provided by a number of people. I would like to take a moment to express my deepest appreciation to all of them.

First of all, I would like to thank my academic advisor Dr. Cranage, whom I deeply respect, for giving me invaluable guidance on this thesis. His advice, aid in collecting data, and careful overview of my work has greatly benefited this thesis. I am extremely grateful to him.

I also owe profound gratitude to Dr. Mattila because her class inspired this paper. She guided me step by step, helping this study develop from a proposal to a thesis. Dr. Mattila also offered countless pieces of advices on experiment design and data analysis. Without her guidance and help, this thesis would not have been possible.

I cannot not forget to express my deep appreciation for Lisa Gao, who is not only my best friend but also a fantastic helper. She assisted me in running the online survey and in collecting raw data. More importantly, she not only provided me with technical support, but also offered sincere encouragement every step of the way.

I wish to further thank my parents, who sponsor me studying abroad at he Pennsylvania State University. Studying here at Penn State is the most meaningful experiences I have ever had.

Last but not least, I would like to thank my grandparents who just were involved in a serious car accident last week. Unfortunately, my grandmother passed away because

of the accident. I'd like to take this chance to commemorate their care and support, and wish that my grandmother rest in peace.

# Chapter 1

## Introduction

To date, the discount promotion remains one of the most commonly employed sales promotions, and its use has gradually increased in recent decades (Darke & Chung, 2005). From 1963 to 1986, the average numbers of price discounts offered in department stores grew from 6% to 19% (Blattbery & Neslin, 1991; Darke & Chung, 2005). For marketers, discount promotions stimulate immediate sales and improve sale volume (Gendall, Hoek, Pope & Young, 2006). Hospitality industry is not an exception. For example, Pavesic (1985) suggested that countless food service operators employed discount promotions to increase store traffic while hotels often cut room rates to increase occupancy rate.

On the other hand, there is still a need to understand how consumers perceive and respond to discount promotions (Campbell & Diamond 1990). For marketers, perceived prices not only influence the current running promotion, but also further influence expectations of future prices (DelVecchio, Krishnan, & Smith, 2007). Such significant influence indicates that marketers must know critical promotion techniques to efficiently attract consumers' attention (Campbell & Diamond 1990) and also know how to avoid an increase in promotion cost.

Discount promotions have different framings. Although few variations exist in cost of employing different discount framings, the framings of a deal may decide its likelihood of being considered a gain or loss (Campbell & Diamond 1990). Therefore,

understanding how consumers perceive and react to different discount framings attracts attention from both practitioners and researchers.

A lot of researchers have addressed price framing in academia (Hardesty & Bearden, 2003; Li et al., 2007; DelVecchio, Krishnan, & Smith, 2007) and have made a number of interesting conclusions. Krishna et al. (2002), for example, indicated that when consumers assess a promoted price, the framing influences their perceived value of the promotion. DelVecchio, Krishnan and Smith's study (2007) argued that high-depth percentage-off promotion framing creates higher postpromotion price expectations than cents-off promotions. Furthermore, Hardesty and Bearden (2003) conducted an across-treatment design experiment about promotion type (price discounts vs. bonus packs) and price presentation (dollars vs. percentage), finding that while customers perceived savings for bonus and discounts packs as similar, they preferred price discounts when promoters employed high promotional benefit levels. In addition, by conducting two experiments, Gendall, Hoek, Pope and Young (2006) found that, for high-priced products, consumers perceive dollar discount more than percentage discount, while the opposite is true for low-priced products. In conclusion, previous framing studies have made important contributions to both literature and industry; however, many unanswered questions regarding promotion framing remain. Therefore, the Marketing Science Institute (1998) encouraged researchers to undertake further projects with the goal of understanding promotions and customers' perceptions on saving (Hardesty & Bearden, 2003).

There are two categories of sales promotions. One is nonmonetary promotion (i.e., "buy one get one free"). Researchers often view these promotions as extra gain and

exclude them from reference price literature (Campbell & Diamond, 1990). The second category is monetary promotion (i.e. rebates and discounts), which is the category of greatest interest in the price framing field.

This present study focuses on one specific type of monetary promotion framing—tensile price claim. Consider this scenario: you are planning a vacation. When you surf the web, two advertisements from online travel agencies pop up. One advertisement reads "Save 20% to 40% for your stay", while the other reads "Save an average of 30% when you book rooms." Which advertisement will you click? After you click one and arrive at one travel agency website, here, two banners from two hotels attract your attention. One states "Save 20% or more" and the other one advertises "Save up to 40%". Which do you choose this time? In the first pair of discount framings, the former one ("Save 20% to 40%") provides a range of discount percentage and the latter one ("Save an Average of 30%) provides an average of discount percentage. In the second pair, the first ad ("Save 20% of more) states a minimum saving level and the second ad (Save up to 40%) offers a maximum saving reference. Those price advertisements in the example are tensile price claims. Prior studies (Biswas & Burton, 1993) indicated that tensile price claims could increase customers' intentions to shop in the store and different forms of tensile price claims can have variable effects. In fact, consumers may not react to different forms of the tensile price claim in a purely rational manner; rather, they may produce judgments based on behavioral aspects, such as perception and preference (Kim, Natter, & Spann, 2009). Therefore, this study will discuss customers' saving perceptions on different kinds of tensile discount framing.

In conducting value perception studies, researchers have applied a variety of theories such as *attribute framing theory* (Levin, Schneider & Gaeth, 1988), *deal semantics* (Liefelf & Heslop, 1985; Berkowitz & Walton, 1980; Burton & Karson, 1991; Grewal, Marmonstein & Sharma, 1996), *psychophysics-of-price heuristic* (Grewal & Marmorstein, 1994), *windfall gains mechanism* (Arkes et al., 1997), and *risk theory* (Dash, Schiffman & Berenson, 1976; Li, 1998; Weber, Blais & Betz, 2002; Li & Xie, 2006). Besides the above theories, numerous researchers have applied anchoring and adjustment theory to explore customers' processing of information (DelVecchio, Krishnan, & Smith, 2007; Klein & Oglethorpe, 1987; Yadav & Seiders, 1998).

A tensile price claim includes an informational clue and ambiguous range reference, thus making it an uncertain object. Based on the uncertainty of tensile price claims, the researcher adopts anchoring and adjustment theory as the theoretical rationale in this study. Anchoring and adjustment theory states that, when people judge or evaluate values for unknown objects or events, they tend to use an initial starting point as an anchor for judging process (Biswas and Burton, 1993; Neale and Bazerman, 1991). When the object is ambiguous and informational processing requires greater effort, consumers will process information more elaborately (Hardesty & Bearden, 2003) and will subconsciously employ anchors to help them process information. In addition, prior research (Biswas and Burton, 1993; Hogarth, 1987) also indicated that anchoring process theory aligns with tensile price claim studies and may help to explain consumers' perceptions on tensile price claims.

Furthermore, research in this field often takes consumer background variables into consideration to analyze choice in promotion framings (Li, Sun & Wang, 2007).

Today, many studies have examined the relationship between personality traits and the consumer purchase decision-making process (Block & Peterson, 1955; Dash & Berenson, 1976; Lauriola & Levin, 2011). Among people's personality traits, researchers commonly cite general self-confidence as an important construct to explain consumer perception (Barber, Ismail & Taylor, 2007) and people's decision-making processes (Insabato et al., 2010; Reed et al., 2012). Such explanations arise because neurophysiologists have observed a relationship between neuronal responses with confidence-based decision (Insabato et al., 2010). Specifically, Bell (1967) stated that the consumer's level of self-confidence impacts purchase behavior. Few studies, however, focus on how self-confidence levels influence customers' perceptions on discount framing. This study hopes to fill that gap.

In conclusion, this study will address the two following research questions:

1. Does the framing of tensile price claims influence consumers' perceived saving?

2. Do self-confidence levels influence consumers' perceived savings on different framings of tensile price claims?

By answering these research questions, this study expects to meet several objectives. First, this study will determine how anchoring and self-confidence levels work in consumers' perception processes across different framing situations and will build a conceptual framework to enrich framing literature. Second, this study will collect solid data, finish data analysis, and offer comprehensive discussions and conclusions. Third and last, this study will suggest how consumers perceive tensile price claims thus aiding practitioners in the design of marketing strategies.

The rest of this paper is organized as follows: in the literature review section, the researcher will discuss previous and recent studies in related fields. Then, based on the literature review, this study will propose a conceptual framework and two hypotheses. In the methodology section, the researcher will explain the experiment design and the implementation of the pilot and main studies. Then, the methodology section will be followed by the discussion of data analysis and results. Lastly, this thesis will discuss its theoretical and managerial implications based on the findings.

# Chapter 2

## Literature Review

In this literature review section, the researcher will discuss previous studies by following several key words. First, this section will address price framing and how it affects consumers' perceived savings. Next, the researcher will define tensile price claims, offering examples to further explain tensile price claim framing types. Following that, this study will introduce anchoring and adjustment theory and explain how researchers apply it within the consumer behavior filed. Finally, the author will discuss the possible moderating role of self-confidence levels.

### Price framing and perceived saving

Pricing is one of the most important determinants for sales revenue (Krishna, Briesch, Lehmann & Yuan, 2002). Marketers employ different types of price promotion to boost store traffic and increase revenue (Choi & Ge, 2010). In addition, discount promotion is an important promotion to attract consumers, so discount advertisements appear in every corner of the markets. Therefore, because discount promotion influences the likelihood that consumers will visit the stores (Dhar, González-Vallejo & Soman, 1999), researchers have devoted a significant amount of attention to the study of promotion pricing since 1970 (Fraccastoro, 1996, p17).

More importantly, how practitioners introduce or present prices to consumers influences pricing evaluations (Krishna, Briesch, Lehmann & Yuan, 2002). Many studies have focused on price framing topic and have compared different framings of pricing,

such as percentage-off vs. dollar-off (DelVecchio, Krishnan & Smith, 2007), discount-offers vs. buy-one-get-one-free offers (Li, Sun & Wang, 2007), discount-offers vs. bonus packages (Hardesty & Bearden, 2003), and the price framing of category bundles (Khan & Dhar, 2010). DelVecchio, Krishnan and Smith (2007)'s study, for example, explored the consumers' perception process on dollar-off framing versus percentage-off framing. In addition, in 2005, Darke and Chung conducted an experiment to examine the extent to which different framings influence consumers' perceived saving. More recently, Niedrich et al. (2009) specified price judgments in models of brand choice by using range-frequency theory, and found that range effects are stronger for coupon users and frequency effects are stronger for consumers exposed to a trend of prices. Furthermore, Khan and Dhar's study (2010) proposed that framing a discount on a hedonic item would be more effective for increasing buying intention than framing a discount on a utilitarian item. The results of Choi, Stanyer and Kim (2010) showed that the depth of the promotions did not affect consumer believability and that the minimum claimed saving information enhanced the level of saving expectation.

Because many papers addressed the relationship between price framing relation and perceived saving, Krishna, Briesch, Lehmann and Yuan (2002) conducted a meta-analysis of this topic, and built a conceptual framework for perceived saving (Figure **2-1**).

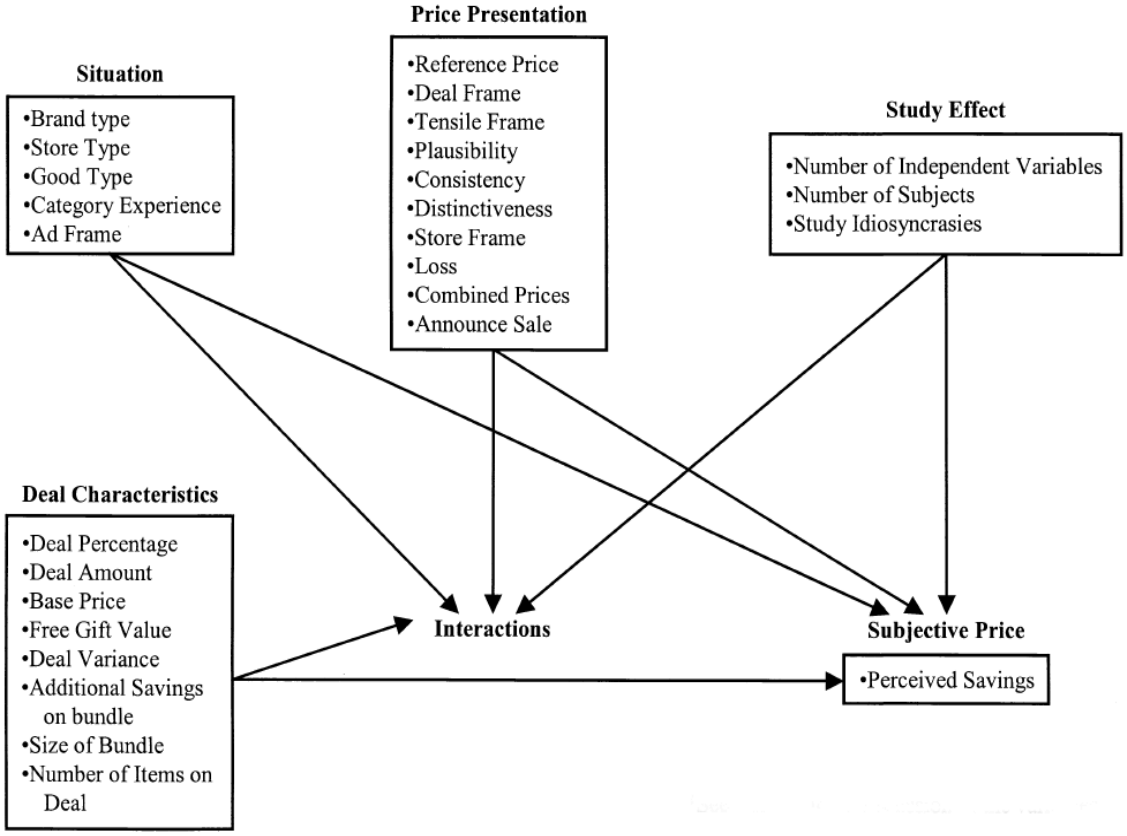



Figure **2-1**: Conceptual framework for perceived saving (Krishna, Briesch, Lehmann & Yuan, 2002).

This framework clearly shows the pricing perception process. As this framework suggests, price presentation, deal characteristics, situation and study effect all decide objective price. Subjective price is how consumers evaluate the pricing, which is the perceived saving. This conceptual framework examines four broad presentation effects that influence subjective price. Instead of studying all effects at one time, this current study focuses on the core effect of this relationship—how price presentation influences perceived saving—with deal percentage as the deal characteristics.

## Tensile price claim

Krishna, Briesch, Lehmann and Yuan's framework (2002) lists several types of price presentations or price framings: reference price, deal frame, plausibility, consistency, distinctiveness, store frame, loss, combined prices, announce sale and tensile frame. The price framing this study focuses on is tensile price claims, a store-level promotional tool.

A tensile price claim is defined as a claim that uses vague wording to introduce price (Mobley, Bearden & Teel, 1988; Biswas & Burton, 1993. In more recent years, Choi and Kim (2007) defined it as "a promotion frame that not specify the exact discount to consumers." In other words, a tensile price claim involves ambiguity to reduce the usefulness of the information provided (Mobley, Bearden & Teel, 1988). For example, marketers may provide a precise advertisement claim, such as "40% off the original price," or they may use tensile price claims, such as "save 20% to 40% on all items in the store"; or "prices as low as $9.99" (Choi & Ge, 2010). Even though the content of the tensile price advertisement contains a factual foundation, marketers use vague wording and avoid providing an exact saving amount. In fact, "tensile" is an engineering term used to describe a metal's capability for expansion (Mobley, Bearden & Teel, 1988). Here, much like the engineer's metal, the ambiguity of the discount form gives consumers an expansive and broad saving reference; thus it is aptly named " tensile price claim".

In recent years, "Scratch and Save" promotions have become a popular method that makes use of the tensile price claim with statements such as "Scratch and Save 15%

to 50% off." According to Choi, Stanyer and Kim (2010), this kind of promotion has "gambling" characteristics. To be more specific, the claims offer the possibility of high savings while maintaining the uncertainty of the actual discount.

Most times, a tensile price includes two components: focal information and a semantic cue (Biswas & Burton, 1993). Take for example a discount claim that reads "save 20% or more." Here, "20%" is the focal information specifying a magnitude of saving, and the rest information is the semantic cue. The focal information provides an exact saving reference, while the semantic cue makes the claims ambiguous and hence reduces the usefulness of the reference (Fraccastoro, 1996, p17).

To date, many studies have examined the tensile price claim topic (Mobley, Bearden & Teel, 1988; Biswas & Burton, 1993; Fraccastoro, 1996, p17; Dhar, González-Vallejo & Soman, 1999; Choi & Kim, 2007; Choi & Ge, 2010). Among these studies, Biswas and Burton (1993) indicated that three forms of tensile price claims (maximum, minimum, and range) differently impact consumers' perceptions and shopping intentions. Their study suggested that consumers prefer maximum framing for broad discount ranges, but no difference exists between maximum, minimum and range framing for narrow discount ranges. Extending their conclusions, this present study compares four forms of tensile price claim: maximum, minimum, range and average. According to the attributes of the forms, the researcher further divides the four forms into two pairs so as to make the comparisons more meaningful—maximum vs. minimum; range vs. average.

## Anchoring and adjustment theory

People make countless decisions based on beliefs about the likelihood of uncertain things, such as election outcomes or the future value of dollars (Tversky & Kahneman, 1974). For consumers, the ambiguity of the tensile price claim makes the possible savings of the discount promotion uncertain. The question, therefore, is how do customers assess the possible savings? Previous researchers have proposed a variety of mechanisms to explain the uncertainty surrounding the decision-making process, and one popular method is anchoring and adjustment theory (Lichtenstein & Slovic, 1971; Tversky & Kahneman, 1974).

Researchers employ anchoring and adjustment theory in many situations with insufficient information. The theory explains how individuals acquire and integrate information, stating that when people judge or evaluate the values of unknown objects or events, they will use an initial starting point as an anchor for the judging process (Biswas and Burton, 1993; Neale and Bazerman, 1991). To be more specific, when individuals need to make a choice or make estimates in an uncertain situation, they will anchor on available information to adjust the information until they make the final choice or estimate (Epley & Gilovich, 2006). This means that the initial anchors greatly influence the results of adjustments (Slovic, Fischhoff & Lichtenstein, 1982). An example in Epley and Gilovich's study (2006) demonstrated this theory. In a survey, researchers asked participants to make a comparative assessment: is the population of Chicago more or less than 200,000? After this question, participants needed to make an absolute estimate: what is actual population of Chicago? (Epley & Gilovich, 2006) Interestingly, when people

considered the second question, they estimated the absolute population based on more or less than 200,000, instead of other numbers. That is because they anchored on 200,000 to estimate the population.

Moreover, researchers have observed anchoring and adjustment theory in many natural contexts and consider the theory as "extremely robust" (Plous, 1993). In psychology, for example, Tanir and Mitchell (2013) found that people like to use themselves as a relevant starting point for social inference.

Basing on the findings in psychological studies, researchers in the marketing and consumer behavior field frequently use anchoring and adjustment theory. Wansink, Kent and Hoch (1998), for instance, conducted two studies and used the anchoring and adjustment model to explore consumers' psychological processes during purchase quantity decision-making. In addition, Levin and Gaeth undertook an interesting study in 1988 about customer reaction to two same beef products with two different label framings; their results showed that people preferred "75% lean" beef rather than "25% fat" beef. Because "lean" and "fat" appeared on the beefs' labels, people anchored their attention on the words, indicating that the framing influenced their preferences. More recently, in Lee and Suk' study (2009), they gave an example to explain the judgment stage. If a person is asked to perceive the value if a car A after exposure to an very expensive (cheap) car B, the person will anchor the value of car B to rate car A. Additionally, Chernev (2010) suggested that anchoring affects the estimation of sequentially presented items, and consumers are more likely to determine their estimates not only by the numeric values of the considered options but also by their semantic relationship.

Additionally, prior research (Biswas & Burton, 1993; Hogarth, 1987) indicated that an anchoring process might explain consumers' perceptions regarding tensile price claims. In a tensile price claim situation, because there is no exact saving reference, consumers need to use an initial value as anchor to yield the final saving estimate (Tversky & Kahneman, 1974). Therefore, this current study adopts the anchoring and adjustment theory as a theoretical rational.

## Moderating role of self-confidence level

Consumer behavior studies have always devoted a great deal of attentions towards understanding how consumers use information in their decision-making processes (Locander, & Hermann, 1979). Preferences for choice may vary across age group, nationality, gender, cultural background, purchase history and personal beliefs. Researchers have explored all of these factors systematically (Reed, Mikels & Löckenhoff, 2012). In addition, Brody and Cunningham (1968) theorized that personality is involved in consumer-decision process, meaning that different personality profiles may more or less influence consumers' decisions on purchase styles, brand choice and purchase qualities (Brody & Cunningham, 1968).

Among various personality attributes, researchers have identified self-confidence as a critical construct to study consumer behavior (Locander & Hermann, 1979; Hermann, 1979; Bearden, Hardesty & Rose, 2001). The nature of self-confidence is dynamic and highly individualized (Perry, 2011). Therefore, there are people high with self-confidence and those low with self-confidence. Locander and Hermann (1979)

examined the effect of self-confidence on consumers' information seeking behavior regarding their purchase decisions. In a car-buying context, Bell (1967) found that people with high and low self-confidence were less persuadable than those with moderate self-confidence.

General self-confidence is defined as the "confidence in one's self or one's abilities" (Boyer et al., 1985) and it may include a number of elements such as communication skills, effectiveness and self-reinforcement (Sears, 1990, p.9). In recent years, many studies have explored both the "consumer self-confidence" topic and the "decision confidence" topic. Bearden, Hardesty and Rose (2001), for example, defined consumer self-confidence as the extent to which consumers feel capable and assured, with respect to their marketplace decisions and behaviors (Bearden, Hardesty & Rose, 2001). Decision confidence is defined as the feeling of having done something correctly or incorrectly (Jonsson et al., 2005; Insabato et al., 2010). One point to clarify, however, is that the self-confidence used in the present study is general self-confidence, a singular personality attribute, and not the confidence in consumers' buying decisions, nor decision confidence.

# Chapter 3

## Conceptual Framework and Hypotheses

Based on the literature review, the researcher will now build a conceptual framework to demonstrate the factors and relationships of the present study.

This study examines two pairs of tensile price claim framings: maximum framing vs. minimum framing and average framing vs. range framing. This study also explores the differences in customers' perceived saving. Because tensile price claims provide ambiguous saving references, the researcher proposes that anchoring and adjustment theory may help explain how consumers perceive saving on such claims.

Within this conceptual framework, the researcher uses "save up to 35%" as a maximum tensile price claim example and "save 15% or more" as a minimum tensile price claim example. According to anchoring and adjustment theory, in a tensile price claim that includes both focal information and a semantic cue, the semantic cue is ambiguous and, hence, less informative for consumers. Therefore, the focal information becomes the anchor to help consumers with cognitive perception (Biswas & Burton, 1993). As a result, when seeing an advertisement states that "save up to 35%", people will use 35% as an anchor and the perceived saving point will be somewhere near this anchor. The anchor in the minimum form is 15%, meaning that consumers will locate the perceived saving point near 15%. Customers, therefore, obtain greater perceived saving from a maximum framing than that from a minimum framing. We then formally propose our first hypothesis:

H1: Customers perceive more saving from the maximum tensile price claim framing than they do from the minimum tensile price claim framing.

It is a different story, however, when people compare an average tensile price claim with a range tensile price claim. The anchor for an average framing is straightforward: the anchor of "save an average of 25%" is 25%. On the other hand, different from other three forms of tensile price claim framing, a range tensile price claim is more complex because a range tensile price claim (save 15% to 35%) has two points of focal information that can act as potential anchors for customers. Which one will customers pick for the real anchor? This study proposes that the self-confidence level of customers may moderate the perceived savings.

White (2009) stated that an important attribute of people with high self-confidence is that they typically believe in positive achievements during certain scenarios. This is because optimism and self-affirmation are critical characteristics of highly self-confident people. On the other hand, people with low self-confidence often have more self-doubt, making them seem more pessimistic and conservative when compared to their counterparts. This study proposes that when customers perceive saving in a range tensile price claim, high self-confident customers, being more optimistic and risk-seeking, are more likely to use the larger number (35%) as a perception anchor. Their less confident counterparts, however, typically more conservative and self-doubting, are more likely to use the smaller or safer number (15%) as a perception anchor. Therefore, highly self-confident consumers obtain a higher anchor (35%) in range framing than that of average framing (25%), while consumers with low self-confident get a lower anchor (15%) in range framing than that of average framing (25%).

Ultimately the perceived savings for range tensile price claim may vary among individuals depending on confidence levels. In other words, customers' self-confidence level moderates the influence of tensile price claim framing on perceived saving. Thus, formally, this study proposes its second hypothesis:

H2: Customers with high self-confidence perceive more saving from the range tensile price claim framing than they do from the average tensile price claim framing. Customers low in self-confidence perceive more saving from the average tensile price claim framing than they do from the range tensile price claim framing.

Putting H1 and H2 together, the framework is as follows:

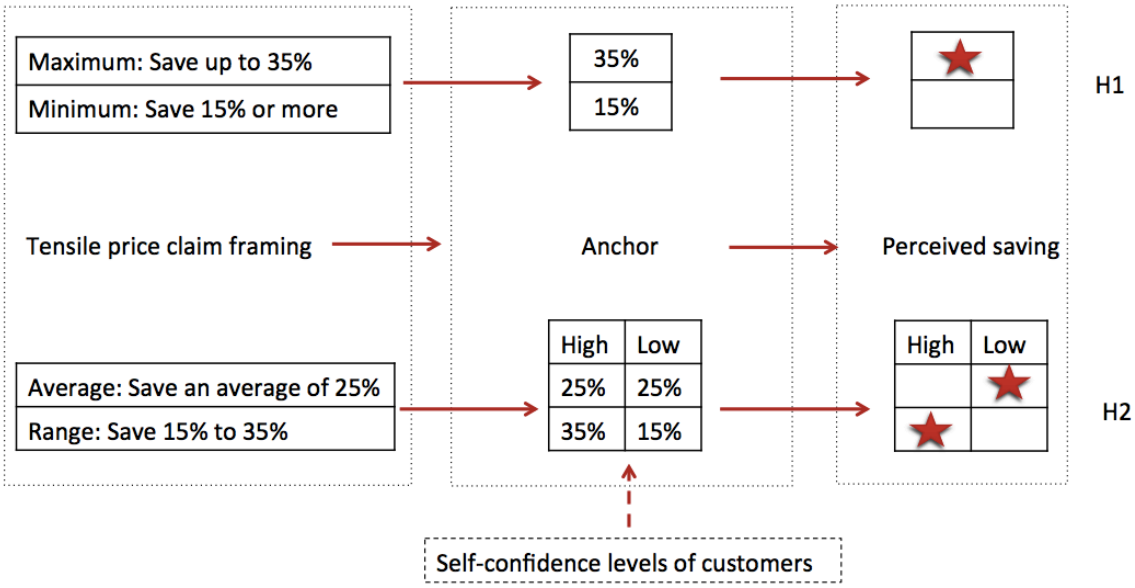



Figure **3-1**: Conceptual framework

This conceptual framework shows the relationships between framing and perceived saving in this study. For H1, there is no moderator so the relationship is fairly straightforward. By comparing maximum framing with minimum framing, it is clear that

people perceive more savings from maximum framing, which is presented by a star in the conceptual framework.

H2 involves the self-confidence level of customers as a moderator in the relationship. For an average framing, consumers with both high and low self-confidence use 25% as anchors. For a range framing, however, people high in self-confidence are more likely to pick a higher anchor while people with low self-confidence are more likely to pick a lower anchor. Therefore, the two groups of people have a reversed result in comparing perceived savings. Consumers high in self-confidence earn a star in range framing while the opposite is true for consumers low in self-confidence.

# Chapter 4

# Methodology

This study conducted a pilot study and main study to test the hypotheses. This methodology section will explain them in separate subsections.

## Pilot study

### Study design

To test the hypotheses, the researcher first conducted a pilot study. For the pilot study, the researcher employed a survey that took samples from college students in a large state university with a sample size of 57. The purpose of the pilot study is twofold: first, to examine the quality of the designed questionnaire; and second, to examine whether the saving midpoint influences the result or not (because the researcher will choose 25% as the savings midpoint in the main study, 30% is used as a different saving midpoint in pilot study).

After deciding the midpoint of savings, the researcher needs to set the numbers in the other three framings. Prior research (Biswas & Burton, 1993) shows that the width of the discount range affects consumers' perceptions. When the range is too narrow (e.g. 10%), with the minimum and maximum levels relatively close to each other, the differences in customers' perceptions across the different framings of tensile claims become insignificant. On the other hand, when the range is too wide (e.g. 30% or 40%),

the discount advertisement will have a significantly positive effect on consumers' perceptions. This study, therefore, chooses neither the wide nor the narrow ranges. Instead, the researcher chooses a medium 20% as the range for framing, thus making the top end and the end point in the range tensile price claim become the numbers in the maximum and minimum framings. In the pilot study then, the four framings of tensile price claims are as follows: a range tensile price claim framing of "save 20% to 40%"; an average tensile price claim framing of "save an average of 30%"; a maximum tensile price claim framing of "save up to 40%; and a minimum tensile price claim framing of "save 20% or more."

In the questionnaires, the researcher first measured participants' self-confidence levels. The 7-point self-confidence scale was adopted from Bell's study (1967):

1. I feel capable of handling myself in most social situations.

2. I seldom fear my actions will cause others to have a low opinion of me.

3. It doesn't bother me to have to enter a room where other people have already gathered and are talking.

4. In group discussions, I usually feel that my opinions are inferior.

5. I don't make a very favorable first impression on people.

6. When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.

7. It is extremely uncomfortable to accidentally go to a formal party in street clothes.

8. I don't spend much time worrying about what people think of me.

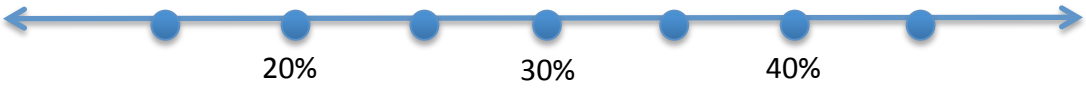
9. When in a group, I very rarely express an opinion for fear of being thought ridiculous.

10. I am never at a loss for words when I am introduced to someone.

Participants who agree with question 1, 2, 3, 8, and 10, but disagree with the remaining questions are considered to be highly self-confident, and vice versa for low self-confidence consumers. How much participants agree or disagree with those statements transfers into quantitative data as a continuous variable.

In the second part of the pilot study, the researcher measured participants' perceived savings to capture their initial anchors on the tensile price claim by asking participants to fill a bubble on a line. A sample question follows:

> Please imagine that you see a discount message B showing Save 20% to 40%. How much saving do you think you will most likely experience according to this advertisement, place circle it.




Finally, the researcher collected participants' demographic information, which included basic attributes such as gender, age, ethnicity, education and annual income. A sample questionnaire is attached in appendix A.

**Results and discussion**

The pilot study got most of its participants from the study body of a public university. Participants completed the survey during two regularly scheduled class periods. Students all received the same questionnaires as well as cookies for completing the survey.

The total sample size is 57. Among these 57 participants, the researcher collected 56 useable questionnaires, which were then subjected to data analysis. The researcher

eliminated the single unusable questionnaire due to incompletion. The demographic information is as follows:

Table **4-1**: Demographic information for pilot study.

| | | | | | |
|---|---|---|---|---|---|
| | male | female | other | | |
| Gender | 22 | 34 | 0 | | |
| | 18-29 | 30-39 | 40-49 | 50-59 | more than 59 |
| Age | 55 | 0 | 0 | 1 | 0 |
| | Caucasian | African American | Hispanic | Asian | other |
| Ethnicity | 33 | 7 | 1 | 14 | 1 |
| | high school | some college | completed college | grad school | other |
| Education | 1 | 51 | 3 | 1 | 0 |
| Annual | under $20,000 | $20,000-49,999 | $50,000-79,999 | $80,000-109,999 | above 110,000 |
| income | 52 | 3 | 0 | 1 | 0 |

The demographic information was consistent with college students' background. Because participants' backgrounds were fairly similar, the researcher did not analyze the interaction between demographic background and treatment levels.

First, the researcher undertook a descriptive statistics H1 that is provided below (Table 4-2).

Table **4-2**: Descriptive statistics for H1 in pilot study.

**Descriptive Statistics for Perceived Saving**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Max | 26.52 | 6.024 | 56 |
| Min | 24.02 | 5.594 | 56 |

Then, the researcher conducted a repeated-measures analysis with task as within-subject factors to analyze data for maximum and minimum framings.

Table **4-3**: Tests of within-subjects effects for H1

**Tests of Within-Subjects Effects**

Measure: MEASURE_1

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Framing | Sphericity Assumed | 175.000 | 1 | 175.000 | 7.264 | .009 |
| | Greenhouse-Geisser | 175.000 | 1.000 | 175.000 | 7.264 | .009 |
| | Huynh-Feldt | 175.000 | 1.000 | 175.000 | 7.264 | .009 |
| | Lower-bound | 175.000 | 1.000 | 175.000 | 7.264 | .009 |
| Error(Framing) | Sphericity Assumed | 1325.000 | 55 | 24.091 | | |
| | Greenhouse-Geisser | 1325.000 | 55.000 | 24.091 | | |
| | Huynh-Feldt | 1325.000 | 55.000 | 24.091 | | |
| | Lower-bound | 1325.000 | 55.000 | 24.091 | | |

The output shows that framing is a significant factor ($F = 7.264$, $p < 0.05$), and that people perceive more savings from maximum framing (26.52) than they do from minimum framing (24.02). To better support the results, the researcher used median-split to divide self-confidence data into groups of high self-confidence and low self-confidence, and performed ANOVA to further analyze data.

The ANOVA analysis involved two treatments: self-confidence group and framing. Because this study is interested in comparing specific, chosen levels of a treatment, both treatment levels in this study are fixed effect. There are two levels in the self-confidence group (high and low), and four levels in framing (average, maximum, minimum and range). The descriptive statistics of ANOVA are shown in Table 4-4.

Table **4-4**: Descriptive statistics from ANOVA for H1 in pilot study.

**Descriptive Statistics for Perceived Saving**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| HighMax | 28.04 | 6.850 | 28 |

| | | | |
|---|---|---|---|
| HighMin | 25.00 | 4.714 | 28 |
| LowMax | 25.00 | 4.714 | 28 |
| LowMin | 23.04 | 6.286 | 28 |

Then, the researcher performed repeated measures analysis in ANOVA for H1.

Table **4-5**: ANOVA output for H1 in pilot study.

**Within-Subjects Factors**

Measure: MEASURE_1

| SelfconfidenceGroup | Framing | Dependent Variable |
|---|---|---|
| 1 | 1 | HighMax |
| | 2 | HighMin |
| 2 | 1 | LowMax |
| | 2 | LowMin |

**Tests of Within-Subjects Effects**

Measure: MEASURE_1

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| SelfconfidenceGroup | Sphericity Assumed | 175.000 | 1 | 175.000 | 8.400 | .007 |
| | Greenhouse-Geisser | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| | Huynh-Feldt | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| | Lower-bound | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| Error(Selfconfidence | Sphericity Assumed | 562.500 | 27 | 20.833 | | |
| Group) | Greenhouse-Geisser | 562.500 | 27.000 | 20.833 | | |
| | Huynh-Feldt | 562.500 | 27.000 | 20.833 | | |
| | Lower-bound | 562.500 | 27.000 | 20.833 | | |
| Framing | Sphericity Assumed | 175.000 | 1 | 175.000 | 8.400 | .007 |
| | Greenhouse-Geisser | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| | Huynh-Feldt | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| | Lower-bound | 175.000 | 1.000 | 175.000 | 8.400 | .007 |
| Error(Framing) | Sphericity Assumed | 562.500 | 27 | 20.833 | | |
| | Greenhouse-Geisser | 562.500 | 27.000 | 20.833 | | |
| | Huynh-Feldt | 562.500 | 27.000 | 20.833 | | |
| | Lower-bound | 562.500 | 27.000 | 20.833 | | |
| SelfconfidenceGroup | Sphericity Assumed | 8.036 | 1 | 8.036 | .288 | .596 |

| | | | | | | |
|---|---|---|---|---|---|---|
| * Framing | Greenhouse-Geisser | 8.036 | 1.000 | 8.036 | .288 | .596 |
| | Huynh-Feldt | 8.036 | 1.000 | 8.036 | .288 | .596 |
| | Lower-bound | 8.036 | 1.000 | 8.036 | .288 | .596 |
| Error(Selfconfidence Group*Framing) | Sphericity Assumed | 754.464 | 27 | 27.943 | | |
| | Greenhouse-Geisser | 754.464 | 27.000 | 27.943 | | |
| | Huynh-Feldt | 754.464 | 27.000 | 27.943 | | |
| | Lower-bound | 754.464 | 27.000 | 27.943 | | |

A plot graph is provided to better demonstrate the results (Figure **4-1**):

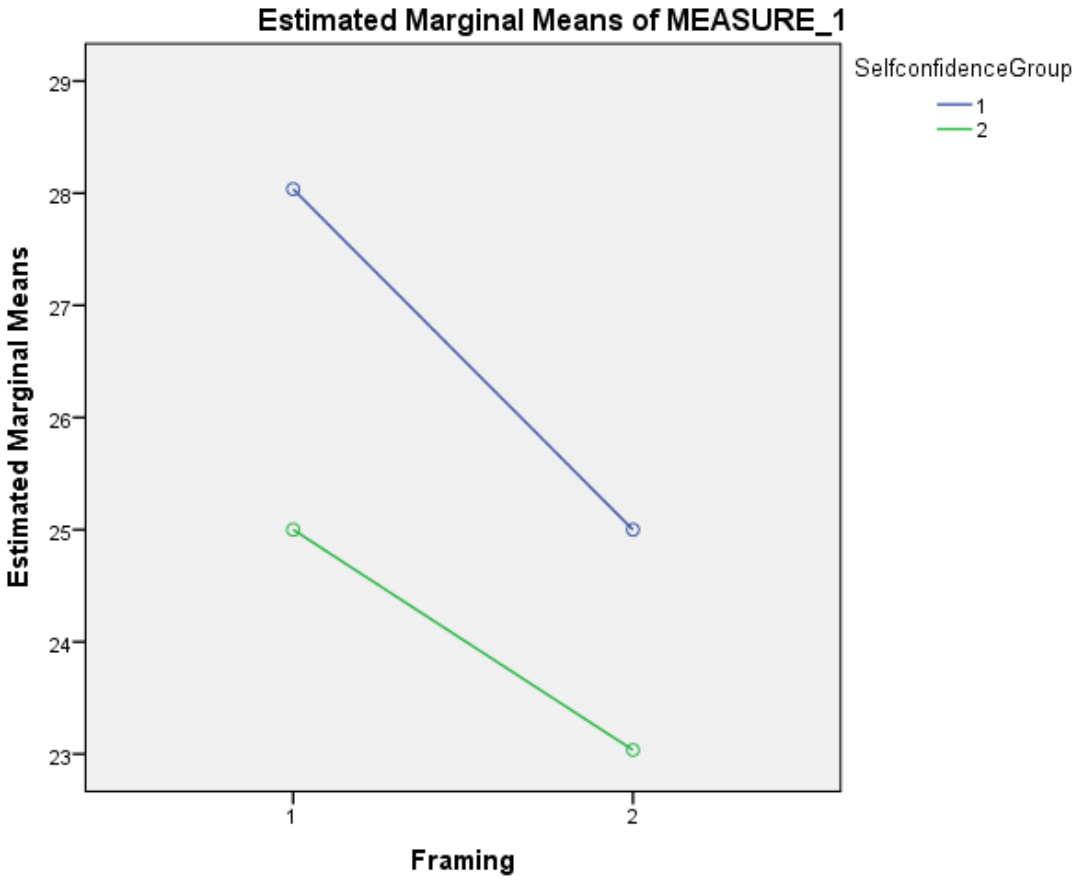



Figure **4-1**: Plot graph for H1 in pilot study.

According to the results of the ANOVA table, framing effect emerged from the output as a significant treatment ($F = 8.4$, $p < 0.05$). Therefore, the results of ANOVA confirmed the results of regression analysis that framing is a significant factor, meaning that when customers compare a maximum framing tensile price claim with a minimum framing tensile price claim, they perceive more savings from the maximum framing than they do from the minimum framing.

Next, the researcher performed a same analysis process to test H2. Table 4-6 offers a descriptive statistics.

Table **4-6**: Descriptive statistics for H2 in pilot study.

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Average | 25.95 | 5.408 | 56 |
| Range | 25.4464 | 6.05105 | 56 |

Next, the researcher employed a general linear model involving repeated measures to analyze data.

Table **4-7**: Tests of within-subjects effects for H2 in pilot study.

**Tests of Within-Subjects Effects**

Measure: MEASURE_1

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| framingtype | Sphericity Assumed | 5.401 | 1 | 5.401 | .239 | .627 |
| | Greenhouse-Geisser | 5.401 | 1.000 | 5.401 | .239 | .627 |
| | Huynh-Feldt | 5.401 | 1.000 | 5.401 | .239 | .627 |
| | Lower-bound | 5.401 | 1.000 | 5.401 | .239 | .627 |
| framingtype * selfconfiden | Sphericity Assumed | 26.704 | 1 | 26.704 | 1.184 | .281 |
| | Greenhouse-Geisser | 26.704 | 1.000 | 26.704 | 1.184 | .281 |
| | Huynh-Feldt | 26.704 | 1.000 | 26.704 | 1.184 | .281 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ce | Lower-bound | 26.704 | 1.000 | 26.704 | 1.184 | .281 |
| Error(framin gtype) | Sphericity Assumed | 1218.296 | 54 | 22.561 | | |
| | Greenhouse-Geisser | 1218.296 | 54.000 | 22.561 | | |
| | Huynh-Feldt | 1218.296 | 54.000 | 22.561 | | |
| | Lower-bound | 1218.296 | 54.000 | 22.561 | | |

The output shows that no significant interaction exists between framing and self-confidence levels. The researcher, however, still split data into groups of high self-confidence and low self-confidence and submitted the data to a 2 × 2 ANOVA with self-confidence group and framing as independent variables. Table 4-8 shows a descriptive statistics.

Table **4-8**: Descriptive statistics from ANOVA for H2 in pilot study.

**Descriptive Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| HighAverage | 26.79 | 4.557 | 28 |
| HighRange | 26.61 | 5.782 | 28 |
| LowAverage | 25.11 | 6.112 | 28 |
| LowRange | 24.29 | 6.194 | 28 |

Then, researcher performed ANOVA for H2 (table 4-9).

Table **4-9**: ANOVA output for H2 in pilot study.

**Within-Subjects Factors**

**Measure: MEASURE_1**

| SelfconfidenceGroup | Framing | Dependent Variable |
|---|---|---|
| 1 | 1 | HighAverage |
| | 2 | HighRange |
| 2 | 1 | LowAverage |
| | 2 | LowRange |

Tests of Within-Subjects Effects

Measure: MEASURE_1

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| SelfconfidenceGroup | Sphericity Assumed | 112.000 | 1 | 112.000 | 2.543 | .122 |
| | Greenhouse-Geisser | 112.000 | 1.000 | 112.000 | 2.543 | .122 |
| | Huynh-Feldt | 112.000 | 1.000 | 112.000 | 2.543 | .122 |
| | Lower-bound | 112.000 | 1.000 | 112.000 | 2.543 | .122 |
| Error(SelfconfidenceGroup) | Sphericity Assumed | 1189.000 | 27 | 44.037 | | |
| | Greenhouse-Geisser | 1189.000 | 27.000 | 44.037 | | |
| | Huynh-Feldt | 1189.000 | 27.000 | 44.037 | | |
| | Lower-bound | 1189.000 | 27.000 | 44.037 | | |
| Framing | Sphericity Assumed | 7.000 | 1 | 7.000 | .224 | .640 |
| | Greenhouse-Geisser | 7.000 | 1.000 | 7.000 | .224 | .640 |
| | Huynh-Feldt | 7.000 | 1.000 | 7.000 | .224 | .640 |
| | Lower-bound | 7.000 | 1.000 | 7.000 | .224 | .640 |
| Error(Framing) | Sphericity Assumed | 844.000 | 27 | 31.259 | | |
| | Greenhouse-Geisser | 844.000 | 27.000 | 31.259 | | |
| | Huynh-Feldt | 844.000 | 27.000 | 31.259 | | |
| | Lower-bound | 844.000 | 27.000 | 31.259 | | |
| SelfconfidenceGroup * Framing | Sphericity Assumed | 2.893 | 1 | 2.893 | .196 | .661 |
| | Greenhouse-Geisser | 2.893 | 1.000 | 2.893 | .196 | .661 |
| | Huynh-Feldt | 2.893 | 1.000 | 2.893 | .196 | .661 |
| | Lower-bound | 2.893 | 1.000 | 2.893 | .196 | .661 |
| Error(SelfconfidenceGroup*Framing) | Sphericity Assumed | 398.107 | 27 | 14.745 | | |
| | Greenhouse-Geisser | 398.107 | 27.000 | 14.745 | | |
| | Huynh-Feldt | 398.107 | 27.000 | 14.745 | | |
| | Lower-bound | 398.107 | 27.000 | 14.745 | | |

Based on this result, a plot graph is provided to better demonstrate the results.

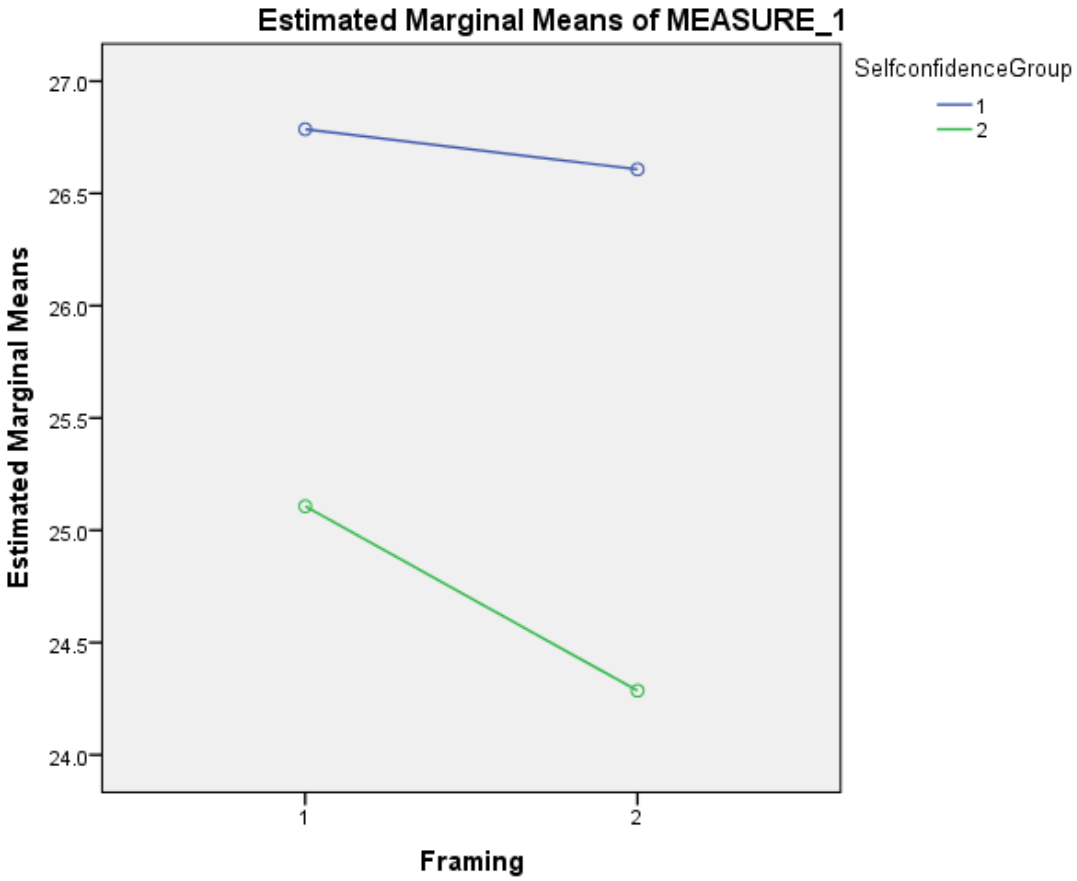



Figure **4-2**: Plot graph for H2 in pilot study.

According to the results, there is no significant interaction between self-confidence groups and framing.

The pilot study offers three findings. First of all, there is a stable difference between perceived savings for people high in self-confidence and people low in self-confidence. In other words, for each framing, highly self-confident individuals perceive more savings than low self-confidence people. Second, the results support H1: people perceive more savings from maximum framing than they do from minimum framing.

Third, the results do not support H2, indicating that the interaction between self-confidence level and framing is not significant in the pilot study.

There is an alternative explanation that can account for the results of H2. Because the pilot study is a within study, and every questionnaire involves four discount framings, it is possible that an interaction exists between the four framings. For example, if a participant were to compare "saving an average of 30%" with "saving 20% to 40%" on one questionnaire, there may not be a significant difference for him/her because "saving an average of 30%" may become a benchmark to consider other framings. Taking this alternative explanation into account, the researcher improved the experiment design in the main study and develop it into a between-subject design.

## Main study

### Study design

According to the feedback of the pilot study, the researcher improved the design of the main study in the following aspects. Taking into consideration that pilot study was a mixed study and that there might have been interaction effects between the adjustments on four framings, the researcher designed the main study as a between-subject quasi-experiment to reduce the interaction, so every participant just needed to evaluate one tensile price claim framing per questionnaire. The independent variables were self-confidence level and framing, with perceived saving serving as the only dependent variable.

In the main study, the saving numbers were different than those in the pilot study. The main study picked 25% as the midpoint saving instead of 20% for two reasons. First, prior studies (Berkowitz & Walton, 1980; Della, Monroe & McGinnis, 1981; Kalwani & Yim, 1992) set specific promotion levels with 10% as low, 25% as moderate, and 50% as high. This current study adopted a moderate level. In addition, tensile price claim literature (Mobley, Bearden & Teel, 1988; Biswas & Burton, 1993) stated that 25% is an adequate and suitable discount amount that researchers can apply in tensile price claim studies. Therefore, 25% was the number in average framing. Consistent with the pilot study, 20% served as the range width in the main study. Thus, the four framings of tensile price claims used in the main study are as follows: a range tensile price claim framing of "save 15% to 35%"; an average tensile price claim framing of "save an average of 25%"; a maximum tensile price claim framing of "save up to 35%; and a minimum tensile price claim framing of "save 15% or more".

Like the pilot study, the main study first used Bell's instrument (1967) to measure participants' self-confidence levels. Then, the researcher randomly assigned one framing to each participant. In addition, the main study offered a context in the questionnaire when it measured perceived saving. Barnes (1975) and Mobley et al. (1988) implied that consumer perception and reaction to advertisements vary over retail type. Therefore, the researcher used a shopping mall for the context to avoid retail type variation. A sample question in a minimum framing is as follows:

> Please imagine that a shopping mall that you **trust in** has launched a promotion, and this is the advertisement: SAVE 15% OR MORE. Please write down how much saving you think you will most likely experience at the first moment you see the advertisement. _____ %

In the pilot study, participants needed to fill a bubble on a line to represent their perceived savings. In contrast, the main study asked participants to write down directly the savings amount they perceived to get a more exact perceived saving.

In addition, due to the uncertainty and ambiguity of tensile price claims, consumers' attitudes to the store influences perceived savings (Biswas & Burton, 1993). Prior research (Keh and Xie, 2009) also indicated that customer's trust in the store positively relates to purchase intention. Because of that, the main study manipulated a high store trust for participants, ensuring a positive attitude to the store. Thus, to emphasize a high trust in store, the researcher bolded "trust in" in the questionnaire. Moreover, a manipulation check also followed the perceived savings question. The researcher adopted the instrument from Selnes and Sallis's study (2003) and modified it to suit the purpose of the present study. Participants need to rate every item from 1 (strongly disagree) to 7 (strongly agree):

1. I trust this store is competent at what they are doing.

2. I feel generally that this store is trustworthy.

3. I feel generally that this store is very responsive to customers.

21 participants who did not pass the manipulation check were eliminated from the data analysis. A sample of the questionnaire for the main study appears in appendix B.

**Results and discussion**

The pilot study derived its samples from college students, who are not representative. Thus for the main study the researcher chose the general population as the sample group. In addition, the main study was a between subjects quasi-experiment. The researcher first measured participants' self-confidence levels and then randomly assigned one framing treatment to each participant. Following that, respondents needed to reply a three-item manipulation check of trust in stores. Finally, demographic information was collected.

The researcher used Qualtrics and Mechanical Turk as survey tools to carry out the main study. The study design on Qualtrics lasted about two weeks. The questionnaire required a minimum age of 18 and respondents needed to provide consent for their participation in this study, with the researcher also supplying contact information. Respondents were required to answer every question in order without skipping a single one. The response time for one question was about 5 minutes.

After designing the questionnaire on Qualtrics, the researcher carried out the study on Mechanical Turk, incurring an expense of $60.69. In total, the researcher collected 228 anonymous responses with 207 (90.8%) of those responses being useful. The eliminated responses were those that failed to pass the manipulation check for trust in stores.

The computer system automatically recorded all data, and the researcher extracted them from Mechanical Turk to perform data analysis. The Cronbach's Alpha for

manipulation check was 0.8647. The following Table 4-10 displays the demographic information.

Table **4-10**: Demographic information for main study.

| | | | | | |
|---|---|---|---|---|---|
| | male | female | other | | |
| Gender | 134 | 72 | 1 | | |
| | 18-29 | 30-39 | 40-49 | 50-59 | more than 59 |
| Age | 117 | 62 | 15 | 7 | 6 |
| | Caucasian | African American | Hispanic | Asian | other |
| Ethnicity | 65 | 7 | 8 | 122 | 5 |
| | high school | some college | completed college | grad school | other |
| Education | 12 | 41 | 105 | 47 | 2 |
| Annual | under $20,000 | $20,000-49,999 | $50,000-79,999 | $80,000-109,999 | above 110,000 |
| income | 102 | 65 | 32 | 7 | 1 |

To test H1, the researcher extracted the data from maximum and minimum framings. Because the self-confidence was a continuous variable, the researcher first ran a regression analysis and received the following results:

Table **4-11**: Regression analysis for H1 in main study.

Coefficients

| Term | Coef | SE Coef | T | P |
|---|---|---|---|---|
| Constant | 16.0653 | 1.16774 | 13.7576 | 0.000 |
| framing | 14.2746 | 1.61962 | 8.8136 | 0.000 |
| self-confidence | 0.0820 | 0.13302 | 0.6161 | 0.539 |
| framing*self-confidence | -0.0356 | 0.17320 | -0.2053 | 0.838 |

Analysis of Variance

| Source | DF | Seq SS | Adj SS | Adj MS | F | P |
|---|---|---|---|---|---|---|
| Regression | 3 | 4823.06 | 4823.06 | 1607.69 | 34.7552 | 0.000000 |
| framing | 1 | 4797.41 | 3593.23 | 3593.23 | 77.6790 | 0.000000 |
| self-confidence | 1 | 23.70 | 17.56 | 17.56 | 0.3796 | 0.539360 |
| framing*self-confidence | 1 | 1.95 | 1.95 | 1.95 | 0.0422 | 0.837780 |
| Error | 92 | 4255.68 | 4255.68 | 46.26 | | |
| Lack-of-Fit | 40 | 1565.27 | 1565.27 | 39.13 | 0.7563 | 0.819593 |
| Pure Error | 52 | 2690.42 | 2690.42 | 51.74 | | |
| Total | 95 | 9078.74 | | | | |

From this table, framing is a significant predictor ($F = 77.6790$, $p < 0.05$) for perceived saving. To better demonstrate the results, the researcher used a median-spilt to divide self-confidence into low and high groups and ran an ANOVA to analyze data (Table 4-12).

Table **4-12**: ANOVA output for H1 in main study.

| Factor | Type | Levels | Values |
|---|---|---|---|
| self-confidence group | fixed | 2 | high, low |
| framing | fixed | 2 | max, min |

Analysis of Variance for perceived saving, using Adjusted SS for Tests

| Source | DF | Seq SS | Adj SS | Adj MS | F | P |
|---|---|---|---|---|---|---|
| self-confidence group | 1 | 36.1 | 50.2 | 50.2 | 1.09 | 0.298 |
| framing | 1 | 4814.2 | 4822.4 | 4822.4 | 105.13 | 0.000 |
| self-confidence group*framing | 1 | 8.2 | 8.2 | 8.2 | 0.18 | 0.673 |
| Error | 92 | 4220.2 | 4220.2 | 45.9 | | |
| Total | 95 | 9078.7 | | | | |

The results of ANOVA confirmed the results of the regression analysis ($F = 105.13$, $p < 0.05$). In addition, a plot graph illustrate the difference.

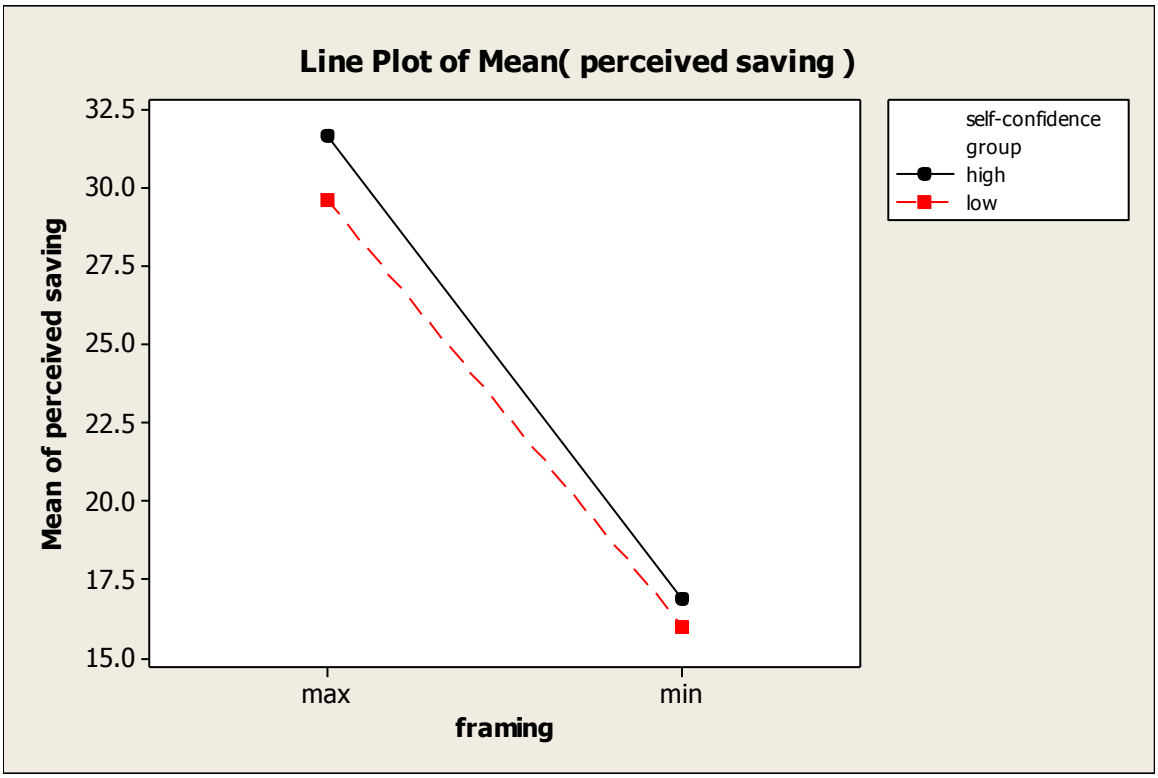



Figure **4-3**: Plot graph for H1 in main study.

The descriptive statistics determined the plot graph. In this graph, the solid line denotes the perceived savings for highly self-confident people. Their perceived savings for maximum framing and minimum framing are 31.67 are 16.86 respectively. On the other hand, low self-confident people perceived 29.63 in maximum framing and 16.00 in the minimum framing. Overall, the highly self-confident people perceived slightly more savings than their counterparts. One significant finding is that regardless of self-confidence, the mean of perceived saving in maximum framing was 30.65 and 16.43 in minimum framing. The results, therefore, support H1.

To test H2, the researcher extracted the data from average and range framing and then ran a regression analysis. The results are as follows.

Table **4-13**: Regression analysis for H2 in main study.

Coefficients

| Term | Coef | SE Coef | T | P |
|---|---|---|---|---|
| Constant | 22.2247 | 0.86242 | 25.7703 | 0.000 |
| self-confidence | -0.0226 | 0.09156 | -0.2465 | 0.806 |
| framing | -1.0870 | 1.24358 | -0.8741 | 0.384 |
| self-confidence*framing | 0.3615 | 0.13468 | 2.6845 | 0.008 |

Analysis of Variance

| Source | DF | Seq SS | Adj SS | Adj MS | F | P |
|---|---|---|---|---|---|---|
| Regression | 3 | 403.52 | 403.52 | 134.505 | 3.99160 | 0.009734 |
| self-confidence | 1 | 158.17 | 2.05 | 2.048 | 0.06078 | 0.805743 |
| framing | 1 | 2.50 | 25.75 | 25.746 | 0.76404 | 0.384025 |
| self-confidence*framing | 1 | 242.85 | 242.85 | 242.846 | 7.20674 | 0.008419 |
| Error | 107 | 3605.58 | 3605.58 | 33.697 | | |
| Lack-of-Fit | 51 | 1298.48 | 1298.48 | 25.460 | 0.61799 | 0.958277 |
| Pure Error | 56 | 2307.11 | 2307.11 | 41.198 | | |
| Total | 110 | 4009.10 | | | | |

As predicted for H2, the results from the regression analysis showed a significant interaction ($F = 7.20674$, $p < 0.05$) between framing and self-confidence levels. To further support this finding, the researcher divided self-confidence data into two groups and ran an ANOVA to analyze the data.

Table **4-14**: ANOVA output for H2 in main study.

| Factor | Type | Levels | Values |
|---|---|---|---|
| self-confidence group | fixed | 2 | high, low |
| framing | fixed | 2 | average, range |

Analysis of Variance for perceived saving, using Adjusted SS for Tests

| Source | DF | Seq SS | Adj SS | Adj MS | F | P |
|---|---|---|---|---|---|---|
| self-confidence group | 1 | 73.26 | 122.12 | 122.12 | 3.51 | 0.064 |
| framing | 1 | 0.00 | 4.86 | 4.86 | 0.14 | 0.709 |
| self-confidence group*framing | 1 | 213.29 | 213.29 | 213.29 | 6.13 | 0.015 |
| Error | 107 | 3722.54 | 3722.54 | 34.79 | | |
| Total | 110 | 4009.10 | | | | |

The analysis from ANOVA confirms the results of the regression analysis. The interaction between self-confidence group and framing is significant ($F = 6.13$, $p < 0.05$). A plot graph and descriptive statistic further demonstrates the relationship:

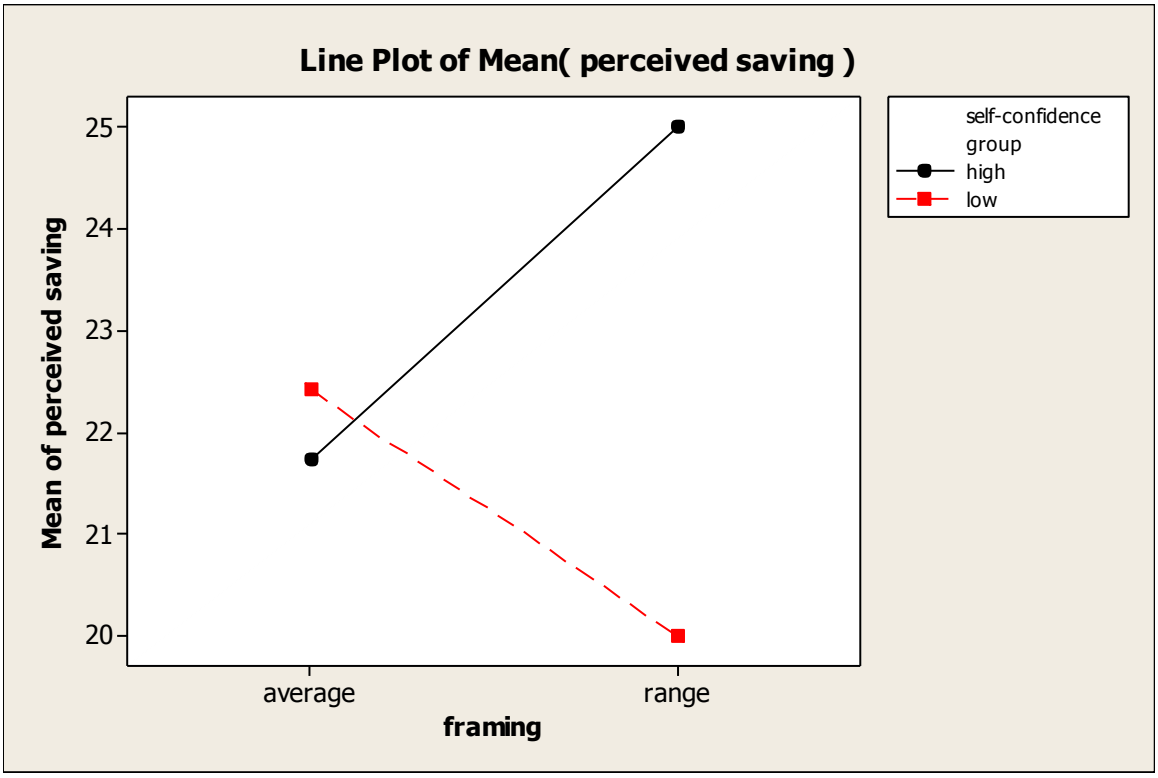



Figure **4-3**: Plot graph for H2 in main study.

Table **4-15**: Descriptive statistics for H2 in main study.

**Results for self-confidence group = high**

| Variable | framing | Percent | Mean | SE Mean | StDev | Median |
|---|---|---|---|---|---|---|
| perceived saving | average | 60.4167 | 21.724 | 0.970 | 5.223 | 25.000 |
| | range | 39.5833 | 25.00 | 1.58 | 6.87 | 25.00 |

**Results for self-confidence group = low**

| Variable | framing | Percent | Mean | SE Mean | StDev | Median |
|---|---|---|---|---|---|---|
| perceived saving | average | 57.1429 | 22.42 | 1.04 | 6.23 | 25.00 |
| | range | 42.8571 | 20.00 | 1.03 | 5.37 | 20.00 |

The solid line of this graph denotes the perceived savings for people high in self-confidence, while the dashed line denotes the perceived savings for people with low self-confidence. The plot makes the interaction between self-confidence and framing quite clear and the regression analysis shows a significant interaction ($F = 7.20674$, $p < 0.05$). Therefore the results also support H2. These findings indicate that when people compare range framing with average framing, self-confidence works as a moderator in the process. The framing preference reverses for people high in self-confidence and for those low in self-confidence.

# Chapter 5

## General Discussion

The purpose of this research is, by using anchoring and adjustment theory and self-confidence theory, to investigate how consumers perceive savings in different framings of tensile price claims. To collect data and test the two hypotheses, the researcher conducted a pilot study and main study. The pilot study was a mixed study while the main study was a between subject quasi-experiment.

In general, the results agree with the predictions proposed in the hypotheses. H1 and H2 were supported by main study. The theoretical rationale driving H1 and H2 is anchoring and adjustment theory. To briefly recapitulate this study's findings, when comparing maximum tensile price framing with minimum tensile price framing, people perceive greater savings from maximum framing than they do from minimum tensile price framing regardless of self-confidence. However, when comparing range tensile price framing with average tensile price framing, self-confidence levels function as a moderator in this relationship, meaning that there is an interaction between framing and self-confidence level. People with high self-confidence perceive more savings in range framing than they do in average framing, and vise versa for people with low self-confidence. These findings confirm the statements from previous studies that confidence may influence the judgment process (Johnson, p24; Blais, Thompson, Baranski, 2004) and that self-confidence is a key factor that can impact choice preference (Reed, Mikels and Löckenhoff's, 2012)

Taken together, this current study sheds light on both the price framing topic and the self-confidence topic.

## Theoretical implications

A large body of literature focuses on price framing. Such literature indicates that discount framing has a steady impact on consumers' perceptions of deal value (Darke & Chung, 2005; Darke & Dahl, 2003). This current study contributes to the existing framing literature primarily in one aspect.

To date, very few studies combine self-confidence theory with price framing theory. This study addressed the need to take consumers' personality into consideration when examining their informational processes. The researcher initially proposed that the self-confidence level of consumers could be a potential moderator that works in consumers' process of anchor selection. By conducting two studies, the researcher obtained results that supported the moderating role of self-confidence. Therefore, this study contributes to price framing literature by involving self-confidence theory.

## Managerial implications

Gupta (1988) and Hardesty & Bearden (2003) indicated the importance of knowing the effects of sales promotions on what, when, and how consumers choose to purchase. To date, hospitality marketers employ different discount framings to attract

consumers' attention, allocating large costs in the process. Therefore, hoteliers and restaurant managers must understand both the full impact of discounting (Pavesic, 1985), as well as the condition under which consumers perceive the most savings. The present study gives managers an insight into the price framing setting. Because customers perceive more savings from maximum framing (save up to 40%) than they do from minimum framing (save 20% or more), managers should always choose maximum instead of minimum framing. Additionally, this study, by applying self-confidence theory, proposes that highly self-confident customers perceive more saving from range framing (save 20% to 40%) than they do average framing (save an average of 30%). This conclusion implies that managers can set price framing based on the characteristics of their target markets. The casino industry, for example, typically targets a group of people who are high in self-confidence and are generally risk seeking. Mangers, therefore, should apply range price framing instead of average framing because highly self-confident customers get more perceived value from range framing.

It is important to note these managerial implications derive from an experiment environment that applies moderate discount in a tensile price claim situation. It is possible that the findings may have limits on the lower or higher levels of discount in other situations.

# Chapter 6

# Conclusion

## Summary

Mobely, Bearden and Teel (1988) suggested that advertisers use discount information to stimulate store traffic and increase purchase behavior while also noting the abundance of research conducted within the field. They also mentioned, however, that a number of questions remain unanswered regarding the process of consumers judging different types of tensile price claims, such as advertised discounts focusing on the mean, range or upper and lower end-points of claimed savings. In response to their call, the researcher conducted the present study to explore how consumers perceive savings from different framings of tensile price claims. In addition, this study also examined how self-confidence levels of consumers influenced their perceived savings on tensile price claims.

First, the literature review section provided the theoretical rationales in relative fields to guide this study. Following that, the study proposed a conceptual model and two hypotheses.

In H1, the researcher used anchoring and adjustment theory to explain how consumers perceive savings when they compare maximum framing versus minimum framing. The results from pilot study and main study were consistent with the prediction in H1 thus supporting that the perceived savings in maximum tensile price claims are

significantly higher than that of minimum tensile price claims regardless of self-confidence level.

In addition, self-confidence theory provides the conceptual framework for H2. In H2, the researcher proposed that when consumers compare range tensile price claims with average tensile price claims, the perceived savings will be influenced by the consumer's self-confidence level, and that the perceived saving is reversed in the two groups (high vs. low confidence) of customers. The data analysis of the main study also supports Hypothesis 2.

In an academic perspective, this study validates the notion that anchoring and adjustment theory may explain consumers' informational process and demonstrates that self-confidence works as a moderator in this process. From the standpoint of marketing strategy, the findings in this study provide useful information regarding the design of discount framing.

## Limitations

As with all experimental studies, this study is not free of limitations. First, this study focused only on moderate discount levels without addressing consumers' perceptions on other levels of tensile price claims. Second, this current study only examined the amount of perceptive savings, and it did not look at consumers' buying intentions in relation to the different framings of tensile price claims. Thirdly, according to White (2009), an important attribute of people with high self-confidence is that they typically believe in positive achievements during certain scenarios, and this study is

conducted under a certain scenario that involves imprecise and ambiguous information. How self-confidence level influences the perceived saving in other situations also needs to be addressed.

## Directions for future research

The limitations of this study gesture towards opportunities for future research. In order to gain a complete understanding of price framing, future researchers may undertake more studies in this field.

The prevalence of tensile price claims suggests the need for more studies in this field (Mobley, Beadren &Teel, 1988). This current study only involved a moderate discount level, so further studies may explore the effects of different discount levels. For example, with a high discount level in tensile price, there may be a "too good to be true" mentality (Shimp & Bearden, 1982). This means that, if a tensile price claim with large discount amount exceeds the believability standards of consumers, consumers will doubt the reliability of the tensile price claim.

In addition, this current study only examined the saving perception. In doing so, this study leaves an important question: does the framing of tensile price really have a robust impact on the buying intention? Such an important question could and should be addressed by future researchers.

Furthermore, in Mobley, Bearden and Teel's article (1988), they cited Kenzie's comment (1986) that, unlike tensile price claims, concrete advertisements provide detailed information about objects, outcomes, actions and situational contexts, indicating

that concrete discount messages attract more attentions and have more impacts on consumers than tensile price claims do. Therefore, more comparisons between concretely worded claims versus tensile price claims could an interesting topic.

This study only used one personality trait, self-confidence, to explore how consumers perceive savings in tensile price claims. Future researchers may tap into other personality traits to explore how they influence the perceived savings on tensile price claims or concretely worded discount framing.

Finally, future studies could use managerial expectations and feedbacks to suggest new directions (Hardesty & Beadern, 2003).

## Appendix A

## Questionnaire for Pilot Study

Thank you for your participation! This questionnaire is only for research purpose and we will not reveal the information to other individuals or organizations. If you have any other questions, please feel free contact the researcher at following address.
Landie Qiu: lxq114@psu.edu. 122 Mateer Building, The Pennsylvania State University.

1. I feel capable of handling myself in most social situations.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

2. I seldom fear my actions will cause others to have a low opinion of me.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

3. It doesn't bother me to have to enter a room where other people have already gathered and are talking.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

4. In group discussions, I usually feel that my opinions are inferior.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

5. I don't make a very favorable first impression on people.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

6. When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |

7. It is extremely uncomfortable to accidentally go to a formal party in street clothes.

| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

8. I don't spend much time worrying about what people think of me.

| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

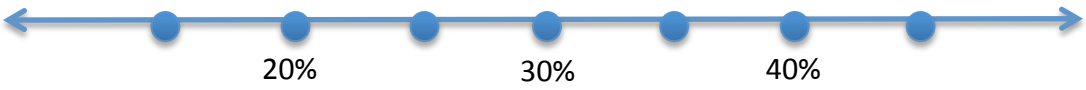
9. When in a group, I very rarely express an opinion for fear of being thought ridiculous.

| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

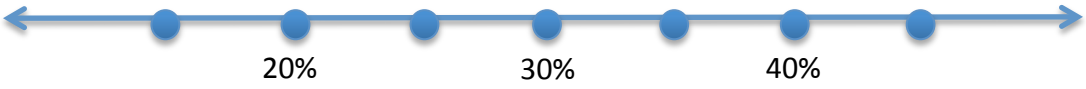
10. I am never at a loss for words when I am introduced to someone.

| 1=strongly disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

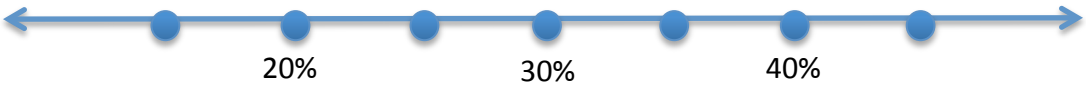
11. Please imagine that you see a discount message **A** showing **Save an average of 30%.** How much saving do you think you will most likely experience according to this advertisement, place circle it.



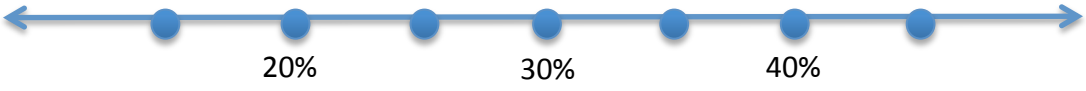

12. Please imagine that you see a discount message **B** showing **Save 20% to 40%.** How much saving do you think you will most likely experience according to this advertisement, place circle it.




13. Please imagine that you see a discount message **C** showing **Save up to 40%.** How much saving do you think you will most likely experience according to this advertisement, place circle it.




14. Please image that you see a discount message **D** showing **Save 20% or more.** How much saving do you think you will most likely experience according to this advertisement, place circle it.



15. My gender is

male female other

16. My age is

18-29 30-39 40-49 50-59 more than 59

17. My ethnicity is

Caucasian African American Hispanic Asian other_____

18. My education is

high school some college completed college completed grad school other_____

19. My annul income is

under$20,000 $20,000-49,999 $50,000-79,999 $80,000-109,999 above$110,000

## Appendix B

## Questionnaire for Main Study

Thank you for your participation! This survey is only for research purposes and we will not reveal your information to other individuals or organizations. Taking part in this study is completely voluntary and we appreciate your honest responses to the questions in the survey. If you have any other questions, please contact the researcher. Landie Qiu: lxq114@psu.edu.

1. I feel capable of handling myself in most social situations.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

2. I seldom fear my actions will cause others to have a low opinion of me.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

3. It doesn't bother me to have to enter a room where other people have already gathered and are talking.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

4. In group discussions, I usually feel that my opinions are inferior.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

5. I don't make a very favorable first impression on people.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

6. When confronted by a group of strangers, my first reaction is always one of shyness and inferiority.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1=strongly disagree | | | | | | | | 7=strongly agree |

7. It is extremely uncomfortable to accidentally go to a formal party in street clothes.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

8. I don't spend much time worrying about what people think of me.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

9. When in a group, I very rarely express an opinion for fear of being thought ridiculous.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

10. I am never at a loss for words when I am introduced to someone.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

11. Please imagine that a shopping mall that you trust in has launched a promotion, and this is the advertisement: **SAVE 15% TO 35%.** Please write down how much saving you think you will most likely experience at the first moment you see the advertisement.

My perceived saving will be _____ %.

12. I trust this store is competent at what they are doing.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

13. I feel generally that this store is trustworthy.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

14. I feel generally that this store is very responsive to customers.

| 1=strongly disagree | | | | | | | | 7=strongly agree |
|---|---|---|---|---|---|---|---|---|

15. My gender is

male female other

16. My age is

18-29 30-39 40-49 50-59 more than 59

17. My ethnicity is

Caucasian African American Hispanic Asian other_____

18. My education is

high school some college completed college completed grad school other_____

19. My annul income is

under$20,000 $20,000-49,999 $50,000-79,999 $80,000-109,999 above$110,000

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