Let's not lose hope – Maximizers as Prospective Optimists

by

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A Thesis

presented to

The University of Guelph

In partial fulfilment of requirements

for the degree of

Master of Science

in

Marketing and Consumer Studies

Guelph, Ontario, Canada

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ABSTRACT

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This thesis examines whether maximizing, a uni-dimensional construct, defined as the identification of the optimal, is significantly related to anticipatory assessments of happiness and satisfaction in the context of experiential and material consumption. Specifically, this study investigates whether the type of purchase and presence of optimality claims from a credible source significantly impacts the maximizer's prospective evaluations of happiness and satisfaction. Results suggest that maximizers anticipate greater affective evaluations for experiential, material, as well as optimally framed purchases as compared to satisficers. As such, maximizers are more likely prospective optimists. Contrary to existing research, this finding entails significant theoretical implications for research as it challenges the current conceptualisation of maximizing as a recipe for unhappiness. Limitations and pathways to future research are discussed.

Acknowledgements

While there are numerous people who have helped me successfully start and end this journey of earning an MSc in Marketing, there are few people without whom this journey would not have started or ended. First, I want to thank Dr. Vinay Kanetkar. You understand mundane and deviant things in our society like nobody else and to me, your intelligence, honesty and niceness have made this journey worthwhile. When I think of purple carrots, I will be reminded of you. Thank you for being so patient and kind to me, even though at times I didn't deserve any of it.

I want to thank Dr. Sunghwan Yi. I learned how to think critically and poke holes in my theory because of you. As a novice, I assumed I am writing the best thesis in the world but you made me understand and realize that questioning everything is as important as believing in something. I want to thank Dr. Karen Gough. You have been exceptionally welcoming, generous and kind. My first year in Guelph started off with me presenting in your class and I remember you saying "Excellent job". You have no idea how much that meant to me back then. I want to also thank all the friends I have made here, some who have left and some who have stayed. You helped me keep my sanity. Cori, Domenica and Rita – thanks for being so welcoming and for just being concerned with my progress.

I want to thank my mom and my sister for listening to me rant about my thesis even though you did not understand much of it. And I want to thank Rahim Penangwala – I pursued education because of you, I never lost hope because of you and I will never doubt my capabilities because of you. Last but not the least; I want to thank my dad. Even though you are not with me, you still are.

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CHAPTER 1: INTRODUCTION

How do individuals make decisions? Are human beings capable of making rational, optimal decisions or as Simon (1956) suggests, do we "neither have the sense nor the wits to discover an optimal path…" (p. 136). More than 30 years of research has questioned the economic perspective that exemplifies the capabilities of human beings to make optimal, utility-maximizing decisions. This view suggests that human beings, at any given point in time, have abundant or unlimited resources at their disposal to arrive at the optimal conclusion. With the assumption that individuals have unlimited cognitive abilities to process any amounts of information at any given point in time, the Rational Choice Theory asserts that presence of multiple options to choose from is beneficial if one has the goal to maximize utility. It also suggests that individuals usually have one single goal at a given time and there is potentially no probability of error. These normative standards, however, are consistently violated as progressive development in the field of behavioural decision making has demonstrated over the last half century. The quest for optimality is not always reasonable, and more importantly, individuals assume multiple goals in different contexts and across time. Several researchers (e.g. Simon, 1956; Einhorn & Hogarth, 1981) analyzed the departures from these prescriptive standards and questioned not only human rationality but also the idea that human beings are bestowed with unlimited processing powers. Progressive developments in this field demonstrated how individuals rely on mental shortcuts or heuristics (Kahneman & Tversky, 1981) to make decision making less exhausting and also, that human beings do not always have a rational basis for making decisions.

Simon (1955) in his assessment of decision making strategies commonly employed by individuals, suggested that in everyday life, people assume the goal of satisficing, or in other

words, individuals are more likely to select an alternative that does not meet their aspirational standards, but instead satisfies a lower standard which is acceptable or good enough. To satisfice means to engage in a strategy that does not relegate the optimal as the standard. To maximize, on the other hand and in accordance with utility maximization, is simply to engage in a strategy that attempts to arrive at the optimal conclusion. Extending this theory of satisficing as a decision making strategy to a theory of maximizing, Schwartz et al. (2002) investigated if certain individuals are more likely to be maximizers or satisficers when making decisions.

Consider Jeff who is 40 years old, earns $200k a year through his e-commerce based start-up and is single. It is usually an onerous task for Jeff to decide on what to order in restaurants, pick an outfit for an important meeting, and choose a box of cereal from the cereal aisle. He is not married since he is still looking for the perfect woman (just like he is still looking for the perfect cereal). It would be hard to argue the idea that Jeff is a prototypical maximizer. Maximizers are those individuals who approach choices with the primary aim of arriving at the best possible alternative (Schwartz et al., 2002; Dar-Nimrod, Rawn, Lehman & Schwartz, 2009). Now, consider Brian, who is also 40, and earns $200k a year through a job he has held with a consulting firm for the last ten years. He has consistently purchased the same brand and type of cereal since he was in college, wears a white shirt to his important meetings, is married with two children and is content with watching repeat episodes of Modern Family with his family every other night. Brian would fit squarely into the definition of a classic satisficer. Satisficers are those individuals who are ordinarily satisfied (or appear to be) with the option that meets their good enough threshold (Schwartz et al., 2002).

Incontestably, maximizers, driven by their tendencies to carefully consider all available options, strive to make optimal choices, however, research has consistently suggested that the

search for the best alternative considerably impacts the degree to which maximizers experience satisfaction and happiness with their final chosen alternative (Iyengar, Wells & Schwartz, 2006, Iyengar, 2010). Evaluation of every unique option prior to making a final choice can be a daunting task, given the proliferation of choices that the average consumer encounters on a daily basis (Schwartz, 2010). As the number of options to choose from increase, the probability of making optimal choices decreases and so does the resulting satisfaction associated with these choices, a phenomenon called the choice paradox (Schwartz, 2000; Iyengar et al., 2004). Within this context, Schwartz et al. (2002) extended Simon's (1955) conceptualization of maximizing and satisficing as decision making strategies to individual differences. Maximizers are individuals who have exceedingly high standards regarding what is considered to be optimal and in the quest to arrive at the best, the maximizer engages in cognitively exhausting search processes and invariably experiences difficulty in making the final choice. Maximizing, in Schwartz et al's (2002) conceptualization, is a multi-dimensional construct characterised by high standards, difficulty in making decisions and engagement in alternative search processes. Because choices, in general, do not come tagged as optimal, the maximizer exhibits reluctance to commit to a choice (Sparks et al., 2011), internalizes negative outcomes (Polman, 2010), engages in extensive search processes (Chowdhury et al., 2012) and experiences feelings of regret (Iyengar et al., 2006). Ultimately, the maximizer experiences unhappiness and dissatisfaction with the selected choice.

Schwartz et al. (2002) along with several other researchers (e.g. Iyengar et al., 2006) argue that maximizing is the recipe for reduced happiness and satisfaction; however, the significance of this relationship is possibly attributable to measurement and contextual factors. More recent studies have questioned the definition of the construct of maximizing, and consequently the way

in which it is measured and assessed (e.g. Purvis et al., 2011; Lai, 2010). According to Diab et al. (2008) maximizing is a uni-dimensional construct which, at its core, is concerned with the identification of the optimal, and is only peripherally associated with decision difficulty or alternate search. When these tangential facets are excluded from the conceptualisation of maximizing, maximizers are found to be no less happy or satisfied as compared to satisficers (Diab et al., 2008), quite contrary to the findings of Schwartz et al. (2002) and other researchers (e.g. Iyengar et al., 2006).

Maximizing is possibly related to unhappiness and dissatisfaction when maximizers have *already* committed to a choice. Across numerous studies, researchers have assessed the maximizer's retrospective evaluations of happiness and satisfaction, whether it was with a job (Iyengar et al., 2006) or a product they had recently purchased (Chowdhury et al., 2012). Individuals, however, been suggested to evaluate future events with greater affect and attach more value to such events as compared to past events (Caruso, Gilbert & Wilson., 2008). Though maximizing tendencies with respect to future evaluations of affective states has not been directly investigated, previous research has found that maximizers expect themselves to make precise forecasting predictions and are over confident in their abilities to accurately predict an outcome (Jain et al., 2011). Because retrospective evaluations are not independent of contextual factors, it is likely that such evaluations result in greater unhappiness and dissatisfaction. Future assessments, on the other hand, are more autonomous in nature and more prone to stronger affective evaluations (Kumar & Gilovich, 2015; Gilbert, 2006; Caruso et al., 2008).

To the maximizer, optimality is of paramount importance, whereas to the satisficer, optimality is relatively inconsequential. It has been suggested that when maximizers are explicitly told by a credible source that they have made the optimal choice, this feedback would

considerably increase their happiness and satisfaction as compared to their counterparts (Sparks et al, 2011). Moreover, the maximizer engages in social comparison in order to be certain regarding the optimality of his selected choice (Iyengar et al., 2006). The satisficer, on the other hand, is content when the good enough alternative that satisfies his minimum threshold of suitability has been selected. To the maximizer, authentic feedback emphasizing optimality from a non-biased, credible source, therefore, would greatly increase his affective evaluations (Sparks et al., 2011).

It has been shown that certain purchases are more likely to increase individual's affective evaluations, in retrospect and in prospect (van Boven & Gilovich, 2003; Kumar & Gilovich, 2014). Experiential purchases, those made with the primary intention of acquiring a life experience, as compared to material purchases, those made with the intention of acquiring a physical, tangible product (van Boven & Gilovich., 2003), are evaluated less comparatively. In his quest to maximize outcomes, the maximizer heavily relies on external sources of information and engages in social comparison in order to confirm the optimality of the selected option (Iyengar et al., 2006; Schwartz et al., 2002). Reliance on external sources for information leads to feelings of regret and counterfactual thinking, consequently impacting happiness with the selected choice (Parker et al., 2007). Social comparison, however, is suggested to be less pronounced for experiential investments primarily because they are not as subject to ruminations or scrutiny (van Boven, 2005) and are also perceived to be somewhat less finite and concrete as compared to material purchases (Gilovich et al., 2014). More than a decade of research has demonstrated that experiential purchases result in greater happiness and satisfaction in retrospect (van Boven & Gilovich., 2003) and higher ratings of excitement and pleasantness, in prospect (Kumar et al., 2014).

This study broadly aims to investigate if the strength of the relationship between maximizing and unhappiness can be alleviated or mitigated by assessing whether the presence of optimality (versus absence) and type of purchase (experiential versus material) influence the maximizer's anticipatory assessments of happiness and satisfaction. This thesis examines the maximizer's prospective happiness and satisfaction with a hypothetical purchase of a 4K Ultra HD TV, framed to highlight experiential and material aspects of the TV in the presence or absence of optimality from a credible source. Purchases, experiential and material, framed as optimal are hypothesized to result in greater anticipatory happiness and satisfaction for the maximizer. Moreover, purchases framed as experiential (versus material) are hypothesized to result in greater anticipatory happiness and satisfaction for the maximizer.

Using Structural Equation Modeling (SEM) and Analysis of Variance (ANOVA) as the methods of analysis, the study found a main effect of maximizing on anticipated happiness and satisfaction. No significant interactions were found between maximizing and purchase type. Overall, partial support was found for the hypotheses being tested. As opposed to Schwartz et al's (2002) conceptualization, this thesis did not find that maximizing significantly predicts unhappiness. This thesis also does not support Diab et al's (2008) findings that suggest that there is no difference in happiness evaluations for maximizers and satisficers respectively. Maximizers anticipated being significantly happier and more satisfied across *all* purchase conditions. The results, overall, suggest that maximizers assess anticipatory affective states more positively as compared to satisficers. The findings of this study further enhance the core understanding of maximizing as a personality trait and most importantly, emphasize that maximizers are more likely prospective optimists, thereby providing a renewed theoretical understanding of the maximizer which is not as grim as existing theory would suggest.

CHAPTER 2: LITERATURE REVIEW

The literature review is organized into four broad sections, each emphasizing the theoretical foundations on which the present study is based. The first section briefly describes the assumptions of the prescriptive rational choice theory and provides the context within which the distinction between maximizing and satisficing came out. The consequent section explains the genesis of maximizing and satisficing as individual differences in the context of the choice paradox. In addition to reviewing the literature on the measurement of the maximizing tendency by Schwartz et al. (2002) and Diab et al. (2008), it also reviews the research assessing the relationship between maximizing and (un) happiness. The section of prospective happiness and maximizing elaborates on why future affective evaluations are accompanied by greater affect and value as compared to retrospective evaluations and why the maximizer's overconfidence in predicting future outcomes might extend to his assessments of future affective evaluations as well. Because maximizers seek to alleviate the uncertainty associated with the optimality of a purchase, the next section examines the potential positive effect of the presence of optimality by a credible source on assessments of future happiness and satisfaction. The following two sections reviews the literature on social comparison and maximizing, and experiential and material purchases. The last section briefly provides rationale for using framing of purchases and why it is more advantageous as compared to using more traditional methods such as recall of past purchases.

2.1 Utility Maximizing Model

In order to fully understand the genesis and development of the constructs of maximizing and satisficing, it is essential to evaluate the research context in which these distinctions came

about. Decisions are an integral part of everyday life and as long as human beings continue to make decisions, they will remain an indispensible component of scholarly agendas too. Decision making research has remained a fairly attractive domain to researchers, primarily for two reasons. First, it is because decisions and judgments are a ubiquitous component of human activities that makes it such an intriguing phenomenon. Second, human beings want to make better decisions and perhaps, the idea that researchers can help them make better choices has provided further impetus to advancements in the field of decision making (Hogarth, 2007). Therefore, it is of little doubt that research on judgment and decision making permeates many disciplines like Psychology, Economics, Accounting, Marketing and Management, and that the impact of such research is widely expressed, by scholars and practitioners alike (Poulton, 1994).

At the very core of decision making research lies the interplay between two types of models: normative (prescriptive) models that focus on how decisions ought to be made, and descriptive models that explain how decisions are actually made. Normative theories go by the assumption that human beings are programmed to make rational, optimal decisions, thereby increasing utility (Simon, 1978; March, 1978). Until a few decades ago, decision making behaviour was primarily explained by prescriptive models that emphasized how decisions *should* be made (Kerlinger & Lee, 1999) and not how we actually make them. According to this perspective, decision makers must first, be aware of the problem in order to obtain additional information regarding alternatives, if any, carefully and systematically evaluate the likelihood and preference for the consequences associated with each action and eventually, select the option that provides the maximum utility (Luce & Raiffa, 1957; von Neumann & Morgenstern, 2007; Simon, 1978; Edwards, 1961; Lau & Levy, 1998). Therefore, theoretically, human beings are capable of identifying the optimal option according to the maximum utility model (Nutt, 2008).

Going by these assumptions, human beings are capable of being both, economical and rational (Simon, 1955). This individual is expected to have unlimited cognitive capacities and also have knowledge of the important aspects of the environment which, if not absolutely complete, is at least impressively clear and illustrative. He is assumed also to have formed a well-organized and stable system of preferences, and a skill in performing elaborate and mundane mathematical computations that enables him to effectively calculate which of the several alternatives available to him will permit him to reach the highest attainable point on his preference meter (Simon, 1955).

2.2 Maximizing and Satisficing

Progressive development in economics raised great doubts as to whether this prescribed and highly elaborate model of economic man provides a suitable foundation on which one can establish a theory- whether it be a theory of how people do behave, or of how they "should" behave (Lau & Levy, 1998). Simon (1955, 1956), in addition to calling man “boundedly rational”, suggested that maximization, though ideal from the economic perspective, is unattainable in reality. In the strict definition of a maximising model as proposed by Simon, “the correct point of termination is found by equating the marginal cost of search with the (expected) marginal improvement in the set of alternatives” whereas in a satisficing model, “search terminates when the best offer exceeds an aspiration level that itself adjusts gradually to the value of the offers received so far” (Simon, 1978, p. 10). Simon (1955) suggested that in real life choice-making situations, individuals assume the goal of satisficing and the idea that individuals establish a threshold that meets their minimum acceptability requirement seemed reasonable.

In the 1990s, with the rising popularity of the Prospect theory (Kahneman & Tversky, 1979), several researchers began a systematic investigation of the how choices are made in real

life and the negative consequences associated with choice-making. Shafir and Tversky (1992), Greenleaf and Lehmann (1995) and Dhar (1997) were among the first few researchers to explore the underlying mechanisms and operating principles of the phenomenon of choice overload. These researchers demonstrated that when presented with a large number of equally attractive alternatives, consumers tended to defer their choice, stick with a default option, experience conflict, or simply refrain from making a choice. Choices require difficult trade-offs and the prospect of dealing with these trade-offs renders choice making a cognitively challenging process, with consumers processing only a fraction of information as the number of choices increase (Hauser & Wernerfelt, 1990). Consequently, extant work in this area has also highlighted that consumers employ simple mental heuristics in making decisions – as the complexity of making choices increases, people tend to rely on simple shortcuts which reduces the burden of processing large amounts of information (Timmermans, 1993).

In one of the seminal researches in the domain of choice overload, Iyengar and Lepper (2000) investigated buying behaviour in the context of small and large assortment of choices. These researchers set up a tasting table in a grocery store with two assortments of exotic jams – small (consisting of a variety of six types of jam) and large (consisting of a variety of 24 types of jam). Consumers were given a $1 off coupon which they could use towards the purchase of any type of jam. The study found that while a larger number of people were more attracted to visit the large assortment counters, when it came to the actual purchase of the jams, 30% of the consumers purchased from the small assortment counter while only 3% purchased from the large assortment counter. These results led the authors to conclude that the presence of too many options reduces the motivation to make a choice and consequently, diminishes the willingness to buy.

Schwartz (2004) complements this existing research and extends the possibility that having more options to choose from is not necessarily always good. Ranging from the choices one considers when choosing retirement pensions, to beauty products, to medical health care plans, the plethora of choices often result in negative feelings of regret, high expectations and the constant need to make optimum choices. Though one might argue for this sheer exaggeration of numbers (not all stores have too many options, every consumer has a different set of needs to address, etc.), it does raise some important concerns regarding the explosion of products and services and its impact on consumer's affective evaluations (Schwartz, 2002).

To address the possibility that making choices can prove to be more difficult for certain types of individuals, Schwartz et al. (2002) further extended Simon's (1955) conceptualization of maximizing and satisficing to individual differences. The researchers developed psychological profiles of the maximizer and satisficer to compare their decision-making styles and strategies to arrive at a final conclusion. Schwartz et al. (2002) suggest that a typical maximizer is characterised by a need to have and maintain high standards, invariably preceded by an intensive, cognitively-depleting search processes, thereby rendering the final selection of the optimal choice a daunting and difficult decision. The three facets of maximizing - the quest for optimality, engagement in exhaustive search processes and difficulty in making the final choice, all are suggested to contribute to the maximizer's unhappiness and dissatisfaction with his final selection (Dar-Nimrod et al., 2009). Satisficers on the other hand, adopt a more malleable decision making approach. Once their minimum acceptability threshold is met, the satisficers look no further (Iyengar et al., 2006). In other words, the satisficer sees the best in the good enough. As a result, satisficers report high levels of satisfaction and happiness, and low regret with their final chosen alternative as compared to maximizers (Schwartz et al., 2002).

Indeed, it is likely that individuals maximize or satisfice given different contexts, however, Schwartz et al. (2002) investigated whether some individuals are more (or less) likely to maximize in general. Schwartz et al. (2002) created two instruments that measured maximizing/satisficing tendencies and tendencies to experience regret. In order to create these scales, university students responded to a 42-item questionnaire that assessed maximizing tendencies, regret, subjective happiness, tendency to feel depressed and dispositional optimism. The scale was reduced to 22 items on account of item reliability and presented to 11 judges who rated each of the items on the criteria of either "getting the best out of any situation" or "settling for the good enough". The items were further reduced to 17 and after the elimination of four more factors that failed to load on any of the current factors; the revised 13-item Maximizing Scale was created. The 13 items on the scale represent the individual facets of Decision Difficulty, Alternative Search and High Standards.

The Maximizing Scale has been vastly employed in consumer behaviour research and the link between maximizing and feelings of negative affect, regret and unhappiness has been identified across several studies (e.g. Iyengar et al., 2006; Polman, 2010). Schwartz (2004) suggested that maximizing acts like a prescription for unhappiness and relegates the profusion of choices in modern society as one of key contributors to the maximizer's unhappiness. Adding impetus to this initial observation, Iyengar et al. (2006) found that even though maximizers secured jobs with 20% higher salaries as compared to satisficers, they reported being dissatisfied with their final chosen job offer and also experienced greater feelings of negative affect during and after the job search process. In a study by Chowdhury et al. (2009), the researchers found that maximizing was positively related to the perception of more time pressure in making decisions with time constraints, which consequently resulted in reduced happiness with selected

option. Parker et al. (2007) found that maximizers were more likely to show counter-productive decision making styles and experience more regret as compared to their counterparts. The regret for not choosing forgone options or the regret for not considering every possible alternative was suggested to ultimately lead to dissatisfaction and unhappiness with the final choice. This stream of research, following Schwartz et al's (2002) conceptualisation of a maximizer, indeed paints an overwhelmingly dismal picture of the maximizer by demonstrating significant positive relationships between maximizing, dissatisfaction, unhappiness, negative affect, and regret.

Recently, however, some researchers have not only questioned the robustness of the psychometric properties of the Maximizing Scale but also raised concerns about the very definition of the construct of maximizing. Though the Maximizing Scale has been used more frequently and consistently in psychological and consumer behaviour research, it has been suggested it does not meet the accepted psychometric standards with respect to reliability and validity. According to Diab et al. (2008), at the trait level, maximizing implies "a general tendency to pursue the identification of the optimal alternative" (Diab et al., 2008, p. 365). In their re-assessment of the Maximizing Scale, Diab et al. (2008) found that though maximizing was positively related to regret, it was not significantly related to unhappiness or lower subjective well-being. The re-evaluation of the 13-items in Schwartz et al's (2002) scale reveal that it is a multi-dimensional scale and each of the 13 items on the scale do not load on to one single factor – maximizing or perusal of the optimal.

Diab et al's (2008) 9-item Maximizing Tendency Scale (MTS) was developed by examining the correlation between maximizing and other constructs such as tendency to feel regret, indecisiveness, avoidance in making decisions, neuroticism and satisfaction with life. This scale is reported to have greater internal consistency reliability and construct validity,

however, a very small number of studies have employed this scale. Nonetheless, the most relevant to the present study is the research conducted by Oishi et al. (2013). By using both Schwartz et al's (2002) and Diab et al's (2008) scale in a study across American and Japanese population, the researchers found that when maximizing was measured using Schwartz's (2002) scale as opposed to Diab et al's (2008) scale, Americans reported being less happy and more dissatisfied with their lives, in general, while the opposite was true when Diab et al's (2008) scale was used. In the Japanese sample, regardless of the choice of scale, the maximizers were less happy and satisfied with their lives.

Overall, the research employing both maximizing scales concludes that maximizing is either related to unhappiness (e.g. Schwartz et al., 2002) or does not significantly predict unhappiness (e.g. Oishi et al, 2013). Across most of these studies, however, affective evaluations were obtained retrospectively i.e. when the individual has already committed to a choice. In other words, individuals are asked to evaluate their happiness and satisfaction after the choice has already been made or by thinking about their general behaviours and decision making styles. Retrospective evaluations are not independent of contextual factors and are suggested to decrease in value over time, whereas prospective affective assessments are more likely to be evaluated with greater affect and increased value (Caruso et al., 2008).

2.2.1 Prospective Happiness and Maximizing

Several researchers have assessed the relationship between maximizing and retrospective evaluations. For example, in Iyengar et al's (2006) study, students were asked how satisfied they were with their job offers *after* they had already made their final choice. In Carrillat et al's (2011) study, participants were asked to evaluate a purchase they had already made in the past

and indicate their patterns of repeat buying behaviour. Another study by Dar-Nimrod et al. (2009) demonstrated that relative to assortment size, maximizers differed in their assessments of satisfaction and these assessments were measured after the choice had been made. Polman (2010) found that maximizers attract both, positive and negative outcomes due to engagement in search processes, however, it was not investigated whether maximizers were prospectively hopeful about attracting only positive (and not negative) outcomes.

Though it is likely that the maximizer evaluates past purchases more negatively as compared to satisficers, it is possible that he is more optimistic and hopeful about his future assessments. This is in line with Jain et al's (2011) findings that suggest that though maximizers expect to make impeccable forecasts about the outcome of a sports game (FIFA World Cup), they end up forecasting more poorly as compared to satisficers. In other words, maximizers are over-confident about their ability to predict accurately, however, they are actually far less accurate in actually making such predictions. In a similar vein, it is possible that when evaluating prospective happiness with a future purchase, the maximizer does not evaluate the prospective regret or negative affect that would accompany the purchase if it was actually made. In retrospect the maximizer is cognizant of forgone options (Iyengar et al., 2006). He is also more likely to feel negative affect because he has experienced difficulty in making the final decision after having cognitively depleting himself in the process of considering a plethora of possible alternatives (Polman, 2010). In prospect, however, it is likely that the maximizer's overconfidence in accurately forecasting his own abilities (Jain et al., 2011) extends to his future affective evaluations. This conforms to the model of Temporal Value Symmetry or the idea that individuals find more value in future events as compared to events that have already taken place (Caruso et al., 2008). In a study by Caruso et al. (2008), university students were sent an email

either before or after their winter break and asked questions pertaining to the destination of travel, length of travel, enjoyment, and willingness to extend the visit. It was found that participants who had not yet been on the winter break were more willing to pay an extra amount to extend their break and indicated greater anticipated enjoyment as compared to those who were asked to retrospectively evaluate their winter break. Because individuals tend to assign greater affective values to future events, prospective assessments appear to be more positive and optimistic as compared to retrospective evaluations.

The maximizer's anticipatory assessments of his affective states can be further augmented with the specification of optimality. Sparks et al. (2011) suggest that if maximizing is simply the perusal of the optimal as suggested by Diab et al. (2008), then it is likely that emphasis on optimality would impact the extent to which the maximizer experiences happiness with his chosen option. In other words, if the maximizer is provided with compelling feedback regarding the optimality of his choice, he would anticipate greater happiness and satisfaction (Sparks et al., 2011).

2.2.2 Maximizing: Is it all for the best?

Optimality is subjective in nature, and what may be optimal for one may not be construed as optimal for the other. One potential way to ensure that optimality has been attained is by assessing the chosen option relatively through engagement in comparative processes (Iyengar et al., 2006). The maximizer is shown to rely on external sources of information to eliminate the uncertainty associated with a choice. Therefore, Sparks et al. (2011) suggest that if this uncertainty was mitigated by emphasizing optimality from a credible third-party, it is likely that maximizers would provide positive assessments with their purchase (Sparks et al., 2011).

A review of existing literature shows that the main drivers of the maximizer's unhappiness and dissatisfaction are more significantly related to engagement in exhaustive search processes and difficulty in committing to a choice (e.g. Iyengar et al., 2006). To illustrate, prior research has suggested that maximizers spend more time in reviewing and evaluating alternate options and this causes cognitive resources to deplete, ultimately reducing satisfaction. More specifically, in a hypothetical gift-giving scenario, Dar-Nimrod et al. (2009) investigated if maximizers were more likely to engage in pre-purchase browsing behaviours on a hypothetical online gifting portal. The maximizers evaluated significantly more options as compared to satisficers, and ultimately were dissatisfied with their chosen alternative. Extending this research, Sparks et al. (2011) suggested that maximizers are less likely to commit to their choices, thereby restricting them from reaping the benefits of psychological commitment. More specifically, maximizers seek to verify that the option selected by them is indeed the best and hence, they rely on external sources for information to obtain some type of relative confirmation (e.g. Iyengar et al., 2006). When maximizers are given more time to evaluate their chosen option, they more likely to change their preferences, thereby displaying less of a classic form of dissonance reduction that usually accompanies committed choice (Sparks et al., 2011).

The maximizer engages in more pre-purchase browsing behaviour, evaluates more options, is more likely to change his preferences given more resources and is less likely to commit to a choice. Sparks et al. (2011) suggest that engagement in such thought processes and behaviours is simply to alleviate the uncertainty regarding the optimality of selected choice. Though what constitutes optimality is entirely subjective, it is likely that if optimality is made salient by a credible, non-biased, authentic source, maximizers would anticipate greater happiness and satisfaction with their decision (Sparks et al., 2011). Claims regarding optimality can be

emphasized by providing compelling authentic feedback about a purchase one has already made, however, such claims can also be highlighted for a decision that one could potentially make in the future.

Since identification of the optimal does not occur in isolation, the maximizer is suggested to engage in comparative processes to assess if the optimal has been achieved. Researchers have demonstrated that prospective evaluations associated with experiential purchases are not only more positive in nature as compared to material purchases but also less subject to social comparisons (Carter & Gilovich, 2010).

2.2.3 Maximizing and Social Comparison

A maximizer is driven by his quest for arriving at the best conclusion; however, seeking the optimal requires a thorough assessment of several competing options. Evaluation of every possible option is not always feasible and evidently, there are time constraints. Even if evaluation of every alternative was somehow possible, it is difficult to know exactly what constitutes the optimal. Given such constraints, Schwartz et al. (2002) proposed that maximizers would show more inclination to depend on information from outside sources in order to confirm or disconfirm the quality of their chosen option. Maximizers are suggested to engage in social, counterfactual and product comparison which consequently leads to higher tendencies to experience regret and unhappiness. Moreover, the relationship between maximizing and negative affect appears to be significant in the presence of social comparison. In one of their studies, Schwartz et al. (2002) manipulated social comparison by the presence of a confederate who completed specific anagram tasks along with the participants recruited for the study. When the confederate solved twice as many anagrams as the participant (upward social comparison),

maximizers provided lower assessments of ability on the task and elevated negative affect, as compared to satisficers. In another study, Iyengar et al. (2006) found that those who scored high on maximizing secured better jobs with higher starting salaries as compared to satisficers; however, they were more dissatisfied with their chosen job, experienced more negative affect during the job search process, displayed heavy reliance on external sources of information (peers), and reported feeling more regret as compared to satisficers. Most importantly, the relationship between maximizing and negative affect was fully mediated by reliance on external sources. The researchers concluded that though maximizing does result in the attainment of better decision outcomes as indicated by higher starting salaries, the subjective experience accompanied by maximizing is one characterized by regret and unhappiness, partly attributable to greater dependence on other sources. Therefore, it appears that it is the process of decision making that impacts consequent experiences, as opposed to the outcome of the decision (Iyengar et al., 2006; Iyengar, 2010).

Polman (2010), by building on existing work in the area of cognitive failures or unsuccessful searches (Lodewijkx, 2006), suggested that those who maximize their choices consistently initiate new searches that are as likely to be as successful as much as they are likely to be unsuccessful. Polman (2010) defined positive outcomes as those that were high in quality whereas negative outcomes were defined as those low in quality. More specifically, participants were told to generate several alternate uses of a brick and the quality of alternate uses was independently coded as low or high. In addition, a third of the participants were told that the average number of uses generated by students was 50 (upward social comparison), and a third of the participants were told that the average number of uses generated by students was 10 (downward social comparison). The remaining participants were given no information regarding

the performance of others. The results indicated that when participants are provided with information regarding other's performance, the effect of seeking low quality alternatives on affect was significant. In other words, when upward social comparison is induced, participants indicate feeling more negative affect as compared to downward or no social comparison.

The tendency to engage in social comparison is suggested to be more pronounced and elaborate for certain types of purchases (van Boven & Gilovich, 2003; Carter & Gilovich, 2010). More specifically, some researchers have suggested that material purchases, due to their very nature of being physical and tangible, are evaluated in more comparative terms as compared to experiential purchases (Carter & Gilovich, 2010). Carter and Gilovich (2010) argue that "the enjoyment one derives from an experiential purchase may be less affected by comparison to other experiences one might have pursued than the enjoyment one derives from a material possession is affected by other possessions one might have acquired" (p 146). The following section of this paper summarizes some of the significant research in the domain of experiential and material purchases that are most relevant to the present study.

2.3 Experiential Purchases and Social Comparison

One of the foundational studies that support the contention that experiential purchases are less prone to elicit social comparison is the one conducted by Solnick and Hemenway (1998). These researchers presented Harvard University students and faculty with two scenarios via a survey. In the first scenario, participants were presented with two choices. First, the respondents were told to imagine that they were earning an annual salary of $50,000 and others were making $25,000. In the second scenario, the respondents were earning an annual salary of $100,000 while others were making $200,000. Participants were then asked which option they would

prefer. Approximately 50% of the participants reported having a preference for the “positional” outcome, signifying a positional advantage in which they would make more money as compared to their colleagues. In the second scenario, participants were again presented with two choices - one in which they were told that they would get two weeks of vacation time, while their peers received one week and the second in which they would get four weeks of vacation time, while their colleagues would receive eight weeks. In this case, about 15% of the respondents chose the former option. Indeed, individuals engage in less comparison when considering experiential pursuits since experiences appear to be resistant to positional concerns and comparisons (Gilovich, Kumar & Jampol, 2014).

Another reason for less upward comparison is that material products often fall short of being perfect. It is relatively easier to find faults in a material product because one can easily compare the features of two wristwatches by placing them side to side and examine which watch is better (Carter & Gilovich, 2010). It is more difficult, however, to think about experiences in comparative terms (Thomas & Millar, 2013, Howell & Hill, 2009). Moreover, material purchases often leave individuals ruminating, another trait of maximizers, over forgone options. (Gilovich et al., 2014). Experiential purchases, however, are less likely to induce such ruminations. For example, when asked to think about a material and experiential purchase that did not turn out as expected, participants were more likely to feel less regret for an unfavourable experiential purchase versus an unfavourable material one (Van Boven et al., 2004).

Howell and Hill (2009) examined several mediators, including social comparison, to explain the relationship between type of purchase and well-being. The authors hypothesized that experiential purchases, as compared to material purchases, are more likely to satisfy the basic psychological needs of relatedness, vitality, autonomy and competence and also lead to reduced

social comparison and envy. In a series of 8 studies, Carter and Gilovich (2010) also investigated if experiences are less subject to comparative evaluations, as opposed to material possessions. The goal of the researchers was to examine if (i) experiential purchases lead to less rumination of un-chosen options and (ii) less examination of chosen options. When asked to recall an experiential or material purchase and think about the difficulty in making this purchase, it was found that that experiential purchases were relatively easy to make and were viewed in less comparative terms. Carter and Gilovich (2010) created two choice sets (material and experiential), each consisting of 12 items. Each of these 12 items consisted of 3 sub-categories which further comprised 4 items in each sub-category. For example, in the experiential set, one of the sub-categories was called "vacation" which was further divided into beach vacation, city vacation and ski vacation. In the material set, the main category comprised Electronic Gadgets and within this category, cameras, TVs and music systems comprised the sub-categories. Each option was accompanied by qualitative features (e.g. description of the vacation) and two quantitative features (e.g. the price). Participants were then told to "get into the head of" of the person who made this choice and imagine that they had made the final choice. The researchers found was found that those in the experiential condition were less likely to spend more time re-evaluating foregone options and also viewed experiential purchases in less comparative terms.

To examine if experiential purchases result in more satisfaction post-choice in the presence of superior, more optimal alternatives, Carter and Gilovich (2010) asked participants to imagine that they had recently purchased an experiential (e.g. vacation) or material (e.g. a pair of jeans) product and that they were completely satisfied with their purchase. The participants were then informed that newer, better alternatives were available (condition one), or the price of the chosen purchase had reduced (condition two). It was found that participants reported being less

disturbed with the modification in price and the presence of newer alternatives in the experiential condition as compared to the material condition.

Overall, it appears as though experiences are viewed as conclusive and absolute in and by themselves. They are perceived as more independent of contextual factors and somewhat less finite as compared to material purchases (Carter & Gilovich, 2010). Experiences are also more unique, individualistic and social (Dunn et al., 2011). Recently, it was questioned whether prospective assessments of happiness and satisfaction for experiential purchases would be evaluated similarly to that of retrospective assessments. Individuals are likely to differ in their evaluations when thinking about the future, versus the past (Helzer & Gilovich, 2012), and therefore, more recent research has investigated the relationship between anticipatory affective evaluations for experiential and material purchases.

2.3.1 Prospective Evaluations of Experiential and Material Purchases

To test the account that anticipatory assessments of experiential investments are similar to those of retrospective evaluations, Kumar et al. (2015) investigated whether future intention to purchase an experiential product influences anticipatory affective responses. Participants were asked to think about an experiential or material purchase that they planned to make in the near future and measured anticipatory feelings of excitement and pleasantness. The results suggested that, similar to retrospective evaluations, participants tend to evaluate experiential investments more favorably, indicating greater excitement and pleasantness with an anticipatory purchase. In another study, Kumar et al. (2015) used iPhone notifications to ask participants if they intended to make an experiential or material purchase in the near future. At several times of the day, participants were sent notifications assessing their general feelings, and their intentions to make

specific purchases (material or experiential) in the future. If the participants responded in the affirmative, they were asked follow-up questions regarding excitement and pleasantness associated with this purchase that they intended to make. The results, overall, were supportive of the hypothesized relationship between anticipatory excitement and pleasantness and the intention to invest in an experiential purchase.

Anticipatory feelings are often associated with waiting, and the prospect of waiting can either be pleasant or unpleasant. Kumar et al. (2015) hypothesized that waiting in a long line to buy an experience can be more pleasant than waiting for a material product. When participants were asked to recall waiting in a long line for an experiential or material purchase, they indicated that their experience was more pleasant when waiting for an experiential purchase. These findings are in line with other research that suggests that participants tend to derive greater happiness from planning a vacation as compared to actually going for a vacation (Nawijn et al., 2010). Pchelin and Howell (2014) examined affective forecasting for experiential and material purchases and found that participants forecasted more well-being and positive emotions from their experiential purchases as compared to material purchases. Additionally, it was also reported that experiential purchases offer a better use of money, as compared to material purchases. Thus, prospective assessments of experiential purchases are similar to that of retrospective evaluations such that experiential purchases are evaluated more positively. Individuals expect experiences to provide more anticipatory excitement, pleasantness, well-being, positive emotions and a better use of money, as compared to material purchases.

Since anticipatory feelings have only recently been investigated, researchers have consistently employed a similar methodology to that of van Boven and Gilovich's (2003) introductory research in which participants are asked to recall a past purchase and then evaluate

retrospective happiness and satisfaction. In a similar vein, researchers measuring prospective feelings also asked participants to think about a purchase they intend to make in the near future (Kumar et al., 2015). Though such methodologies have their advantages, they do not allow for much control over the experiment. It has been recently suggested that instead of relying on an individual's intention to make a future purchase, researchers should capitalize on framing of ambiguous purchases that can be construed as experiential and material (Dunn & Weidman., 2013).

2.4 Framing of Purchases

Because the distinction between experiential and material purchases is a rather fuzzy one, a manipulation that "capitalizes on the ambiguity of the experiential/material distinction by randomly assigning people to think of the very same purchase as either a possession or an experience" (Dunn & Weidman, 2015, p. 173) can prove to be more effective as compared to relying on recall of past purchases. Generally, framing is employed when researchers are interested in understanding if two logical statements, with similar significance, can lead to different assessments (Kahneman & Tversky 1984). In other words, when presented with two distinct ways of describing the same situation, researchers can gain a better understanding of the consequences associated with framing. By keeping the objective qualities constant, and using an external manipulation, researchers can tweak the hypothesized components related to purchase such as price, coupons, color, $ sign, and so on. Framing has been utilized in the context of price for hedonic and utilitarian products (Khan & Dhar, 2010), however, it is certainly not the dominant methodology in the domain of experiential and material consumption. In most of the studies within this domain, starting with the introductory study by Van Boven and Gilovich

(2003), a common method using recall of previous purchases has been employed. In this method, participants are asked to think about a purchase, experiential or material, they have made in the recent past that cost more (or less) than a specified amount. When comparing a vacation (experiential) to a desktop monitor (material), there arises a significant price variation, thus rendering comparison of these purchases difficult.

Nonetheless, a recent study by Carter and Gilovich (2010) has employed framing as a method to elicit preference and purchase intention. The researchers examined different types of regret associated with experiential and material purchases and found that individuals experience regret of inaction (did not do things we should have done) for experiential purchases and regret of action (did things we should not have done) for material purchases. Specifically, a 3D TV was framed both experientially and materially. The TV was either framed as fun and social or the emphasis was more on the technical aspects of the TV (e.g. where would it go in the living room). Participants were either told that someone purchased the TV and regretted buying it (regret of action) or someone did not purchase the TV and regretted not buying it (regret of inaction). They were then asked to indicate which person would experience more regret. It was found that regret of inaction was higher for the TV when it was framed experientially, as compared to materially. An identical manipulation was used by Carter and Gilovich (2012) in which the researchers asked participants to indicate the extent to which the 3D TV would feel like a part of one's true self. The results indicated that when the 3D TV was framed experientially, participants indicated greater connectedness to self as compared to when it was framed materially. Though framing has been sparingly employed, directing individuals to focus on the experiential aspects of a purchase can result in the same psychological benefits typically associated with buying experiences (Dunn & Weidman, 2015). Framing, therefore, capitalizes on

the ambiguity of certain products by allowing the researcher to move beyond a single instance of recall or future intention, and establish more control over the variables.

CHAPTER 3: RESEARCH HYPOTHESES

3.1 Gap in literature

The maximizer's unhappiness and dissatisfaction with his final choice has been well documented in existing literature (Schwartz et al, 2002; Iyengar et al, 2006; Polman, 2010). However, a majority of these research findings are based on the maximizer's retrospective evaluations of happiness and satisfaction. Though retrospective assessments contribute to the theoretical understanding of the maximizer, it is equally critical to investigate whether prospective assessments are evaluated similarly. The maximizer has been suggested to negatively evaluate his retrospective feelings with a choice that he has already committed to, however, in prospect, it is essential to investigate if such evaluations are consistent. It has been suggested that individuals tend to overestimate the relative quality of their performance for a future task, a phenomenon called the overplacement bias. Within this context, maximizers were found to be overconfident in their assessments of future predictions (Jain et al, 2011), however, previous research has not yet investigated if this optimism or over-confidence in future performance or forecasting abilities extends to future assessments of happiness and satisfaction with a purchase.

Maximizing has been shown to be positively related to having and maintaining high standards or perusal of the optimal (Diab et al, 2008). If maximizing is singularly driven by identification of the best, it is likely that making optimality salient would significantly influence the maximizer's anticipatory happiness and satisfaction with a purchase. Optimality is subjective, however, it has been suggested that maximizers engage in social comparison to

relatively assess whether their selected alternative is optimal (Schwartz et al, 2002). Within this context, Sparks et al. (2011) suggested that one way to mitigate the maximizer's unhappiness with a purchase is to emphasize optimality from a credible, non-biased source. This would consequently increase his commitment to his choice and offer psychological benefits that accompany commitment. Existing research has not yet investigated if making optimality salient from an authentic source would help the maximizer anticipate more happiness and satisfaction with a purchase as compared to the satisficer.

Lastly, experiential purchases are suggested to result in more positive prospective evaluations as compared to material purchases (Kumar & Gilovich, 2015). Because experiential purchases are less subject to social comparison, individuals are less likely to maximize when evaluating experiential purchases (Carter & Gilovich, 2010). Previous research, however, has not yet examined, specifically, if maximizers derive greater *prospective* happiness and satisfaction from their experiential investments as compared to material investments.

3.2 Research Questions

Based on the gaps in literature identified above, this study broadly investigates the link between maximizing and anticipated happiness and satisfaction in the domain of experiential and material purchases. Previous research has identified various underlying processes or mechanisms that explain the maximizer's unhappiness such as social comparison, regret, rumination over forgone options, etc.; however, existing research does not identify mechanisms or processes through which the link between maximizing and unhappiness would disappear or even weaken.

By emphasizing optimality from a credible source, measuring prospective happiness, and employing psychometrically valid scale, this thesis investigates if maximizers actually live up to

their reputation for being unhappy and dissatisfied, but in *prospect*. Therefore, this study has three broad research questions that it seeks to answer. The first research goal is to investigate if maximizers anticipate greater prospective happiness with experiential and material purchases. The second research goal is to understand if emphasis on optimality influences the maximizer's prospective evaluations of happiness and satisfaction from experiential and material purchases. The third research goal is to investigate if maximizers anticipate greater happiness and satisfaction with an experiential purchase as compared to a material purchase.

3.3 Research Hypotheses

Based on these research questions, specific research hypotheses were developed. More than a decade of research has demonstrated that experiential purchases result in greater recalled happiness and satisfaction as compared to material purchases (van Boven & Gilovich, 2003). Material purchases are evaluated in more comparative terms because of the relative ease with which they can be compared (Carter & Gilovich, 2010) and because individuals are more likely to ruminate over forgone options when evaluating material purchases, as compared to experiential ones. Furthermore, because material investments are more prone to social comparison, it has been demonstrated that individuals are more likely to use a maximizing strategy when making material purchases (Carter & Gilovich, 2010). Since it has been shown previously that anticipatory and retrospective evaluations for material purchases are less positive as compared to experiential purchases, and because individuals tend to use a maximizing strategy when making material purchases, it is hypothesized that:

Hypothesis 1: Individuals who score high on maximizing will anticipate lesser happiness and satisfaction when a purchase is framed materially versus experientially.

Maximizers, as opposed to satisficers, seek and pursue the optimal. For the maximizer, arriving at the best conclusion is imperative whereas the satisficer aims to achieve the good enough that meets his minimum threshold of acceptability. For the satisficer, anticipated happiness and satisfaction would not significantly depend on presence of optimality, however, for the maximizer, presence of optimality would significantly influence his future evaluations. Moreover, the maximizer engages in social comparison to assess the credibility of his decision, and an optimality claim from a credible source would more likely influence the maximizer's evaluations of happiness and satisfaction, as compared to the satisficer's (Sparks et al, 2011). The satisficer does not engage in social comparison, and is content when the good enough alternative has been achieved. Therefore, it is hypothesized that:

Hypothesis 2: Individuals who score high on maximizing will anticipate greater happiness and satisfaction with experiential and material purchases when optimality is endorsed by a credible source as compared to individuals who score low on maximizing.

Several researchers have suggested that maximizing is a multi-dimensional construct characterised by high standards, decision difficulty and alternative search. With this conceptualisation, these researchers found that maximizing was significantly related to unhappiness and dissatisfaction. Diab et al (2008) re-assessed this relationship and found that maximizing was not significantly related to unhappiness when it was defined as the identification of the optimal. In other words, when maximizing is considered to be uni-dimensional, it has no relationship with unhappiness or dissatisfaction. If maximizing is simply the identification of the optimal, when optimality is made salient, it is likely that maximizers would anticipate greater happiness and satisfaction with a purchase. Additionally, Sparks et al (2011) suggest that the maximizer's unhappiness is related to his difficulty in being certain that the optimal has been

achieved and thus, emphasizing optimality would help mitigate his unhappiness. Furthermore, emphasizing optimality from a credible source, trusted source provide the necessary impetus to maximizers to show commitment to a choice, allowing them to experience the psychological benefits of making a commitment. Therefore, it is expected that for maximizers, optimally framed purchases would result in greater anticipated happiness and satisfaction as compared to purchases that do not emphasize optimality.

Hypothesis 3: Individuals who score high on maximizing will anticipate greater happiness and satisfaction with experiential and material purchases when optimality is endorsed by a credible source as compared to absence of endorsement.

3.4 Overview of Study

Based on these research questions and hypotheses, first, the study investigates if maximizers would anticipate greater happiness and satisfaction with a hypothetical purchase of a 4K Ultra HD TV when framed experientially as compared to materially and in the presence versus absence of optimality. The hypothetical purchase of the 4K TV is framed in four ways: Experiential (EXP), Material (MAT), Experiential_Best (EXP_BEST) and Material Best (MAT_BEST). The two "BEST" conditions emphasized optimality from a credible source while in the remaining two conditions, there was no claim regarding optimality. All participants responded to measures of maximizing, anticipatory happiness and satisfaction. The results of the study were examined using Structural Equation Modeling (SEM) and Analysis of Variance (ANOVA). A majority of the studies researching maximizing tendencies employ a median split analysis to investigate the differences between the maximizers and satisficers. In line with those studies, the present thesis also uses a median split and demonstrates that it is not always as

methodologically flawed when certain conditions are met. SEM does provide with all the necessary estimates regarding significance of proposed hypotheses, however, an ANOVA conducted with a median split provides additional clarity.

CHAPTER 4: THE STUDY

4.1 Participants and Design

An a priori sample size was calculated using G*Power (3.1.9.2). The aim was to attain 80% statistical power (standard power for social sciences) with a $p < .05$ with medium effect ($f = 0.15$). The analysis revealed that the study required 256 participants. This study was completed using 256 participants recruited via convenience sampling method from Amazon's Mechanical Turk. MTurk is an online portal where individuals register to participate in different surveys hosted by independent individuals, universities or organizations. The primary reason why MTurk was used in this study was because it is unlikely that the average student population is aware of and knowledgeable about the 4K Ultra HD TV category. Additionally, it is also unlikely that students would have the resources to purchase a relatively expensive 4K HD TV. Therefore, university students would not be the ideal sample for this study. Several researchers have employed MTurk for data collection and it has been suggested to be one of the useful tools to conduct experimental research (Kittur, Chi & Suh, 2008). It has also been suggested that MTurk participants are more diverse in nature as compared to college or university samples (Buhrmester, Kwang & Gosling, 2011).

Out of the 256 participants, 12 participants indicated that they currently own or have previously owned a 4K Ultra HD TV. These participants were discarded from the study. Three participants began the study, however, decided to opt out before completing it. These participants

were also excluded from the study. Two participants did not respond to any of the dependent measures and were also excluded from the study. Therefore, final data was analyzed using 241 participants. The primary design for this study is 2 (Type of Purchase: Experiential and Material) X 2 (Optimality: (Present and Absent) X 2 (Tendency: Maximizing and Satisficing) between subjects factorial design. Some hypotheses were also analyzed using planned contrasts to obtain simple effects. Experiential and Material Purchases were framed to emphasize optimality from a credible source in two conditions. In other two remaining conditions, the claim of optimality was absent. The randomizing function in Qualtrics – commonly used software for analyzing survey results, was used to assign the participants randomly to one of the four conditions. Sixty nine percent of the participants were between the age group of 26 - 45 and the sample was split almost evenly between males and females (Males = 118, Females = 120, Prefer not to say = 3). 65% of the participants indicated that they were employed for wages and were predominantly of Caucasian ethnicity (72%). All participants were monetarily compensated at the rate of $0.40 for their participation. Certification of ethical acceptability of research involving human participants was obtained on November 7th 2014 from the University of Guelph Research Ethics Board.

4.2 Stimuli

The first step in developing the stimuli for this study involved a thorough research on existing methodologies employed by researchers in the domain of experiential and material consumption. Predominantly, recall of past purchases was used to elicit responses on the dependent measures; however, this method has been recently criticized for not allowing for any control over the experiment and reflecting an increased likelihood of an unclear understanding of the meanings associated with experiential and material consumption (Dunn & Weidman, 2013). Going by the suggestions of Dunn and Weidman (2013) that emphasize the advantages of

framing, it was initially decided that everyday products would be framed to highlight experiential and material elements of products. Thus, a total of 20 products such as lamps, toasters, and the like were framed experientially and materially. The distinctions on further reviewing, however, resonated more with that of experiential versus *technical* framing or hedonic versus utilitarian framing. An analysis of more recent studies revealed that framing of a 3D TV was employed in a study by Rosenszweig and Gilovich (2012) and it was decided that similar framing would be used in this study.

For the present study, the stimuli, instructions and procedures were adapted from Rosenszweig and Gilovich's (2012) Study 5. In their study, the authors used an example of a 3D TV framed experientially and materially. In the experiential condition, participants were led to think about the experience of watching TV in a whole different way with their friends and family, whereas in the material condition, participants were asked to think about the TV's material elements (e.g. where it would go in their home). Though there are several examples of products that can be construed as purely experiential or purely material, there are certain products that lie in between and can be said to possess both, experiential and material elements (Rosenszweig & Gilovich, 2012). A 3D TV, in 2012, seemed to be an appropriate product that would meet the research requirements of framing, however, since this study was conducted in 2012, the 3D TV category was relatively novel and hence, seemed like an appropriate choice. For the present study, this category has been slightly modified and instead of framing a 3D TV, a 4K Ultra HD TV has been used. A 4K Ultra HD TV can be construed as an experiential purchase, offering the social experience of watching TV with friends and family. It is also a material good which is kept in one's possession. Since a TV is a relatively ambiguous category of purchase, it was framed as experiential (EXP), material (MAT), optimal experiential

(EXP_BEST) and optimal material (MAT_BEST). In the experiential condition, participants read the following description of the TV: “Imagine that you have recently purchased a brand new 4K TV. Think about how that would feel like for a moment. Imagine what it would be like to watch it with friends and how cool it would be to experience TV in a whole new way”. In the material condition, participants read the following description: “Imagine that you have recently purchased a brand new 4K TV. Think about how that would be like for a moment. Imagine where the TV set would go in your apartment/home, what it would look like, and what your friends would think”. These descriptions are identical to the descriptions used by Rosenszweig and Gilovich (2012) with the exception of changing the TV category from 3D to 4K Ultra HD TV.

In the remaining two conditions that emphasize optimality from a credible source, the instructions were identical to that of the experiential and material conditions, however, it was emphasized that the 4K Ultra HD TV is the “best” in the market. Undoubtedly, there are numerous ways to emphasize optimality associated with a purchase. Marketers emphasize optimality by labeling products with messages related to compelling consumer experience with the product, or simply with information regarding its superiority over other competing brands. Another potential way to highlight optimality is to present a purchase as one of the “best” buys and back this claim by a credible source. Consumer Reports, for example, consistently ranks cars and SUVs as the best and worst each year based on certain parameters like price, reliability and mileage. Therefore, in this study, optimality of the hypothetical purchase of a 4K Ultra HD TV has been emphasized by framing this purchase as one of the best in the market, according to a credible source (Electronic Association of North America). Specifically, in the EXP_BEST condition, participants read the following description – “Imagine that you have recently

purchased a brand new 4K TV, currently rated as the best 4K TV in the market by the Electronic Association of North America. Think about how that would be like for a moment. Imagine what it would be like to watch TV with friends and how cool it would be to experience TV in a whole new way". Similarly, in the MAT_BEST condition, participants read the following description - "Imagine that you have recently purchased a brand new 4K TV, currently rated as the best 4K TV in the market by the Electronics Association of North America. Think about how that would be like for a moment. Imagine where the TV set would go in your apartment, what it would look like, and what your friends would think".

Maximizing Tendency Scale: Diab et al's (2008) Maximizing Tendency Scale was used in this study. This scale consists of 9 items (e.g. I will wait for the best option, no matter how long it takes) out of which 3 items (e.g. I never settle for the second best) have been retained from the original Maximizing Scale developed by Schwartz et al (2002). All items on the scale measure the extent to which individuals engage in identification and perusal of the optimal. All participants in the study responded to the 7-point Maximizing Tendency Scale (1 = completely disagree, 7 = completely agree). (Appendix A)

4.3 Measures

The dependent measures used in this study were adapted from relevant literature within the domain of experiential and material consumption. Most of the studies in this domain have measured retrospective assessments of happiness and satisfaction with a purchase that has already been made by individuals. Since the present study asks participants to "imagine" having made a purchase, the dependent variables measure future or anticipated satisfaction and happiness with the purchase and are modified accordingly.

All participants, regardless of the condition they were assigned to, were asked to indicate their anticipatory level of happiness and satisfaction with the 4K Ultra HD TV purchase. All participants responded on a 9-point Likert scale to the following questions: “How happy would this purchase make you?” (1 = not at all happy, 9 = very happy) (Van Boven & Gilovich, 2003); How much do you expect this purchase will contribute to your overall life’s happiness?’ (1= not at all, 9 = very much) (Pchelin & Howell, 2014); How much satisfaction would a new 3D TV bring to you? (1 = none, 9 = an extreme amount) (Rosenszweig & Gilovich, 2012); How much do you think this purchase will increase your overall life satisfaction? (1= not at all, 9 = very much) (Pchelin & Howell, 2014). The two items measuring happiness and satisfaction were averaged to create an average score of happiness and satisfaction.

Other Measures: All participants also responded to a specific set of True/False questions that assessed their existing knowledge about the 4K Ultra HD TV category (Appendix B). A total of five questions were asked in order to determine the extent to which the participants were knowledgeable about the 4K Ultra HD TV category. An index was created for the prior knowledge questions. Since the questions were in the True/False format, participants scored between 0 and 5. If the participants did not get any answer correct, they received a score of 0 and if the participants responded correctly to all the questions, they received a score of 5. Additionally, participants were also asked two qualitative questions. Specifically, participants were asked “When you were evaluating the 4K TV just now, please try and trace the thought pattern you went through. Please list all your thoughts right from the beginning to end in the space below”. They were also asked to list any other thoughts they had during the entire study. Lastly, two items on social comparison were measured on a 7-point scale which assessed the extent to which participants generally engage in social comparison (Appendix C). The two items

on social comparison were also averaged to create a single measure. All participants also answered additional information pertaining to the demographics (gender, age, ethnicity and occupation) and a question that addressed the possibility of the participant guessing the hypothesis.

A pretest was conducted in order to understand if the framing of purchases was understood as intended. Additionally, the secondary goal of the pretest was to understand if prior knowledge/notion of the 4K Ultra HD TV category influenced anticipated happiness and satisfaction. A pretest was conducted using a sample of 17 individuals recruited from Amazon's MTurk. A descriptive analysis of the pretest results revealed that the mean maximizing score was 4.55 with a standard deviation of 1.01. The median of maximizing was 4.61. Since the sample size was too small to obtain statistical significance, the difference between the means across all the groups were analyzed in order to investigate if framing had the intended effect. An analysis of the means revealed that maximizers anticipated greater happiness and satisfaction in the EXP condition (M = 5.16) as compared to the MAT condition (M = 4.91). An analysis of the means further revealed that maximizers anticipated greater happiness and satisfaction in the EXP_BEST condition (M = 5.66) and MAT_BEST (M = 5.50) as compared to satisficers in the EXP_BEST (M = 5.00) and MAT_BEST (M = 4.75) condition. Overall, the results of the pretest were indicative of the effectiveness of framing. Additional qualitative answers by the respondents revealed that maximizers did perceive the 4K Ultra HD TV framed as optimal to be the best in the category. For example, when asked to indicate if the 4K Ultra HD TV was actually perceived as the best, one of the respondents, a maximizer, reported "I wondered and tried to imagine what the image from the TV would look like compared to the TV I currently own. But I guess it would be better since it's the best and that saves me the hassle of looking". Furthermore, participants in

general indicated that they could imagine what a 4K HD TV would be like and also reported that they were moderately knowledgeable about the 4k HD TV category. Thus, overall, the pretest results revealed that framing did have the intended effect and therefore, the description of the purchases was retained for the final study.

4.4 Procedure

The main study was carried out using Amazon's MTurk. When participants registered on MTurk opted to participate in the study, they were asked to click on a link that redirected them to the Qualtrics survey link. At the onset of the study, participants were asked to provide consent for their participation. Next, they were told that they would be responding to a survey concerning their purchase decisions in life (Van Boven & Gilovich, 2003) and were also informed that there is no time limit to the study. All participants were asked to first indicate whether they currently own or have previously owned a 4K Ultra HD TV. If the response was affirmative, the participant was redirected to the end of the survey, thanked and compensated for participation. If the response was negative, the participant proceeded to take the survey and was assigned to one of the four experimental conditions. Once the participants read the instructions, they responded to four questions assessing anticipatory happiness and satisfaction with the hypothetical purchase. After the participants responded to the dependent measures, they were requested to click on "Submit and Proceed" button which lead the participants to the next stage of the study in which they responded to the 9-item Maximizing Tendency Scale (Diab et al., 2008). On completion of the scale, the participants responded to five True/False questions that assessed prior knowledge about the 4K HD TV category. After the responses were recorded, participants proceeded to answer two questions pertaining to a general tendency to engage in social comparison. Next, the participants responded to two qualitative questions asking them to indicate

their thought processes during the study. Lastly, all participants responded to demographic questions about age, gender, ethnicity and employment, in that specific order. On completion of the study, all participants were thanked, explained the purpose of the study and compensated.

4.5 Data Analyses

Because data was analyzed using SEM and ANOVA (median split), the results section is divided into two parts with the first part reporting SEM findings and the second part reporting the findings from ANOVA. SEM was carried out using MPlus version 7 (Muthen & Muthen, 1998-2010). MPlus is a statistical modeling program that allows for analysis of hypothesized relationships between different types of observed and latent variables. It also allows for the simultaneous testing of both, categorical and continuous variables while accounting for measurement error. The structure of the data is identified in a simple way by indicating the observed and latent variables and specifying relationships between the variables.

4.5.1 Structural Equation Modeling (SEM)

SEM is a very powerful analytical tool for researchers who are interested in identifying, quantifying and interpreting distinct and complex theoretical relationships between different types of variables. In SEM, the researcher specifies the variables of interest and the relationships between them. More specifically, the researcher specifies latent variables, those which are not directly observed and observed variables, those that are directly measured and the relationships between them. The variables that influence other variables in the model are called endogenous variables and those that do not influence other variables are called exogenous variables. SEM allows for the specification of a measurement model and reports parameter estimates in addition

to identifying links between latent variables in the proposed model. It also accounts for measurement errors typically associated with observed variables.

Unlike other statistical procedures (e.g. ANOVA), the SEM does not provide with a single statistical value along with the associated significance (e.g. F value). Instead, the SEM combines regression analysis and factor analysis to provide fit indices that indicate whether the proposed model provides a good fit to the data. The SEM procedure invariably begins with model specification in which the researcher distinctly states the observed and latent variables and specifies the relationships among these variables. This model is specified before the analysis is conducted. Post specification of model, the SEM provides a wide range of output including covariances, correlations, parameter estimates, regression estimates and indicators of model fit.

The model fit statistics indicate whether the model proposed provides a good fit into the data. According to Holmes-Smith et al (2004), model fit indices invariably fall into three categories - absolute, incremental or model parsimony. In this study, the model fit is evaluated using chi-square, RMSEA, CFI and TLI. Each of these indices is evaluated on specific criteria in order to indicate a model fit. If the model does not have a good fit, usually researchers can modify the model to evaluate if the modification results in a better model fit. Certain items that perhaps do not correlate with other measures can be further analyzed using Confirmatory Factor Analysis. For example, if a particular item on a scale reveals a factor loading which is below the cut-off, this item can be removed from analysis and model fit can be examined again.

The primary reason why SEM was employed in this study is because SEM allows for the testing of latent variables. The scales that are usually employed in research, in general, comprise individual items that reflect a particular construct of interest. For example, in the present thesis,

there are two latent variables called MaxSat (Maximizing Tendency) and HappSat (Happiness and Satisfaction). In order to measure Maximizing Tendency, a 9-item scale by Diab et al (2008) has been used with each item reflecting the general tendency to maximize. Similarly, the four items on happiness and satisfaction comprise a latent variable. SEM allows for the comparison of these two latent variables and hence, it is sometimes preferred over other types of analysis.

The fundamental concept of SEM is to examine relationships between latent variables which are non-observable factors that underlie observed variables. As such, SEM produces linear regression equations which are visually represented by path analysis. SEM also allows for the testing of two kinds of models: measurement and structural. The measurement model examines the relationship between the observed and latent variables and investigates the reliability and validity of the scales employed. The structural model specifies the relationship(s) between latent variables and provides fit indices to ascertain significance.

4.5.2 Measurement Invariance

In addition to accounting for latent variables, SEM also tests for measurement invariance and indicates whether the parameters of a measurement model are equal across all the groups being tested. Any psychological or marketing research typically employs scales or instruments that help assess the difference between groups (Burns et al., 2006). For example, if a researcher wants to study the difference between males and females on a particular test of verbal ability, the researcher often assumes or considers it implied that the test is measuring the same construct across different groups. However, this assumption should be subjected to further analysis, specifically if the researcher is conducting cross-cultural or longitudinal studies (Chen, 2008). Participants may not assign the same meanings to measurement items across different times or

cultures or even otherwise and this could pose a serious threat to the validity and reliability of the study.

The observed variables in this study are assumed to significantly relate to the latent variables across all groups in the study and this assumption is tested by assessing measurement invariance. Measurement Invariance occurs when the parameters of a measurement model are statistically equivalent across groups and the ideal situation for a researcher is when there is measurement invariance is established for all groups. Different types of measurement invariance have been specified by researchers and among these; the current study will be testing for configural, metric and scalar measurement invariance. Each of these measurement invariances are briefly described below:

Configural Invariance: Establishment of configural invariance is the preliminary step in identifying measurement invariance. Configural invariance essentially implies that participants who have been assigned to different groups have understood the construct (s) in the same way. In this study, configural invariance measures whether individuals who were randomly assigned to one of the four purchase conditions understood the construct of maximizing equivalently across all groups. It tests whether the items sets associated with each factor will be identical across all groups. In MPlus, configural invariance is tested by setting the means of the factors as 0; however, the variances associated with these means are set to vary.

Metric Invariance: While the configural model looks to identify similar patterns of factor loading in all groups, metric invariance tests whether these factor loadings are invariant by making factor loading equivalent across all groups. This model tests whether participants across distinct groups respond to the scale or instrument in the same manner. In other words, it assesses

whether the instrument or items have been understood in the same way across groups. To test for metric invariance, the loadings are constrained across groups except for the first indicator of a factor, which is set at one. Thresholds are set to be free. If metric invariance is supported, it means that quantitative comparisons of variances and covariances are meaningful and defensible.

Scalar Invariance: Scalar invariance is tested by constraining intercepts and it investigates if the comparison of group means across different groups is meaningful and differences in the means across different groups are unbiased. If scalar invariance is identified, it means that there is a meaningful relationship between observed scores and latent scores and if two participants have the same latent mean score, then they would also indicate the same score on the observed variable, irrespective of the condition they were assigned to.

CHAPTER 5 RESULTS

5.1 Descriptive Statistics

A descriptive statistics analysis revealed that the range of the maximizing score was 1.33 to 7 (M = 4.61, SD = 1.19). Anticipated happiness score ranged from 1 to 9 (M = 5.46, SD = 2.02) and anticipated satisfaction score ranged from 1 to 9 (M = 5.35, SD =1 .85). There was a positive correlation between anticipated happiness and maximizing ($r = 0.35$, $p < 0.00$), anticipated satisfaction and Maximizing ($r = 0.36$, $p < 0.00$) and anticipated happiness and satisfaction ($r = 0.92$, $p < 0.00$). Since the correlation between the two measures of anticipated happiness and satisfaction was very high ($r = 0.92$, $p = 0.00$), the two items were averaged to create a single measure called Happ (M = 5.41, SD = 1.90). The number of participants in each condition was 60 except in the EXP condition where the number of participants was 61. A reliability analysis of the Maximizing Tendency Scale revealed a Cronbach's alpha of 0.90

indicating high level of internal consistency in this sample. A reliability analysis was performed for both, happiness and satisfaction and the Cronbach's alpha for happiness was 0.85 and 0.88 for satisfaction, thus indicating high level of internal consistency for the scale in this sample.

The majority of the sample was Caucasian (71.5%), between the ages of 26-35 (46.2%) and reported being employed for wages (65.7%). The sample was evenly represented by males (N = 117) and females (N = 119). An index was created for the prior knowledge questions (M = 2.67, SD = 0.97) in which most of the participants scored a total of 2 (34.7%) and 3 (34.3%). The two items on social comparison were also averaged to create a single measure (M = 3.78, SD = 1.53).

5.2 Model Specification (SEM)

The first step in using SEM is the formal specification of a hypothesized model. Since the present study has two dependent variables (Happiness and Satisfaction), first a bivariate correlational analysis was conducted on both variables. The correlation between the two dependent variables was very high ($r = 0.92$, $p < 0.00$). Thus, in the conceptual model, one latent variable called Happ was created which was measured by four questions, two questions pertaining to anticipatory happiness and two questions pertaining to anticipatory satisfaction. The relationships between these variables are specified using arrows that go from the causal variable to the variable that is caused. Next, the latent variable called "Max" was created which was directly measured by 9 items. The two types of purchase were denoted by Purchase and the two optimality conditions (best and no mention) were denoted by Optimality. The relationships between each type of purchase, optimality and happ were specified and the interaction between

the Purchase and Optimality was also specified in the model. Presented below is a visual depiction of the conceptual model.

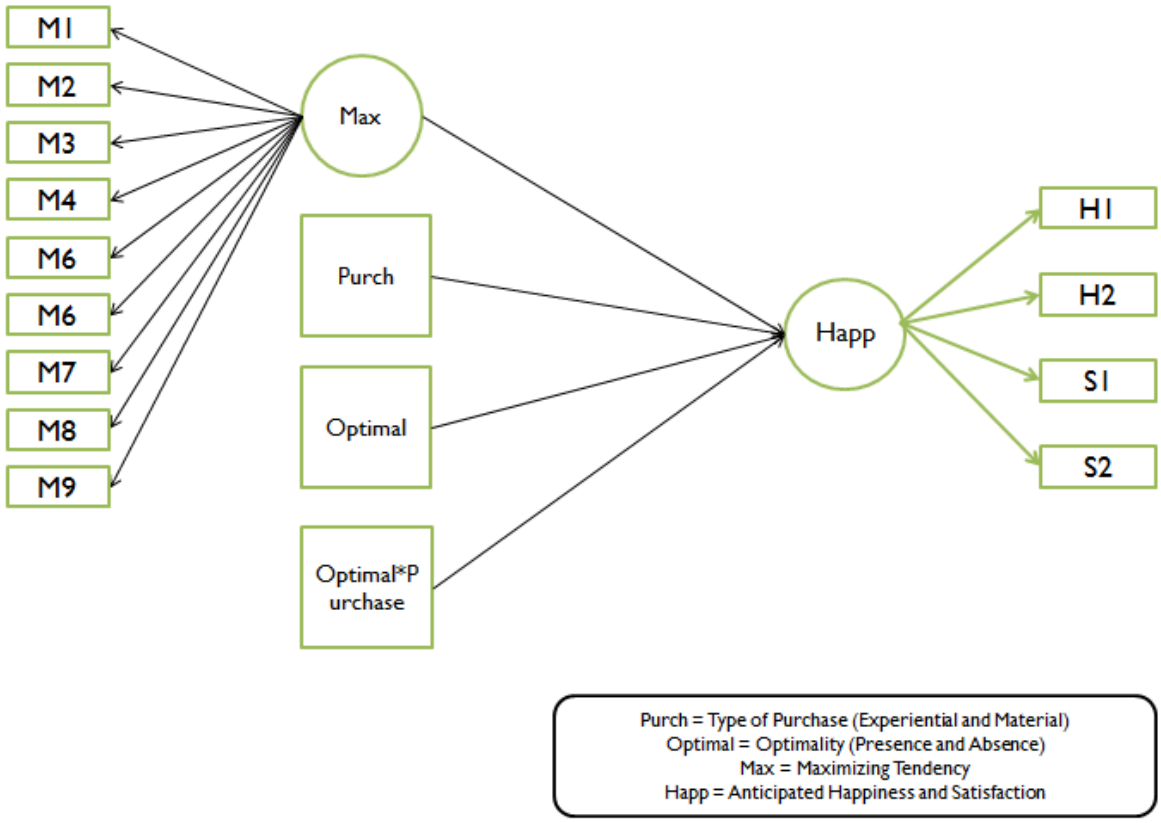

Fig 1: Model Specification hypothesizing the relationships between latent and observed variables

5.3 Assessment of Measurement Invariance

In order to test for the presence of measurement invariance, MPlus syntax was used. In the MPlus syntax, an additional command of "GROUPING" was added where it was specified how Purchase was coded (1= EXP, 2= EXPBEST, 3= MAT, 4 = MATBEST). An additional code was added in MPlus which reports the three types of measurement invariance to be investigated for this study. Thus, the following syntax was added to the command:

MODEL = CONFIGURAL METRIC SCALAR;

This command examines measurement invariances and produces an output with chi-square values for all models compared and significance levels. Table 1 reports the fit indices for the invariance tests and reports the chi-square values for each of the models compared. Detailed output is presented in Appendix F.

Table 1

Fit Indices for the Configural Scalar and Metric Invariance

Invariance Level	**ChiSquare**	**df**	**CFI**	**TLI**	**RMSEA**	**SRMR**
Configural	340.951*	204	0.939	0.921	0.110	0.071
Metric	371.595*	234	0.938	0.931	0.103	0.102
Scalar	404.185*	264	0.937	0.937	0.098	0.112

Models Compared	***Chi-Square***	***df***	***p-value***
Metric against Configural	30.644	30	0.2467
Scalar against Configural	63.234	60	0.1861
Scalar against Metric	32.590	30	0.2551

*p > 0.05

The Configural model acts as the baseline and all models are compared against this model. This model can be evaluated using goodness of fit indices to determine if the model is representative of the hypothesized relationships. As can be seen from the table, the configural model revealed an acceptable to good fit. The model produced a χ^2 value of 340.951 and though this value was significant ($p > 0.05$), the CFI (0.94) and TLI (0.92) values are above the recommended cut-off of 0.9. Thus, it can be said that configural invariance was achieved.

Metric invariance was then analyzed and constraining the factor coefficients resulted in an increase in the χ^2 value, gaining 30 degrees of freedom. As can be seen from the bottom half of the Table, this chi-square difference of 32 was not statistically significant. This implies that metric invariance was achieved. In addition to this, the CFI (0.94) and TLI (0.93) are also above the cut-off of 0.90. Lastly, the intercepts of all the individual indicators were constrained to be equal across the conditions in order to test for scalar invariance. The difference in χ^2 values between metric and scalar model was 34, with an increase of 30 degrees of freedom. Looking at the bottom half of the table, it can be seen that when the metric and scalar models are compared, the chi-square change is not significant, thereby establishing evidence for scalar invariance. Additionally, the CFI (0.94) and TLI (0.94) values are greater than 0.90. Overall, measurement invariance was attained for this sample. This implies that constraining factor coefficients and intercepts did not worsen the model fit. In other words, the measurements did not influence the treatments in this study and that quantitative comparisons of variances and covariances are meaningful and defensible.

5.4 Assessment of the Structural Model

To understand if the model proposed fits the data well, a variety of goodness of fit indices is used as indicators with each having specific constraints and criteria for evaluation. To assess incremental fit indices, the CFI (Bentler, 1980) and the TLI (Tucker & Lewis, 1973) should be above 0.90 to indicate good model fit. For absolute fit indices, the RMSEA (Root Mean Square Error of Approximation; Steiger & Lind, 1980) should not exceed the value of 0.08 (Tabachnick & Fidell, 2007) to indicate good model fit. Lastly, for the chi-square value to represent good model fit, it should indicate a p-value of more than 0.05. The chi square value however, varies as

a function of sample size, however, in this study, sample size is large enough with more than 200 participants.

First, the model was run in MPlus without the interactions to test for model fit. The model revealed a significant $\chi 2$ value of 164.186 with 100 degrees of freedom. The RMSEA value was 0.05. The CFI and TLI values were 0.96 and 0.95 respectively. Overall, looking at the model fit indices, it can be concluded that the proposed model fits the reasonably adequately. Detailed Output is presented in Appendix D. A confirmatory factor analysis showed that the factor loadings for Item 7 on the Maximizing Tendency Scale did not significantly relate with the other items on the scale (B = 0.364, SE = 0.10). Item 7 stated "I am uncomfortable making decisions before I know all of my options". From the way this item has been worded, it appears that this item relates more to the Alternative Search aspect of Schwartz et al's (2002) original Maximizing scale as opposed to measuring identification of the optimal. It was also found that in Diab et al's (2008) development of the Maximizing Tendency Scale, this item was poorly correlated with all the other items and in fact, reported the lowest item-total correlation of 0.35. Since the factor loading was very low for this item and because it did not significantly correlate with other items on the scale, it was discarded from the analysis and the model was tested again without Item 7. With this revised model, the model fit indices were examined again. The chi-square value of 81.95, df = 83, $p < 0.05$ was now not significant, indicating a better fit. The RMSEA value of 0.00 and CFI and TLI values of 1.00 respectively also indicate that the model specified is a very good fit to the data. Detailed Output is presented in Appendix E.

Next, the main and interaction effects were analysed in MPlus. The Main effect of Maximizing was significant (B = 0.50, SE = 0.09, $p < 0.00$). The Main effect of Purchase was

not significant (B = 0.08, SE = 0.10, $p > 0.05$). The Main effect of Optimality was not significant (B = 0.07, SE = 0.09, $p > 0.05$). Therefore, the analysis only revealed a significant main effect of Maximizing/Satisficing on Anticipated Happiness and Satisfaction.

Next, the interactions were entered into the model. The interaction between Purchase and Optimality was not significant (B = 0.11, SE = 0.10, $p > 0.05$). Interactions between Maximizing and Purchase was not significant (B = 0.06, SE = 0.08, $p > 0.05$). The interaction between Maximizing and Optimality (B = 0.08, SE = 0.09, $p > 0.05$) was not significant and lastly, the interactions between Maximizing, Purchase and Optimality (B = -0.01, SE = 0.08, $p > 0.05$) was not significant. To test for the simple effects, the Wald Test of Parameter Constraints was used in MPlus. Out of the four treatment conditions, the experiential condition in the presence of optimality was significant (Value = 3.711, df = 1, $p < 0.05$). The remaining three treatment conditions were not significant. Therefore, the experiential condition framed optimally significantly contributed to the outcome of anticipated happiness and satisfaction, thereby supporting the hypothesis that maximizers in the optimally framed experiential and material conditions would anticipate significantly greater happiness and satisfaction as compared to the purchases in which optimality was absent.

5.5 ANOVA

To enhance and simplify the understanding of the results obtained from the SEM, a traditional ANOVA was used in order to test the difference between the means, and obtain main and simple effects. Though the SEM results provide the necessary information regarding hypotheses testing, the ANOVA allows for a more simplified analysis. Using the ANOVA, the main goal is to compare the means across different levels of Purchase and across different levels of Maximizing (high versus low) and analyse whether the groups differ significantly.

Experimental researchers typically employ an ANOVA preceded by a median split when interested in comparing two groups that do not occur naturally, even though more recently, alternate methodologies are suggested (Rucker et al, 2015). When conducting an ANOVA using a median split, the analysis of means, contrasts and their interpretations are fairly straightforward as compared to using regression since regression does not compare means but instead provides a regression line. Additionally, in order to fully understand the significant relationships between various levels, there are no post hoc tests that would provide a simple interpretation (Iacobucci et al, 2015).

It has been argued that median splits cause a loss of power and are also related to Type I errors. This thesis does not discard this criticism; however, it has been recently suggested by Iacobucci et al (2015) that median splits can be as parsimonious as a continuous variable if certain conditions are met. Given that some researchers might be interested in showing how a "low" group differs from a "high" group; these researchers can employ a median split if there is an absence of multicollinearity. If the researcher can successfully demonstrate that there is no correlation between the independent variables, median splits can be used.

In order to test for multicollinearity between the independent and moderating variable, a correlation analysis between Type of Purchase and Maximizing was performed. This analysis revealed that the correlation between the two variables was negligible, $r = 0.002$, $p = 0.97$. Further, using regression analysis in SPSS, the multicollinearity was assessed by examining the VIF (Variance Inflation Factor) and Tolerance values. The VIF and Tolerance values were both 1, indicating an absence of multicollinearity. The median maximizing score across the sample of 241 participants was 4.78. Those who scored more than 4.78 were categorised as maximizers and those who scored below 4.78 were categorised as satisficers.

In order to use the ANOVA, certain assumptions have to bet met such as homogeneity, independence and normality. All of these assumptions can be tested using SPSS. Homogeneity of variance can be tested by Levene's test, normality can be indicated by doing a Shapiro-Wilks test and lastly, random assignment of subjects into treatment groups ensures that experimental errors are independent. Levene's test of homogeneity was not significant F (7, 231) = 1.225, p = .29. This means that the ANOVA's assumption of homogeneity was not violated. The Shapiro-Wilks Test was significant for Purchase, W (121) = 0.97, p < 0.05, Optimality, W (114) = 0.96, p < 0.05, and Maximizing, W (109) = 0.944, p > 0.05. This means that the data was not normally distributed. The observed power for Purchase, Optimality and Maximizing was 0.08, 0.59 and 1.00 respectively thereby indicating that the probability of committing a Type 1 error (rejecting the null hypothesis when it is true) is low for the variable of Maximizing. The $p < .05$ criterion for significance was used throughout analyses.

5.5.1 Hypotheses Testing

Before testing for the specific hypotheses proposed, a 2 (Type of Purchase: Experiential and Material) X 2 (Optimality: Presence and Absence) 2 (Tendency: Maximizing and Satisficing) ANOVA was conducted to test for the main effects of type of purchase, maximizing tendency and presence of optimality and the interactions between these variables. The ANOVA revealed that the main effect of type of purchase was not significant, F (1, 238) = 0.33, p > 0.05. Participants anticipated slightly more happiness and satisfaction in the Experiential Purchase condition (M = 5.54, SD = 0.16) as compared to the Material Purchase condition (M = 5.40, SD = 0.16), however, this effect was not significant. The main effect of Optimality on anticipated happiness and satisfaction was not significant, F (1, 238) = 0.07, p > 0.05. There was no

difference between anticipatory evaluations in the presence of optimality (M = 5.44, SD = 0.16) versus absence (M = 5.50, SD = 0.16). The main effect of Maximizing Tendency on anticipated happiness and satisfaction was significant, F (1, 238) = 39.68, $p < 0.00$, $n^2 = 0.14$. Maximizers anticipated greater happiness and satisfaction (M = 6.20, SD = 0.17) as compared to satisficers (M = 4.74, SD = 0.15).

The interactions between the variables were analyzed next. The interaction between Optimality and Purchase was not significant, F (1, 238) = 0.46, $p > 0.05$. There was no significant difference between experiential purchases in the presence of optimality (M = 5.58, SD = 0.23) and absence of optimality (M = 5.49, SD = 0.22). Further, there was no significant difference between material purchases with presence of optimality (M = 5.29, SD = 0.23) and absence of optimality (M = 5.52, SD = 0.23). The interaction between Optimality and Maximizing Tendency was not significant, F (1, 238) = 0.61, $p > 0.05$. Maximizers did not significantly anticipate greater happiness and satisfaction when optimality was present (M = 6.08, SD = 0.24) as compared to when optimality was absent (M = 6.33, SD = 0.23). Similarly, satisficers did not significantly anticipate greater happiness and satisfaction when optimality was present (M = 4.80, SD = 0.22) as compared to when optimality was absent (M = 4.68, SD = 0.21). The interaction between Maximizing Tendency and Purchase was not significant, F (1, 238) = 0.19, $p > 0.05$. Maximizers did not significantly anticipate greater happiness and satisfaction in the Experiential condition (M = 6.32, SD = 0.23) as compared to Material condition (M = 6.09, SD = 0.24). Similarly, satisficers did not significantly anticipate greater happiness and satisfaction in the Experiential condition (M = 4.75, SD = 0.22) as compared to Material condition (M = 4.72, SD = 0.22). Lastly, the three way interaction between

Maximizing, Optimality and Purchase was not significant, $F(1, 238) = 0.02$, $p > 0.05$. The Test of Between-Subjects ANOVA is presented in the Appendix H.

Hypothesis 1 states that individuals who score high on maximizing will anticipate lesser happiness and satisfaction when a hypothetical purchase is framed materially as compared to experientially. A 2 (Type of Purchase: Experiential and Material) X2 (Optimality: Present and Absent) ANOVA was performed for the sample of 110 maximizers in the study. The ANOVA revealed that the main effect of Type of Purchase for maximizers was not significant, $F(3, 109) = 1.19$, $p > 0.05$ (Appendix I). An analysis of the means and standard deviations revealed that maximizers anticipated greater happiness and satisfaction in the EXP condition ($M = 6.17$, $SD = 0.32$) as compared to the MAT condition ($M = 5.98$, $SD = 0.36$), however this difference was not statistically significant. Thus, Hypothesis 1 did not find support.

Hypothesis 2 states that individuals who score high on maximizing will anticipate greater happiness and satisfaction with an experiential and material purchase when optimality is endorsed by a credible source as compared to individuals who score low on maximizing. Since this hypothesis tests the simple effect of type of purchase, a planned contrast analysis was performed to test this hypothesis. Contrast analysis revealed that maximizers anticipated significantly more happiness and satisfaction when optimality was endorsed, $F(1, 235) = 14.54$, $p < 0.00$, as compared to satisficers. An analysis of the means revealed that maximizers anticipated significantly more happiness and satisfaction ($M = 6.70$, $SD = 1.47$) as compared to satisficers ($M = 4.81$, $SD = 1.82$) when optimally was present for an experiential purchase. Also, maximizers significantly anticipated more happiness and satisfaction ($M = 5.86$, $SD = 1.88$) as compared to satisficers ($M = 4.72$, $SD = 1.98$) when optimality was present for a material

purchase. Therefore, hypothesis 2 was supported. Fig 3 shows the mean happiness scores for maximizers and satisficers in the presence and absence of optimality.

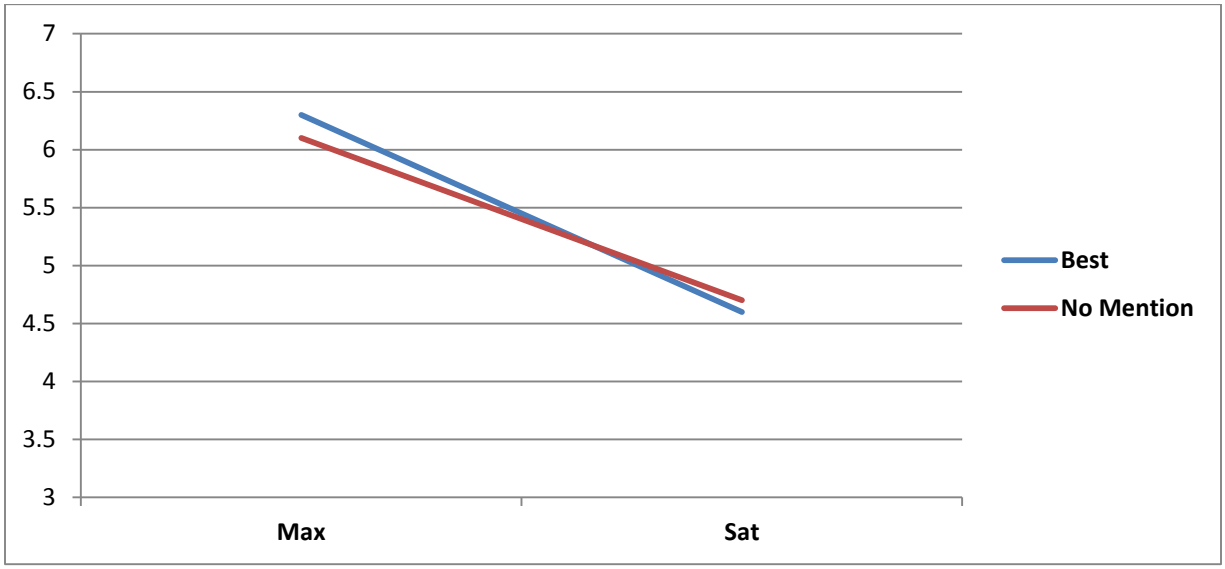

Fig 2: Mean happiness scores for maximizers and satisficers in the presence and absence of optimality

Hypothesis 3 states that individuals who score high on maximizing will anticipate greater happiness and satisfaction with an experiential and material purchase when optimality is endorsed by a credible source as compared to an absence of endorsement. To test this hypothesis, a contrasts analysis was performed and the analysis revealed that there was no significant differences in anticipated happiness and satisfaction for maximizers in the presence versus absence of optimality $F(1, 235) = 0.57$, $p > 0.05$. A review of the group means shows that maximizers anticipated greater happiness and satisfaction when optimality was present in the experiential condition ($M = 6.70$, $SD = 1.47$) as compared to absent ($M = 6.17$, $SD = 1.80$), however, this difference is not statistically significant. Lastly, an analysis of the means reveals that maximizers anticipated greater happiness and satisfaction in the absence of optimality in the material condition ($M = 5.98$, $SD = 1.87$) as compared to the presence of optimality ($M = 5.86$,

SD = 1.88), however, this difference was not statistically significant. Therefore, hypothesis 3 was not supported. Detailed Output for Contrasts is presented in Appendix J. The means for maximizers and satisficers across all conditions are presented in Fig 4 and 5.

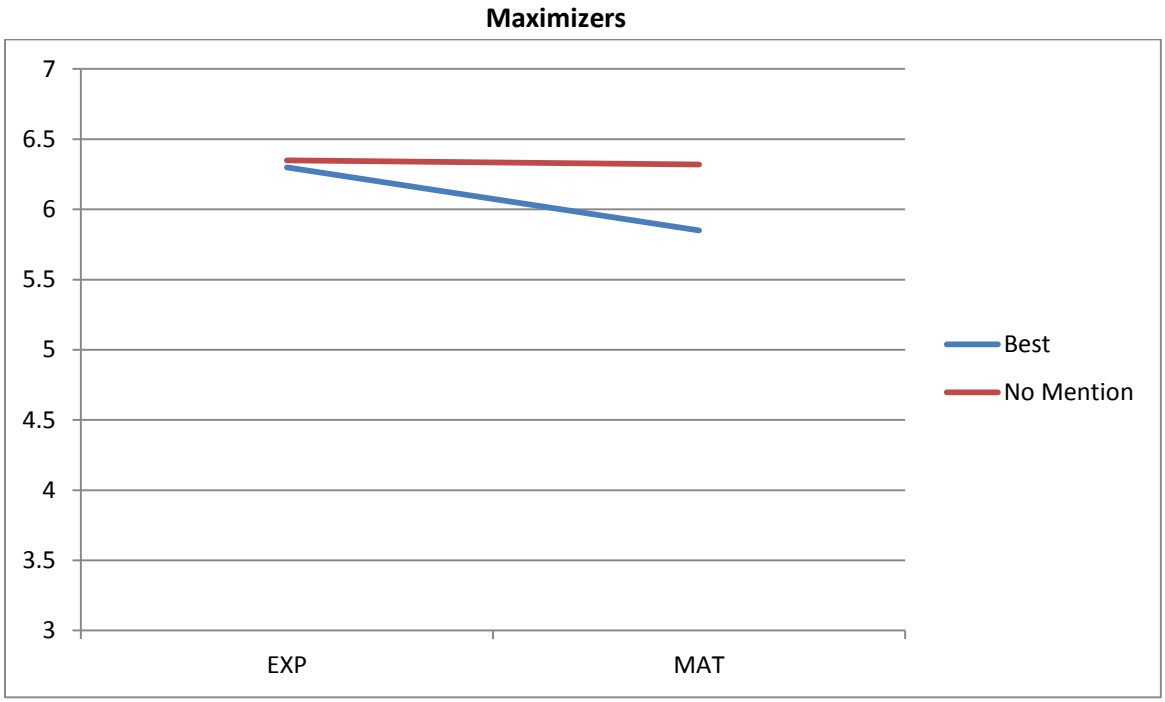

Fig 3: Mean scores on Happiness for Maximizers in the presence and absence of optimality

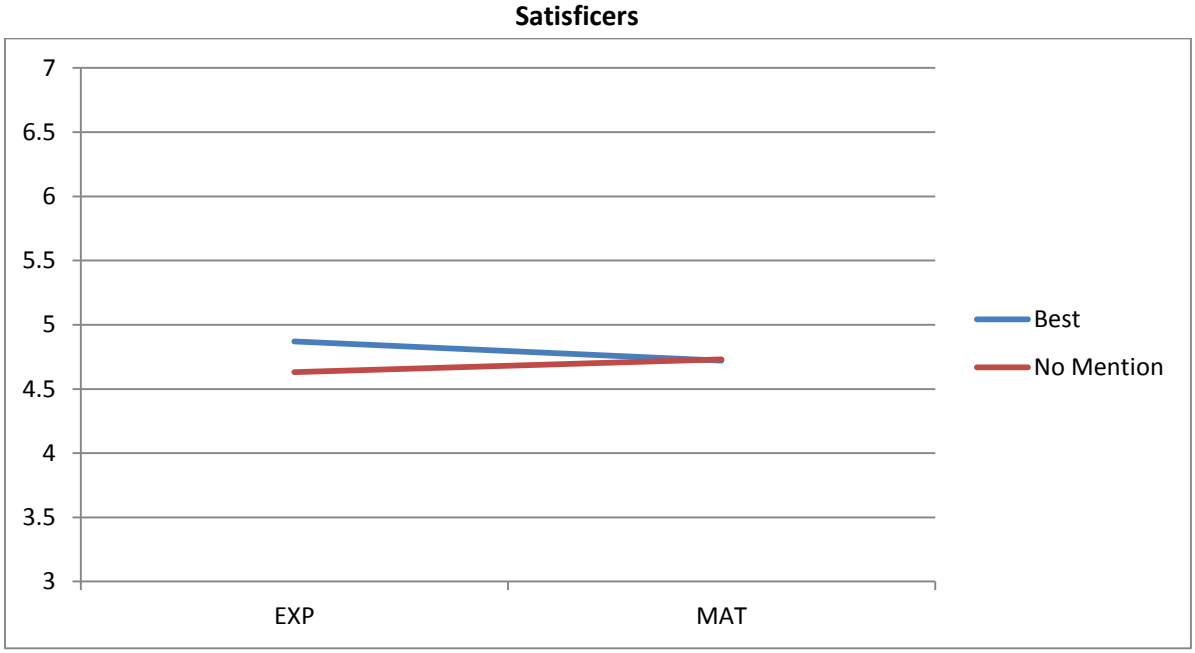

Fig 4. Mean scores on Happiness for Satisficers in the presence and absence of optimality

Since additional measures such as prior knowledge, age and gender were also included in the study, it was first examined whether prior knowledge was related to anticipated happiness and satisfaction. Prior knowledge was entered as a covariate in the GLM and the analysis revealed that prior knowledge did not significantly influence anticipated happiness and satisfaction, $F(1, 238) = 0.05$, $p > 0.05$. Gender was also entered as a covariate and the analysis revealed that the effect of gender on anticipated happiness and satisfaction was significant, $F(1, 238) = 6.14$, $p < 0.05$. An examination of the means revealed that males anticipated being significantly more happy and satisfied ($M = 5.87$, $SD = 1.83$) as compared to females ($M = 4.95$, $SD = 1.89$). Age was entered as a covariate and the analysis revealed that age did not significantly influence anticipated happiness and satisfaction, $F(1, 238) = 050$, $p > 0.05$. Two qualitative questions that assessed participants' thought processes during the study were coded into five categories - satisfaction with existing TV, affordability, location of the TV in the house, coolness of the TV and picture quality. Overall, most of the participants reported thinking about

the price of the TV, how much more expensive it would be as compared to a regular 1080p TV and indicated that the TV would be an amazing product to purchase and that it would make them happy to watch movies and play games with friends. Some participants mentioned that they thought about where the TV would go in their house and whether it would go with the existing furniture. A majority of the participants also indicated that the picture quality of the 4K TV would be much better and they would enjoy greater sharpness in quality. Very few participants indicated that they were either happy with their existing TV and did not need a new TV.

CHAPTER 6: DISCUSSION

This thesis examined the relationship between maximizing and anticipatory assessments of happiness and satisfaction within the context of experiential and material purchases. The results obtained from both, Structural Equation Modeling and Analysis of Variance reveal the main effect of maximizing on anticipatory assessments of happiness and satisfaction with a hypothetical purchase of a 4K Ultra HD TV. Across all four purchase conditions, it was found that a higher tendency to pursue the optimal results in higher anticipated ratings of happiness and satisfaction. The type of purchase, presence of optimality as well as the interaction between these variables was not significant.

The findings from this study did not support hypothesis one and three. Maximizers did not indicate lesser anticipatory happiness and satisfaction from the materially framed purchase as compared to the experientially framed purchase. Also, maximizers did not indicate greater anticipatory happiness and satisfaction when optimality was present versus absent. Hypothesis two did find significant support; however, this effect cannot be attributed to the optimality framing employed in the study. Maximizers were found to anticipate greater happiness and

satisfaction as compared to satisficers across all purchases, regardless of the presence or absence of the claim regarding optimality. Some possible explanations for these findings are discussed below.

Overall, the findings from this study suggest that maximizers are more optimistic about their future affective evaluations as compared to retrospective assessments. Previous research has shown that maximizing is negatively correlated with dispositional optimism and subjective happiness (Schwartz et al., 2002). These findings however were associated with the maximizer's retrospective evaluations with a purchase that was already made. Prospectively, because maximizers have high standards for themselves, they are likely to be optimistic about their relative standing (Jain et al., 2011). Jain et al. (2011) found that maximizers are more prone to subjecting themselves to the overplacement bias. When maximizers were asked to evaluate the percentage of people in a sample who would have inferior driving skills as compared to themselves, maximizers considered themselves to be more superior and ranked their ability over the median ability. Similarly, when maximizers forecasted the outcome of a sports game, they reported being more over-confident in their assessments. Though there is no significant a-priori basis for accounting for the overplacement bias in this study, it is possible that the overplacement bias extends beyond the maximizer's specific ability or performance to his evaluation of future affective states.

The maximizer's greater anticipated affective evaluations can also be explained with what Caruso et al. (2008) refer to as temporal value asymmetry or, the idea that individuals find more value in future events as compared to events that have already taken place. According to Caruso et al. (2008), future events are considered more malleable and uncertain as compared to the past, and therefore, valuations or assessments are perceived to be more positive when it is

likely to change the future as compared to the past. The researchers suggested that individuals do not have a rationale to value future events more, but their existing affective states alter the value they attach to future events (Gilbert & Wilson, 2007). In other words, individuals are more likely to experience stronger affect when contemplating future events as compared to past events (Caruso et al., 2008). When participants are asked to imagine having already worked on a five hour data entry job versus working on the job in the future, those in the future condition indicated that they expected to get paid a lot more as compared to those in the past condition (Caruso et al., 2008). Because the past has already occurred and the future seems to be more malleable, it is likely that this is one of the reasons why maximizers *expect* to derive much greater happiness and satisfaction from their purchases as compared to the happiness they would indicate when retrospectively evaluating purchases that have already been made.

Maximizers have a reputation for being unhappy but the results of this study indicate that might not *always* be the case. This brings the discussion to a very interesting point. Can maximizers accurately predict their future affective states? The theory of affective forecasting (Gilbert, 2006) states that individuals do not accurately predict the intensity (valence) or duration of their emotions in the sense that when individuals are asked to think about positive future events, they tend to overestimate the intensity and duration of such an event. In this study, it is likely that because the maximizer was asked to imagine how it would feel like to own a 4K Ultra HD TV, he over-estimated the happiness he would derive from the purchase if he actually made the purchase. In other words, according to the affective forecasting theory, individuals are not accurate in forecasting future affective states as they are more likely to attach greater affective value to their future states.

Another view, more specific to maximizing, is that maximizers are likely to display more biases when evaluating anticipatory affective states and anticipate the fading away of their affective states to a larger extent as compared to satisficers (Besharat, Ladik & Carrillat, 2013) This would imply that maximizers would not be able to optimistically assess future emotional states. Maximizers have been shown to extend their regret with past decisions to future choices, thereby making them poor estimators of future demands (Besharat et al., 2013), however, in this study, it appears that maximizers do not anticipate the dulling of their emotional states when evaluating happiness and satisfaction. These results are in line with the affective forecasting theory and imply that maximizers are more likely to be optimistic and hopeful when evaluating future affective states, however, these predictions might not be accurate.

The results of this study also highlight that maximizers do not anticipate regret when evaluating prospective affective states. Schwartz et al. (2002) along with many other researchers (e.g. Diab et al., 2008) have shown that maximizing is positively correlated with regret. However, the results of this study show that regret is possibly only *retrospectively* associated with unhappiness and dissatisfaction. When assessing future affective states, maximizers do not anticipate the regret they would consequently feel after having made the purchase. Though regret was not directly measured, given the high anticipatory ratings of the maximizer, it is likely that the maximizer did not anticipate feeling regret.

Using factor analysis and item-response theory, Rim, Turner, Betz and Nygren's (2011) tested the multi-dimensional Maximizing Scale by Schwartz et al. (2002) and the uni-dimensional Maximizing Tendency Scale by Diab et al. (2008) and found that the negative correlation between maximizing and well-being was associated with alternate search and decision difficulty, but it was not associated with having high standards or perusal of the optimal.

The results from this study lend more support to Rim et al's (2011) findings. Because a uni-dimensional scale was employed in this study, it is likely that the positive correlation between maximizing and anticipatory happiness and satisfaction is attributable to Diab et al's (2008) Maximizing Tendency Scale which measures the tendency to engage in the identification of the optimal. Therefore, it is likely that previous research demonstrated a significantly strong link between maximizing and retrospective unhappiness due to a weak definition of the construct itself.

Lastly, to test whether the non-significant results were attributable to the absence of measurement invariance, this study also assessed the presence of configural, metric and scalar invariance of the Maximizing Tendency Scale across all the four treatment groups (Purchase condition). Generally, measurement invariance is tested when examining whether a particular instrument measures the same construct across different cultures or over time. In this study, however, the main goal was to understand if all participants responded to the scale in the same way, and understood the items on the scale similarly. This study examined measurement invariance in order to assess if the measurement of maximizing influenced the treatments (purchase type) or, in other words, if individuals responded differently to the maximizing scale in different purchase conditions. One of the main findings from this study is that there is proof of measurement invariance for the Maximizing Tendency Scale. This means that the four groups in the study can be meaningfully compared and the differences in dependent measures can be meaningfully interpreted. This also suggests that the 9-item Maximizing Tendency Scale may be robust across given different purchase types – experiential and material, and that valid comparisons can be made across treatment groups. Thus, it can be concluded that the non-significant results are not attributable to the absence of measurement invariance.

This thesis had a very simple agenda and aimed to understand if maximizing can significantly predict anticipated happiness and satisfaction across several purchase conditions framed optimally, experientially and materially. Overall, it appears that maximizers anticipate greater happiness and satisfaction, regardless of purchase condition and that perusal of the maximizing strategy to make decisions need not necessarily relate to unhappiness or dissatisfaction, at least in prospect.

CHAPTER 7: CONTRIBUTIONS AND FUTURE RESEARCH

7.1 Theoretical Contribution

The most vital theoretical contribution of this study is that it provides preliminary evidence for the maximizer's anticipatory assessments of happiness and satisfaction. Previous research has established a strong link between maximizing and retrospective unhappiness, however, it is possible that maximizers are optimists when evaluating their anticipatory feelings of happiness. Satisficers, on the other hand, are possibly more optimistic about their retrospective evaluations.

This thesis highlights that the way in which maximizing is defined and measured significantly affects the theoretical conceptualisation of a maximizer. If maximizing is defined as simply the perusal of the best, then maximizing need not be related to unhappiness, however, if it is defined as a trait denoted by high standards, alternative search and decision difficulty, then it is possible that theoretically consistent results will be validated. Though Schwartz et al. (2002) find that maximizing is negatively related to dispositional optimism, this finding does not consider the maximizer's optimism when evaluating prospectively. The results also extend the findings from Caruso et al's (2008) temporal value symmetry model to the context of maximizing, since it

finds that maximizers do attach more affective value to future events as compared to past events, even though this might not be accurate. The results also support the presence of an overplacement bias for maximizers (Jain et al., 2011) in the sense that maximizers are more likely to anticipate accurate performance on future tasks and this overconfidence in accurate forecasting extends to future affective evaluations as well. More importantly, this study carries important theoretical implications for researchers who analyze the way individuals make decisions. Regret, pessimism, dissatisfaction and unhappiness are ubiquitous components of decision making for maximizers; however, the way in which maximizers assess the strength of their future affective states is also critical in establishing a theoretical conceptualization that is not as dismal as the current conceptualisation.

7.2 Managerial Implications

Because maximizers do not distinguish between experiential and material products when assessing anticipatory happiness and satisfaction, highlighting the emotion of prospective happiness, fun, excitement and pleasantness can be a useful strategy for practitioners who are in the business of selling experiences as well as material products. Attenuating the potential pleasure one can derive from a blue sky holiday has been a classic marketing strategy and the results of this study offer more support for the same. Moreover, if the maximizer is occasionally nudged by assurances regarding prospective happy emotions that could happy a purchase, then capitalizing on the maximizer's prospective optimism would help marketers create ads and campaigns that employ this optimism to its advantage. For example, to sell potential experiences, marketers who develop and create dating websites or apps can emphasize prospective feelings of affection for someone that one could meet through the website. Or a restaurant can attenuate the mouth-watering feeling one would experience when they consume their signature burger.

Similarly, a car company can highlight the fun and enjoyment an individual can potentially derive from buying their car. Specifically for material purchases, like pair of jeans, marketers could highlight the anticipatory feeling of finally finding the perfect fit. Thus, creating a prospectively happy outlook for experiences or products could go a long way for marketers to wish to engage their consumers.

7.3 Limitations and Future Research

Framing of purchases did not significantly influence anticipatory affective assessments for the maximizer. There are a few possible explanations for this finding. First, framing has been used very selectively in the area of experiential and material consumption. Most of the studies have asked participants to recall past purchases that were either experiential or material within a certain price range (e.g. van Boven & Glovich, 2003, Kumar & Gilovich, 2014). The advantage of using recall is that the involvement in the purchase is very high since the individual has already spent or intends to spend his resources, physical or otherwise, in acquiring an experience or material product. This method is fairly straightforward, however, it has been criticised because comparing a purchase of concert tickets to a pair of jeans does not allow for a valid comparison. Therefore, it was suggested that researchers employ framing of purchases to allow for more control (Dunn & Weidman, 2015). Framing of products as experiential and material can indeed be a tricky problem for the simple reason that the definitions put forward by van Boven and Gilovich (2003) do not accommodate framing. It is rather straightforward to frame a meal at a restaurant as experiential, however, it is not as effortless to frame material purchases. Drawing out the distinctions between experiential and material elements of a product is not as obvious as that of hedonic versus utilitarian products. In this thesis, experiential purchase was defined as something that encompasses the social element of watching TV with friends and family whereas

material purchase was defined in more *technical* terms. Though these framing manipulations have been borrowed from existing research and were pretested, it is possible that the underlying meanings associated with the framing are not comprehended by participants. This is perhaps the reason that even the more recent studies in this domain continue to use recall to assess retrospective evaluations or use purchase intention to investigate prospective assessments (Kumar & Gilovich, 2015). Future research could use similar framing, however, additional instructions could help in making sure that individuals were able to strongly and effectively imagine the purchase of a 4K TV and were actually *involved* in providing their evaluations. The purchase descriptions could also be framed more elaborately, with the inclusion of additional statements that would convey the experiential and material aspects of the TV in a more robust manner.

Some other studies have also used examples of experiential (vacation) and material (electronic gadget) purchases, however, by far; the recent studies have refrained from framing purchases as experiential or material. Though these methodologies have constraints, it is possible that they are more effective as compared to framing. Nonetheless, the SEM results did find that the relationship between the optimally framed experiential condition and anticipated happiness was significant when one item on the Maximizing Tendency Scale was removed from analysis. This supports the contention that experiential purchases do result in greater affective evaluations. Nonetheless, future research should investigate newer alternatives to manipulating experiential and material purchases that go beyond recall and measure prospective happiness and satisfaction in addition to excitement and pleasantness (Kumar & Gilovich, 2014).

A major limitation of this study is that no manipulation check was used in order to assess if the participants did consider the optimally framed TV to be the best in the market. Future

research can address this limitation by asking participants to rate the extent to which they believed that the optimally framed purchase was considered to be the best. Optimality, when emphasized prospectively, did not influence anticipatory assessments within maximizers. Future research should investigate if optimality, when emphasized *post* purchase or after committing to a choice, results in greater affective evaluations for the maximizer. For example, if a maximizer has already purchased a vacation package to Cuba, emphasizing that this vacation package was rated as the best package according to majority of the consumers who purchased this package, might significantly influence his retrospective assessments associated with his purchase. Future research can also employ scales developed by Schwartz et al. (2002) and Diab et al. (2008) in the same study, similar to that of Oishi et al. (2013) and investigate if there are any differences in prospective assessments of happiness and satisfaction. Future research can also investigate prospective happiness and satisfaction for different types of purchases (e.g. hedonic and utilitarian). This would help generalize the findings from this study to other purchase contexts. Lastly, though maximizing has been shown to be positively related to regret, whether happiness and regret are two opposing constructs is an interesting research question for further research in this domain.

7.4 Conclusions

This thesis examined the relationship between maximizing and anticipated happiness and satisfaction in the domain of experiential and material consumption. The main goal of the study was to investigate if maximizers anticipate greater happiness and satisfaction with an experiential purchase as compared a material purchase and also, to examine if optimally framed purchases result in greater affective evaluations for maximizers as compared to satisficers. The results were partially supportive of the hypotheses. The study found that purchase type does not influence

ratings of anticipated happiness or satisfaction; however, maximizing was significantly related to prospective happiness evaluations. The maximizer attaches more affective value to future purchases as compared to satisficers and does not anticipate the fading away of prospective happiness and satisfaction, regardless of the presence or absence of optimality. This study contributes to the core understanding of maximizing as a personality trait and also suggests that striving for the optimal in prospect is associated with greater affective evaluations for the maximizer.

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APPENDICES

Appendix A: The Maximizing Tendency Scale (Diab et al., 2008).

1.	No matter what it takes, I always try to choose the best thing.
2.	I don't like having to settle for "good enough"
3.	I am a maximizer.
4.	No matter what I do, I have the highest standards for myself.*
5.	I will wait for the best option, no matter how long it takes.
6.	I never settle for second best.*
7.	I am uncomfortable making decisions before I know all of my options.
8.	Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.*
9	I never settle.

*Items retained from the Maximizing Scale by Schwartz et al (2002)

Appendix B: Questions assessing Prior Knowledge

1. 4K televisions offer four times the resolution of 1080p
2. Ultra HD technology provides better sound than 1080p
3. The standard refresh rate is 100 times per second, or 100 mhz
4. TVs branded as LED are actually just LCD TVs that use LEDs as a backlight for the liquid crystals in the display.
5. If you have a 24″ 1080p TV and compare it to a 48″ 4K TV, they will not have the same pixel density.

Appendix C: Questions assessing Social Comparison

1. How frequently do you compare yourself to other people in general?
2. Comparing oneself to those who are better off can be useful

Appendix D: Model Fit Indices (Overall)

MODEL FIT INFORMATION

Number of Free Parameters	46
Loglikelihood	
H0 Value	-4648.595
H0 Scaling Correction Factor for MLR	1.2076
H1 Value	-4562.652
H1 Scaling Correction Factor for MLR	1.0986
Information Criteria	
Akaike (AIC)	9389.190
Bayesian (BIC)	9545.713
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	9399.935
Chi-Square Test of Model Fit	
Value	164.186*
Degrees of Freedom	97
P-Value	0.0000
Scaling Correction Factor for MLR	1.0469

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.056

CFI/TLI

CFI	0.964
TLI	0.957

Chi-Square Test of Model Fit for the Baseline Model

Value	1991.645
Degrees of Freedom	117
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.057

Appendix E: Model Fit Indices (Exclusion of Item 7 on MTS)

MODEL FIT INFORMATION

Number of Free Parameters	43

Loglikelihood

H0 Value	-4233.370
H0 Scaling Correction Factor for MLR	1.2094
H1 Value	-4191.590
H1 Scaling Correction Factor for MLR	1.0844

Information Criteria

Akaike (AIC)	8552.740

Bayesian (BIC)	8699.055
Sample-Size Adjusted BIC (n* = (n + 2) / 24)	8562.785

Chi-Square Test of Model Fit

Value	81.950*
Degrees of Freedom	83
P-Value	0.5120
Scaling Correction Factor for MLR	1.0197

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.000

CFI/TLI

CFI	1.000
TLI	1.001

Chi-Square Test of Model Fit for the Baseline Model

Value	1921.133
Degrees of Freedom	102
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.039

Appendix F: Measurement Invariance Output from MPlus

Number of Parameters: 156

Model	Parameters	Chi-square	df	P-value
Configural	156	340.951	204	0.0000
Metric	126	371.595	234	0.0000
Scalar	96	404.185	264	0.0000

Models Compared	Chi-Square	Df	p-value
Metric against Configural	30.644	30	0.4330
Scalar against Configural	63.234	60	0.3629
Scalar against Metric	32.590	30	0.3406

Number of Free Parameters 156

Loglikelihood

H0 Value -4177.320

H1 Value -4006.844

Chi-Square Test of Model Fit

Value 340.951

Degrees of Freedom 204

P-Value 0.0000

Chi-Square Contribution and P-Value From Each Group (degrees of freedom = 51)

EXP 111.243 0.000

EXPBEST 81.211 0.005

MAT 85.653 0.002

MATBEST 62.844 0.124

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.110	
90 Percent C.I.	0.089	0.130
Probability RMSEA <= .05	0.000	

CFI/TLI

CFI	0.939
TLI	0.921

Chi-Square Test of Model Fit for the Baseline Model

Value	2500.048
Degrees of Freedom	264
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.071

MODEL FIT INFORMATION FOR THE METRIC MODEL

Number of Free Parameters	126

Loglikelihood

H0 Value	-4192.642
H1 Value	-4006.844

Information Criteria

Akaike (AIC)	8637.284
Bayesian (BIC)	9066.021
Sample-Size Adjusted BIC	8666.717
(n* = (n + 2) / 24)	

Chi-Square Test of Model Fit

Value	371.595
Degrees of Freedom	234
P-Value	0.0000

Chi-Square Contribution From Each Group

EXP	116.761
EXPBEST	94.407
MAT	89.303
MATBEST	71.124

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.103
90 Percent C.I.	0.083 0.122
Probability RMSEA <= .05	0.000

CFI/TLI

CFI	0.938
TLI	0.931

Chi-Square Test of Model Fit for the Baseline Model

Value	2500.048
Degrees of Freedom	264
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.102

MODEL FIT INFORMATION FOR THE SCALAR MODEL

Number of Free Parameters	96

Loglikelihood

H0 Value	-4208.937
H1 Value	-4006.844

Information Criteria

Akaike (AIC)	8609.874
Bayesian (BIC)	8936.531
Sample-Size Adjusted BIC	8632.298
(n* = (n + 2) / 24)	

Chi-Square Test of Model Fit

Value	404.185
Degrees of Freedom	264
P-Value	0.0000

Chi-Square Contribution From Each Group

EXP	127.443
EXPBEST	102.774
MAT	94.750
MATBEST	79.218

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.098
90 Percent C.I.	0.078 0.116
Probability RMSEA <= .05	0.000

CFI/TLI

CFI	0.937
TLI	0.937

Chi-Square Test of Model Fit for the Baseline Model

Value	2500.048
Degrees of Freedom	264
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.112

Appendix G: MPlus Output for Main and Interaction Effects

MODEL RESULTS

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
HAPP BY				
S1	1.000	0.000	999.000	999.000
S2	1.201	0.068	17.548	0.000
H1	1.064	0.039	27.618	0.000
H2	1.329	0.076	17.576	0.000
MAXSAT BY				
M1	1.000	0.000	999.000	999.000
M2	1.086	0.081	13.450	0.000
M3	1.035	0.086	12.105	0.000
M4	0.965	0.097	9.909	0.000
M5	1.012	0.102	9.875	0.000
M6	1.227	0.089	13.837	0.000
M8	0.438	0.087	5.050	0.000

M9	1.036	0.097	10.727	0.000
HAPP ON				
MAXSAT	0.500	0.092	5.404	0.000
MAXSATXPUR	0.064	0.088	0.726	0.468
MAXSATXOPT	0.086	0.091	0.943	0.346
MAXSATXPOP	-0.012	0.089	-0.138	0.890
HAPP ON				
PURCHASE	0.095	0.100	0.948	0.343
OPTIMAL	0.084	0.100	0.842	0.400
POP	0.113	0.100	1.131	0.258
M6 WITH				
M9	0.502	0.126	3.986	0.000
M8 WITH				
M5	0.360	0.133	2.702	0.007
S1 WITH				
H1	0.930	0.142	6.565	0.000
Intercepts				
H1	6.297	0.140	44.991	0.000
H2	4.773	0.152	31.373	0.000
S1	6.234	0.133	47.029	0.000
S2	4.607	0.130	35.309	0.000
M1	4.932	0.108	45.625	0.000

M2	4.509	0.113	39.834	0.000
M3	4.698	0.110	42.767	0.000
M4	4.991	0.108	46.410	0.000
M5	4.468	0.110	40.455	0.000
M6	3.865	0.120	32.338	0.000
M8	5.383	0.088	61.265	0.000
M9	3.734	0.116	32.188	0.000
Variances				
MAXSAT	1.587	0.227	6.988	0.000
Residual Variances				
H1	1.495	0.165	9.066	0.000
H2	0.805	0.159	5.059	0.000
S1	1.396	0.148	9.438	0.000
S2	0.195	0.086	2.283	0.022
M1	1.008	0.118	8.554	0.000
M2	0.973	0.156	6.245	0.000
M3	0.979	0.120	8.171	0.000
M4	1.088	0.149	7.326	0.000
M5	1.083	0.205	5.276	0.000
M6	0.783	0.137	5.698	0.000
M8	1.409	0.168	8.376	0.000
M9	1.286	0.199	6.454	0.000
HAPP	2.037	0.293	6.956	0.000

Appendix H: Test of Between Subjects ANOVA – SPSS Output

Tests of Between-Subjects Effects

Dependent Variable: HappSat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	132.737[a]	7	18.962	5.964	.000	.153	41.751	.999
Intercept	7044.361	1	7044.361	2215.754	.000	.906	2215.754	1.000
Optimality	.239	1	.239	.075	.784	.000	.075	.059
Purchase	1.044	1	1.044	.328	.567	.001	.328	.088
median	126.176	1	126.176	39.688	.000	.147	39.688	1.000
Optimality * Purchase	1.482	1	1.482	.466	.495	.002	.466	.104
Optimality * median	1.942	1	1.942	.611	.435	.003	.611	.122
Purchase * median	.615	1	.615	.193	.661	.001	.193	.072
Optimality * Purchase * median	.073	1	.073	.023	.880	.000	.023	.053
Error	734.399	231	3.179					
Total	7870.438	239						
Corrected Total	867.136	238						

a. R Squared = .153 (Adjusted R Squared = .127)

b. Computed using alpha = .05

Appendix I: Test of Between Subjects ANOVA – SPSS Output

Tests of Between-Subjects Effects

Dependent Variable: HappSat

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	11.189[a]	3	3.730	1.195	.315	.033	3.584	.313
Intercept	4156.729	1	4156.729	1331.460	.000	.926	1331.460	1.000
Purchase	11.189	3	3.730	1.195	.315	.033	3.584	.313
Error	330.925	106	3.122					
Total	4545.750	110						
Corrected Total	342.114	109						

a. R Squared = .033 (Adjusted R Squared = .005)

b. Computed using alpha = .05

Appendix J: Contrasts Analysis Syntax and Results

```
UNIANOVA HappSat BY Median Purchase
/METHOD=SSTYPE(3)
/lmatrix 'Max vs Sat within EXP_BEST'
Median*Purchase 0 1 0 0 0 -1 0 0 Median 1 -1
/lmatrix 'Max vs Sat within MAT_BEST'
Median*Purchase 0 0 0 1 0 0 0 -1 Median 1 -1


UNIANOVA HappSat BY Median Purchase
/METHOD=SSTYPE(3)
/lmatrix 'EXP_BEST within Max'
Purchase*Median 1 -1 0 0 0 0 0 0 Purchase 1 -1 0 0

UNIANOVA HappSat BY Median Purchase
/METHOD=SSTYPE(3)
/lmatrix 'MAT_BEST within Max'
Purchase*Median 0 0 1 -1 0 0 0 0 Purchase 0 0 1 -1

UNIANOVA HappSat BY Median Purchase
/METHOD=SSTYPE(3)
/lmatrix 'Max vs Sat within EXP'
Median*Purchase 1 0 0 0 -1 0 0 0 Median 1 -1
/lmatrix 'Max vs Sat within MAT'
Median*Purchase 0 0 1 0 0 0 -1 0 Median 1 -1
```

Test Results

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.

Contrast	.450	1	.450	.141	.707
Error	735.400	231	3.184		

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	53.220	1	53.220	16.717	.000
Error	735.400	231	3.184		

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	19.551	1	19.551	6.141	.014
Error	735.400	231	3.184		

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	3.972	1	3.972	1.248	.265
Error	735.400	231	3.184		

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	.195	1	.195	.061	.805
Error	735.400	231	3.184		

Test Results

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	45.648	1	45.648	14.549	.000
Error	737.333	235	3.138		

Test Results

Dependent Variable: HappSat

Source	Sum of Squares	df	Mean Square	F	Sig.
Contrast	1.788	1	1.788	.570	.451
Error	737.333	235	3.138		