

To be or not to be, what's the difference?:

The mediating role of information search in the effect of accept and reject framing on choice

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ABSTRACT

TO BE OR NOT TO BE, WHAT'S THE DIFFERENCE?: THE MEDIATING ROLE OF INFORMATION SEARCH IN THE EFFECT OF ACCEPT AND REJECT FRAMING ON CHOICE

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The purpose of this thesis was to determine whether the assumption that accept and reject framing influences decisions by affecting the salience of different attributes is justified. That is, the current study sought to determine whether the type of information (positive or negative) searched for can explain the observed relationship between accept/reject framing and choice such that positive attributes have a greater influence if asked to accept an option, whereas negative attributes have a greater influence if asked to reject. Responses from 164 undergraduate participants were collected and analyzed using the PROCESS macro for SPSS. Results suggest that framing indirectly impacts choice sequentially through the first set of reviews examined then second set of reviews. These findings contribute to the literature on accept and reject framing and have implication for how to manage which reviews are used by consumers.

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1. INTRODUCTION

Consumers can employ a range of selection strategies when deciding which products to purchase or include in their consideration set, such as considering the selection process in terms of either including or excluding products. Research on framing has found that an individual's choice is influenced simply by asking them to either accept or reject¹ an option. Though some of these findings are contradictory, it is evident that framing has an impact on the selection strategy used. Moreover, the relationship between framing and choice is not always direct – research has found mediators between these two variables, such as elaboration of attributes (Laran & Wilcox, 2011) and information search (Verplanken & Holland, 2002). Though previous studies on information search often use search for product attributes, such as Verplanken and Holland (2002), many consumers also rely on the product reviews written by other consumers when making a purchase decision. Consequently, these reviews impact the sales of the product. Therefore, it is important to consider how the information search process through the use of product reviews varies depending on whether consumers build their consideration set by including or excluding options.

This paper examines literature exemplifying the effect framing has on choice and information search, along with literature on individuals' search patterns that may affect this relationship in order to address the research questions, "How does the process of information

¹ Evidence suggests that choices vary depending on whether the task is framed as accept or reject, however the exact terms studies have used may vary, such as using accept or include. Shafir (1993), for example, used a variety of terms (such as accept, award, prefer, or choose for the accept condition and reject, deny, cancel, or give up for the reject condition) while keeping the methods similar and found comparable results between terms. Henceforth, the terms accept and reject will be used, though the exact terms used in the study may vary, unless specified.

search through product reviews mediate the relationship between accept/reject framing and choice?”

Advancing knowledge of framing and its influence on information search is becoming increasingly important as the influence of and reliance on electronic word-of-mouth (eWOM) grows as an influential source of information. Certain aspects of eWOM change how information is acquired compared to word-of-mouth. For instance, Knapp and Daly (2002) indicated that social cues, such as social competence, can influence the persuasiveness of a message. However, with eWOM, social cues are no longer available, thus the decision process relies more heavily on the content of the information provided in the review or eWOM and other variables, thereby highlighting the importance of understanding which variables influence the information search process through online means. Accordingly, it is also crucial to understand the role framing has on information search as the process used to search for information could have greater significance now that cues previously used with word-of-mouth are not always visible. That is, other non-product related cues may also guide the decision process.

Understanding how relying on different decision strategies can influence information search may also provide some clarification for the contradictions found on literature regarding the effect valence of reviews have on the reviews' persuasiveness. Numerous studies have found that positive reviews have a stronger influence than negative reviews. For example, Pan and Zhang (2011) reported that both the valence and length of the review impact the reader's perception of the reviews helpfulness. However, they noted that positive reviews and longer reviews were considered more helpful. Similarly, Korfiatis, Garcia-Bariocanal, and Sanchez-Alonso (2012) noticed that reviews with a more positive rating were considered more helpful. Gershoff, Mukherjee, and Mukhopadhyay (2003) also found that, when participants have

previously agreed with the reviewer's ratings, strong positive ratings on a review were more influential than strong negative ratings.

Conversely, other studies have reported that the negative reviews are more influential. For instance, Tirunillai and Tellis (2012) examined the relationship between user-generated content and stock performance and found that the quantity of user-generated content had the greatest impact on performance followed by negative user-generated content, while positive user-generated content had very little influence on stock performance. Likewise, Park and Lee (2009) found that the effect of negative eWOM was stronger than that of positive eWOM. Moreover, Ludwig et al. (2013) reported that even the valence of the content of the review has an asymmetrical impact, such that increasing the negative content of the review had a more damaging effect than increasing the positive content by the same amount. Chevalier and Mayzlin (2006) also noticed that, even with many positive reviews, negative reviews had the greatest impact. These contradictions on the effect the valence of reviews has on its effectiveness could be due to the different processes used when selecting the process. As will be discussed shortly, the relevancy of different information is contextual. That is, under different conditions, certain information or attributes may be more or less relevant to the decision process. Accordingly, framing the task as accept or reject may alter which information becomes more relevant to the decision, and therefore influence the information search process which, in turn, affects an individual's choices. Exploring this relationship can provide insight on how consumers search for information and how it might vary under different conditions.

Currently, literature on accept and reject framing suggests that framing can influence an individual's decision. These findings are quite interesting as they indicate that a variable unrelated to the available options can influence which option is chosen. However, the research

only assumes that the observed findings are due to framing influencing which information is sought out without directly testing this assumption. Furthermore, the research does not consider how search patterns might vary after the first set of information is examined. Accordingly, this research fills the gap by identifying the process and permitting individuals to search for a second set of information. Moreover, previous literature on framing has predominantly focused on product attributes as a potential source of information whereas this study contributes by including product reviews. That is, it considers how framing can influence the search for information provided by other consumers and not by the company.

Findings from this study support a serial mediation hypothesis in which framing affects the first set of reviews, which then impacts the second set of reviews, which in turn influences the final choice. These findings have implications for literature and practice alike. For literature, the findings from this study identify an underlying process behind the effects accept and reject framing have on choice. For practice, it may have implications for trial periods and product returns. With a trial period, the consumer's decision is not so much which product they should buy, but rather which product they should retain. Thus, it is possible that consumers may rely on different strategies, such as a reject strategy, for this type of decision. Similarly, when deciding if they should return a product, the consumer may be thinking in terms of whether they should reject the product they currently own. The findings may also have implications for different stages of the decision process. As Heilman, Bowman, and Wright (2000) found, individuals use different purchasing strategies at different stages of experience with a product category. Accordingly, it is also possible that search behaviours differ across stages. That is, initially, when consumers are deciding which products to even consider, they may be more inclined to use a rejection strategy to reduce the size of their consideration set, but may use a selection strategy when making the

final decision. Thus, the findings from this study may provide an indication of how the consumer will search for information depending on whether they are using an accept or reject strategy. That said, it is also important to consider which information will be most accessible when the consumer is making a final decision. It is important for managers to fully understand consumer search patterns and how they vary across products to make the most of the product reviews for their products.

The remainder of the paper is organized as follows: first, the relevant literature is discussed to identify the gap in research, emphasize the importance of this research, and illustrate how the research can be conducted and which variables should be controlled. Second, the research hypothesis is listed. Third, the methods used to conduct the research will be described. Fourth, the results from the study are reported, showing how framing influences the reviews examined and how serial mediation can explain the relationship between framing and choice. Last, the implication and conclusions drawn from this research are discussed.

2. LITERATURE REVIEW

2.1 Framing

The literature on framing is vast and covers a variety of ways in which framing can influence decisions. Research on framing often examines the effects positive and negative framing has on subsequent decisions and evaluations. Levin and Gaeth (1988), for instance, explored the influence framing has on individuals' opinions of a product if they have or have not experienced the product. In the study, participants were asked to rate the quality of ground beef that was either described positively (i.e. "75% lean ground beef") or negatively (i.e. "25% fat

ground beef”) (p.375). Participants were either given a chance to taste the ground beef before, after being presented the description, or not at all. The authors found that the positive framing resulted in more positive evaluations of the ground beef compared to the negative framing condition. Additionally, they reported a weaker influence of framing when the participants were given an opportunity to taste the ground beef. These findings suggest that information with positive framing will be viewed favorably, whereas information with negative framing will be viewed unfavourable. Moreover, the results indicate that the influence of framing will be weaker when the individual has experienced the product. Similarly, Levin, Johnson, Russo, and Deldin (1985) found that participants gave more favourable ratings when options were presented in positive terms as opposed to negative terms.

Alternatively, other studies have explored the role risk and loss aversions plays in framing. For example, Gachter, Orzen, Renner, and Starmer (2009) conducted a natural field study to examine the effects framing has on registration decisions. More specifically, the authors examined the effect of framing early registration as a discount and late registration as a penalty, where both options were otherwise equivalent. The authors found that for junior students framing had an effect such that early registration increased when late registration was framed as a penalty. Thus, participants were more motivated by the negative framing in order to reduce their loss (for another example, see Tversky and Kahneman, 1981). Levin, Schneider, and Gaeth (1998) noted distinctions between these different types of framing and the various effects each had on individuals’ choices, implying findings for one type of framing cannot be generalized to another. Accordingly, the literature on framing explored henceforth will predominantly focus on the accept and reject types of framing.

To begin, several studies have reported that either asking an individual to accept or reject an option can influence their stated preferences. Shafir (1993), for instance, suggested that participants pay more attention to the positive attributes if they are required to select an option whereas they pay more attention to the negative attributes if they are asked to reject an option. Consequently, it is possible that the same option will be accepted and rejected depending on the number of positive and negative attributes. In the experiments, participants were presented multiple options, some of which had more of both positive and negative attributes (enriched), while others had fewer positive and negative attributes (impoverished). One would expect that the alternative that was selected when accepting would not be selected when rejecting; however, Shafir (1993) found that the option with more attributes (both positive and negative) was selected more often when accepting *and* rejecting compared to the option with fewer attributes. Thus, Shafir (1993) speculated that positive attributes are given more weight when making a decision to accept an alternative, while negative attributes are given more preference when deciding which alternative to reject, however he does not directly test this explanation. Along the same lines, Meloy and Russo (2004) found support for the compatibility between the selection strategy used (i.e. accept or reject) and the valence of attribute (i.e. positive or negative), such that individuals prefer to select from positive attributes but reject negative attributes. In other words, individuals are more inclined to attend to negative attributes when rejecting and positive attributes when accepting.

Conversely, Gazach (1995) noticed that there was a weaker preference for options with both very negative and positive attributes when accepting compared to when rejecting. That is, unlike the results reported by Shafir (1993), the participants did not appear to place greater weight on the positive attributes when accepting. Consequently, the underlying process that

individuals use when making a choice remains unclear. Wedell (1997) proposed that the difference in results between the two studies were due to the overall appeal of each alternative, such that if the overall preference is greater for the enriched alternative, results are consistent with those of Shafir (1993), whereas if the overall preference is not as strong for the enriched alternative, results are consistent with those of Ganzach (1995). Though not the intention of the study, these findings possibly indicate that consumers will still examine and consider both the positive and negative information for a product regardless of the frame used. Wedell (1997) argued that, compared to rejecting, the increased commitment associated with making a choice causes participants to pay greater attention to the differences between the options. That is, individuals are more selective when choosing as opposed to rejecting. Conversely, Sokolova and Krishna (2016) found that individuals making a reject decision took more consideration in their decision process compared to those making an accept decision. Although both the framing and attractiveness of options have a significant impact on an individual's decision to reject or accept options, the processes involved in making a decision remains ambiguous, thereby highlighting the importance of identifying the underlying process.

In addition to exploring the impact framing has on accepting or rejecting options, studies have also expanded on framing research by examining the impact of asking participants to include or eliminate many items from consideration. Huber, Neale, and Northcraft (1987), for instance, conducted a study that asked participants to accept or reject applicants for a job and found that, when costs for accepting and savings for rejecting were made salient, individuals would consider fewer applicants for interviews if asked to accept from an applicant pool compared to if they were asked to reject applicants from the pool. Similar to Wedell (1997), Huber et al.'s (1987) findings suggest that individuals are more selective when deciding which

items should be included compared to rejected. Yaniv and Schul (1997) conducted a similar study wherein participants were given the challenge of selecting the correct answer by either including options in their consideration set or eliminating options from their consideration set. As with Huber et al. (1987), the consideration set was larger when participants were asked to eliminate (or reject) incorrect options, once again highlighting the differences between the two selection processes. In a later study, Yaniv and Schul (2000) reported similar findings wherein consideration sets were larger when asked to eliminate, emphasizing the difference in criteria used to arrive at a decision for each strategy. Taken together, these findings illustrate differences in the processes behind the two approaches to making decisions.

Expanding on framing research, Bettman and Sujan (1987) examined the effect priming decision criteria has on evaluations of attributes and product choice. The authors suggested that framing will alter the salience of different criteria, thereby changing which criteria are relevant to the decision process and ultimately influencing the final decision. In the experiment, participants were primed with either criteria relevant to the task or not relevant to the task and were then asked to read information regarding two products that were either comparable or non-comparable (i.e. both products were from the same product category or they were from two different categories). Additionally, participants were asked to complete a questionnaire to assess their expertise level for the product categories. Of interest, the authors found that, when decision criteria have not been previously established (i.e. for novices and participants who were asked to select between two non-comparable products), the effect of framing had a significant impact on the salience of the primed criteria thus influencing the participants attribute evaluations and product choice. However, if a decision criterion has likely been previously established (i.e. for experts), framing did not influence decision between comparable products. Accordingly,

consumers' preferences appear to vary depending on which features of the product are made salient or relevant to the decision process. These findings suggest that framing can influence which attributes or criteria, such as positive or negative ratings, are most relevant to the decision process and therefore most influential on the decision. Consequently, framing the task as either accept or reject may impact which attributes are considered most relevant to the consumer's decision process thereby shifting which information they search for and, ultimately, which product they decide upon.

To summarize, individuals use different processes depending on whether they are deciding to accept or reject an alternative. Other studies on accept and reject framing have also reported that accept and reject framing often results in two distinct outcomes (Dhar & Wertenbroch, 2000; Laran & Wilcox, 2011) and can alter the weight and attention placed on attributes (Laran & Wilcox, 2011). Moreover, this effect is also observed when forming consideration sets from many options. Nevertheless, the studies discussed do not address how having the possibility of searching for information would impact the results. That is, it is clear framing has an impact on product choice, but it is not clear how it might impact information search which could then influence the final choice. Despite the extensive literature on framing, the studies do not actually examine which information the consumer searches for when making their decision. The search for information is assumed based on the consumer's evaluations or decisions. Thus, one of the aims of this study is to monitor search behaviours in order to identify the process accounting for the findings on framing. It will be argued that information search likely mediates the relationship between framing and choice. Consequently, it is also important to consider how framing influences information search along with choice.

2.2 Information Search

Although it is apparent that framing has an influence on choice, less is known about how framing might impact information search and, in turn, choice. Several articles, however, have provided evidence that framing not only affects choice, but also the type of information searched for. Highlighting the importance of considering information search and its impact on choice, Levin et al. (1998) reported that participants would eliminate options with less information quicker than options with more information in both accept and reject tasks. Thus, available information has an impact on choice in addition to framing. Additionally, as noted above, framing can influence the relevancy of different criteria (Bettman & Sujan, 1987), possibly indicating that the information searched for will also be influenced.

Expanding on the effect framing has on information search, Verplanken and Holland (2002) conducted a number of studies exploring the relationship between framing and choice. Though their primary focus was on how individual values influenced decisions, their studies also shed some light on the mediating role of information search. In their experiments, the participants' values were primed through framing and its effect on choice was measured based on whether a decision was made that was consistent with the primed values. That is, if environmental values were primed, its impact on choice was surmised through the participants' decision to select an environmentally friendly product. Verplanken and Holland (2002) found that, if the value was important to an individual's self-identity, priming that value through framing would result in a choice that was compatible with that value. In other words, priming a value increased the weight placed on attributes that reflect that value, such as, for example, environmentally friendly feature being given more weight when environmental values were primed. These findings are similar to those of Shafir (1993) wherein positive (negative) attributes

are given more weight when the task is framed as a selection (rejection) task. Furthermore, Verplanken and Holland (2002) reported that priming a specific value also resulted in increased information search for attributes related to that specific primed value, thereby indicating that framing influences information search and, in the end, choice. Therefore, it is also possible that accept and reject framing will result in greater weight placed on positive and negative attributes respectively, thereby influencing the information search process and, ultimately, the final choice.

Other studies have also suggested that a congruency between the consumer's objective during the decision process and the type information is preferred. Avnet and Higgins (2006) studied how the process used to make a decision influences the value a consumer places on the chosen product. The authors noted that, according to regulatory fit theory, the regulatory orientation is expected to influence the value the individual places on their choice such that the value increases when the strategy used fits the individual's orientation. The authors found that promotion-oriented consumers preferred relying on feelings over reason when making a decision, however this preference was reversed for prevention-oriented consumers. Findings suggest that a fit between the process used to make a decision and orientation is preferred. Consequently, it is possible that the value of information might vary depending on the decision strategy used. That is, a 'fit' between framing and information may be preferred. Thus, for this research, it was expected that a congruency between the task and review would be sought such that negative reviews are sought for reject while positive reviews are sought for accept.

Similarly, Pham and Avnet (2004) explored the effect a consumer's goal has on their reliance of different information. More specifically, the aim of their studies was to determine if different types of information (i.e. substantive vs. affective) are preferred depending on whether individuals are motivated by ought or ideals. Over several studies, the authors primed the

participants goal to either be ought or ideal and had them read either an attractive ad or an unattractive ad with either a weak or strong argument. After which they evaluated the product in the ad. The authors found that, when the participants' goal was primed to be an ought, the participants were more heavily influenced by the strength and substance of the claim and less influenced by the attractiveness of the ad. Participants primed to have their goal be an ideal, on the other hand, were more heavily influenced by the attractiveness of the ad and less so by the strength of the claim. Additionally, the authors even found similar results for individuals with a chronic orientation towards ought or ideal. Thus, the authors concluded that an ought goal (similar to prevention) results in an increased reliance on the substance of a claim and ad whereas an ideal goal (similar to promotion) results in an increased reliance on affective responses to the claim and ad. These findings illustrate that individuals rely on information that is more compatible with the priming or decision goal. Moreover, the study suggests that goals may be contextual as they can be primed. Thus, since consumers may have different objectives when asked to accept versus reject options, they may rely on different information to arrive at a final decision.

2.3 User reviews as information search

When making purchase decisions, consumers often form consideration sets of the products they are willing to purchase. Edelman (2010) noted that a consumer's consideration set expands as they acquire information from various sources, including user-generated content such as reviews. Accordingly, information search will be monitored through the use of product reviews. A benefit to using reviews is that consumers shopping online have the option to sort reviews based on whether they are negative or positive, thus consumers have full control over

whether they search for the positive or negative information of a product or brand. Moreover, there is ample evidence validating the impact user generated content and reviews have on consumer choice. For example, studies have found that the volume and valence of reviews influenced sales elasticity and stock performance (Floyd et al., 2014; Tirunallai & Tellis, 2012, respectively); social media increased sales of a product, brand's awareness, and return on investment for promotions (Kumar, Bhaskaran, Mirchandani, & Shah, 2013); and electronic word-of-mouth influenced a brand's image, which, in turn, influenced consumers' intention to purchase the brand (Reza Jalilvand & Samiei, 2012). Therefore, reviews are a critical component of information search which may mediate the relationship between framing and choice.

Zhang, Craciun, and Shin (2010) suggest that the consumer's objective when purchasing an item will moderate the relationship between the reviews valence and its persuasiveness. The purpose of the study was to provide insight as to why there have been contradictory findings in previous research regarding the effect of review valence. That is, various studies have found evidence that positive reviews have a stronger impact while other studies found support for negative reviews having a stronger influence. The two objectives for consumption proposed by Zhang et al. (2010) are a promotion objective (i.e. the consumer is motivated to achieve a positive result, or find the best product) and a prevention objective (i.e. the consumer is motivated to avoid a negative result, or avoid the worst product). Accordingly, the authors anticipated that consumers with a promotion objective will focus on positive reviews whereas consumers with a prevention objective will focus on negative reviews. Moreover, the authors suggested that certain products are automatically associated with one objective or the other. Using one product associated with promotion and one with prevention objectives, the authors had participants examine a set of reviews for each product and evaluate the persuasiveness of

either a very positive or very negative review. As hypothesised, they found that the positive review was rated as more persuasive for the promotion product whereas the negative review was rated as more persuasive for the prevention product. The authors then tested whether a similar relationship is found on an actual retail websites using data on review helpfulness from Amazon.com. Once again, the authors found that the objective associated with each product moderated the influence of review valence. As seen in the study, the goal influences the effectiveness of the review such that positive may be more effective in some situations whereas negative may be in others. Essentially, information search varies depending on the consumer's objective. Though their study relied on the natural association of one goal or the other with certain products, it may be possible, as seen in other studies (i.e. Pham & Avnet, 1997; Bettman and Sujan, 1987), to manipulate the goal through framing. Accordingly, depending on whether the consumer's goal is to accept or reject, their focus on the review and the reviews effectiveness might vary depending on its valence.

2.4 Search patterns, recency effects, and serial mediation

Up to this point, the literature on framing and information search would suggest that framing can influence which information is sought out, which then influences choice. However, given an opportunity to search for more information, the relationship between information search and choice may vary depending on consumer search patterns. Consumers rarely look at a single review when making a purchase decision. In fact, one consumer review survey reported that only 4% of consumers look a one review before making a purchase decision whereas 64% of consumers indicated they would look at two to six reviews before making a purchase decision (Local consumer review survey, 2016).

While the exact valence of the reviews sought out and the order in which they are examined has not been carefully studied, articles have suggested that, for certain product categories, consumers prefer to rely on positive and negative reviews rather than more moderate reviews. Pavlou and Dimoka (2006), for instance, examined seller feedback on eBay auctions and reported that, compared to average comments, both positive and negative comments had a stronger effect on consumer's intentions to purchase from a specific seller and the price they were willing to pay for the same product. Similarly, other studies have found that claims that argue for or against a product are considered more believable for search products (i.e. products where attribute information is objective and can be accessed prior to a purchase) compared to experience products (i.e. products where attributes may be subjective and uncertain until experienced) (Ford, Smith, & Swasy, 1990). Accordingly, Mudambi and Schuff (2010) reported that moderate reviews were predominately useful for experience goods, while positive and negative reviews are useful for search goods. Exploring the influence of review star ratings (1-5 stars) on sales, Forman, Ghose, and Wiesenfeld (2008) contend that neutral reviews (3 stars) are considered less useful than positive (4 and 5 star) and negative (1 and 2 star) reviews since they lack a message. In other words, consumers prefer to read positive and negative reviews as they provide information on the pros and cons of a product. Consequently, consumers may seek out information from both positive and negative reviews. Supporting this notion, one survey found that both positive and negative reviews influenced consumers' purchase decisions (Gesenhues, 2013). Thus, it is reasonable to expect that some consumers will look at one valence then the other, suggesting that the second set of reviews examined will depend on the first set of reviews examined.

Should consumers choose to examine both positive and negative information, the final choice becomes less clear. The literature on accept and reject framing suggests that information made salient through framing guides the consumer's decision, but it does not examine the possibility of consumers searching for additional information which may contradict the initial information the consumer focused on. When consumers examine multiple sets of varying information, they are required to decide which information will guide their decision. If the consumer cannot recall all the information, it is possible that a recency effect occurs where the most recent information has the strongest influence on decisions. A recency effect occurs due to the information most recently stored memory being easily accessible making it easier to recall (Cohen, 1981; Murdock, 1962). Accordingly, this information has the strongest effect on decisions. Literature on the recency effect has confirmed its effect on a variety of subjects. Chapman, Bergus, and Elstein (1996) reported a recency effect in a clinical setting. Using a sample of clinicians, the authors found that the information presented most recently had a stronger effect on both the experienced and less experienced clinicians' diagnosis. Within a law setting, Furnham (1986) replicated findings from studies dating back over thirty years indicating that the last piece of information given has the strongest impact on the participant's evaluations of the defendant's innocence. These findings were consistent for students and non-students alike. Similarly, Costabile and Klein (2005) noticed greater recall of the most recent information presented in a trial which then had a stronger influence on judgements. Buda and Zhang (2000) extended the recency effect to framing effects on product evaluations. Consistent with the literature on framing, the authors found that including a positive (negative) message with the product description had a positive (negative) impact on product evaluations. Additionally, they noted that the product evaluations were most heavily influenced by the framing when it was

presented at the end of the description, indicating a recency effect. While these studies provide evidence for a recency effect, they do not identify when a recency effect is most likely to occur. Other research fills this gap by indicating that a recency effect is very likely when participants are less familiar with the issue and are less engaged with the task (Haugtvedt & Wegener, 1994). Thus, for an experiment where product choice is hypothetical, a recency effect is highly probable.

Purnawirawan, Pelsmacker, and Dens (2012) expanded on the usefulness of each valence by manipulating the sequence of reviews in a review set to determine its influence on perceived usefulness of the review set. The authors reported that review sets that were overall positive or negative were considered more useful than a neutral set. Moreover, they found that a sequence that began and ended with positive (negative) reviews were perceived as more useful when the overall set was positive (negative). The authors argued this was due to primacy and recency effects, where the first and last pieces of information were easier to recall. Building on the work of Purnawirawan et al. (2012), Kolomiiets, Dens, and Pelsmacker (2016) considered how the effect of the sequence of reviews might influence purchase intentions when the first and last reviews were either the same valence or opposite valences. The authors found that, when the first and last reviews were both positive (negative), purchase intentions would increase (decrease). However, if the first and last reviews were not the same valence, purchase intentions were lower if the first review was positive. These findings possibly suggest that the recency effect is greater on purchase intention since purchase intentions were lower if the first review was positive and the last review was negative compared to when the first review was negative and the last review was positive.

Taken together, the literature on framing, review usage, and recency effects suggests the possibility of a serial mediation where framing influences the first set of reviews examined, but the second set of reviews viewed is negatively related to the first set of reviews, and choice is positively related to the second, or most recent, set of reviews. Therefore, an individual's final decision may be influenced by the sequence in which information is examined which may result in a recency effect undermining the framing effect.

2.5 Expertise as a control

Research has found that individual characteristics, such as need for cognition and happiness (Levin, Huneke, & Jasper, 2000; Lyubomirsky & Ross, 1999) or level of involvement (Lee, Park, & Han, 2008), influence the relationship between framing and choice. Accordingly, it is also possible that other individual characteristics affect the relationship between accept/reject framing and information search. Several studies provide evidence that an individual's familiarity and experience with a brand or product will influence the effect framing has on information acquisition.² The following section will first examine literature illustrating the influence expertise has on information search, then it will discuss the influence expertise has on framing's effect on information search to illustrate the importance of controlling for expertise in the analysis.

² Past literature on product familiarity and expertise have used various definitions and operationalisations of the concept. Although Alba and Hutchinson (1987) have examined previous research on expertise and noted two components (familiarity, which they described as a quantity of product related experiences, and expertise, which they described as a capacity to successfully perform product related tasks), the authors also reported that the dimensions of each interact and are closely related. Similarly, Kerstetter and Cho (2004) combined familiarity and expertise in their study as the two constructs were highly related. Accordingly, the present study will only measure expertise in the experiment.

Highlighting the effect knowledge has on the decision process, Cowley and Mitchell (2003) conducted a study to identify the effect product knowledge has on information acquisition. The authors relied on fictional brands in order to eliminate the effect of brand familiarity and to only capture the effect of product knowledge. The authors found that high-knowledge consumers acquired new information more easily than the low-knowledge consumers. Thus, it is possible that low-knowledge consumers are less capable of efficiently searching for information compared to high-knowledge consumers and are therefore more likely to rely on irrelevant information, such as the framing.

Park and Lessig (1981) examined the influence product familiarity has on the consumer's biases and heuristics, which then influence their decision process, such as confidence in choice and time required to make a decision. They defined three levels of consumer familiarity; the first level included individuals who had not searched, used, or owned the product (which was microwaves in their study); the second level included those who had searched and/or used the product, but never owned; the third level included individuals who owned the product. It was assumed that owning the product was an indication of high familiarity, while searching for information on the product or using the product was an indication of moderate familiarity. Their findings suggest that there are differences in information processing across the three levels of familiarity. In particular, the authors reported a longer decision time for those with a moderate familiarity, possibly indicating that those with high familiarity have a greater ability to process information, while those with low familiarity rely on simpler decision processes (heuristics). Additionally, confidence was greatest for individuals in the high familiarity group and weakest for those in the low familiarity group. These findings suggest that consumers with lower levels of

expertise are less capable of effectively processing information and more likely to be influenced by other cues.

Park and Kim (2008) sought to resolve the discrepancies in findings on the relationship between word-of-mouth and expertise levels. The authors argued that the preferred type of review depends on the level of expertise, such that experts are more heavily influenced by “attribute-centric” reviews (i.e. reviews that explicitly discuss key attributes of the product) whereas novices are more heavily influenced by “benefit-centric” reviews (i.e. reviews that discuss the attributes subjectively) (p.402). In their experiment, participants were shown an ad and reviews for a new product (portable media player) with the brand omitted and asked to indicate their purchase intentions. Participants were either presented attribute- or benefit-centric reviews and either a small (four) or large (eight) quantity of reviews. A questionnaire was then given to assess participants’ knowledge and expertise of the product category. The authors found that the fit of review type and expertise level was significant, though it was more important for experts compared to novices. That is, individuals with higher levels of expertise preferred attribute focused reviews while novices preferred benefit focused reviews, but the effect on purchase intentions was stronger for experts. To explain the results, the authors proposed that individuals with higher levels of expertise have a greater capacity to process information as they possess knowledge of and have experience with the product, thereby allowing them to evaluate the information more effectively. Their findings are somewhat similar to those on the fit between goal and information (such as Pham & Avnet, 1997; Zhang et al., 2010) since they suggest that a fit between expertise level and review allows for the information to be processed more easily. Consequently, consumers with high levels of expertise may be more capable of processing the information and thus be less influenced by the effect of framing.

Johnson and Russo (1984) considered how familiarity, which they defined as the understanding of a domain such as a product category, influences the acquisition of new information on a product. Their study involved either a choice or evaluation task for a high involvement product (compact cars). The authors found that participants with increased familiarity could recall new information more easily and would search for information more effectively. Moreover, they found that participants who were more familiar with a product category would learn the newly acquired information more easily up to a certain point, however, once familiarity increased beyond that point, the participants would not learn the new information as easily. The authors suggested that this “inverted ‘u’ relationship” is a result of consumers most familiar with a product category relying on prior experience and “performing a more selective search”. These findings indicate that consumers with increased familiarity search more efficiently and limit their information search to pertinent information, while disregarding unrelated information. Similarly, Bruck’s (1985) reported that consumers with less product category knowledge are more likely to rely on inappropriate and irrelevant information compared to those with more product category knowledge. Accordingly, consumers who are more familiar with the product category are less likely to be influenced by framing since they will be able to disregard information irrelevant to the task, such as the framing.

The studies examined so far have predominantly considered how expertise influences information search. Generally, the findings indicate that expertise influences search behaviours by improving the consumer’s ability to effectively search for information. Thus, these studies suggest that framing’s influence on search behaviours will vary depending on an individual’s expertise for the product category. However, these studies did not directly examine whether

expertise influences effect of accept/reject framing. That said, several studies provide evidence that framing has a stronger impact on those with less expertise.

Kinder and Sanders (1990), for example, examined the influence framing has on racial opinions and how they may be altered. The authors asked participants about hiring/promoting decisions and college admission decisions, but either framed the situation as an unfair advantage towards another race or as discrimination of their own race. Findings indicated that the framing used would impact which decisions supported. However, they also found that framing had a stronger effect on individuals with less knowledge of the topic such that the effect of framing virtually disappeared for the more knowledgeable individuals. Similarly, Schuck and de Vreese (2006) studied the effect positive and negative framing has on opinions of a political issue. In line with other research, the authors found that individuals had more favourable attitudes towards the issue when it was framed in positive terms compared to negative terms, though the effect was not as strong for individuals with more political knowledge. Haider-Markel and Joslyn (2001) also reported results consistent with these studies when applying framing effects to gun laws. Once again, those with low levels of knowledge were more heavily influenced by the type of framing used such that they would show more support if gun ownership was framed positively and less support if it was framed negatively.

Moreover, some of the studies discussed in the sections above also suggested a stronger influence of framing on individuals with less familiarity and expertise. Levin and Gaeth (1988), for example, found that directly tasting the ground beef will reduce the effect framing has on evaluations; thus, the difference in evaluations for positive and negative framing were less when participants were given an opportunity to experience the product, whereas the differences were greater when they were not given an opportunity to experience the product (i.e. evaluations

were more positive in the positive frame condition and negative in the negative frame condition). That is, direct experience with the product mitigates the framing effect. Likewise, Bettman and Sujan (1987) noted that priming had a greater influence on novices. Framing had a stronger impact on the salience of primed criteria and thus attribute evaluations for novices compared to experts. Lastly, Gachter et al. (2009) suggested that junior students were more influenced and motivated by type of framing compared to senior students.

The following sections will explore the conceptual model and hypotheses based on the literature reviewed above. Then the methods used to test the process behind the framing effects will be outlined followed by the results of the study. After which the results will be discussed. Lastly, contributions, limitations, and future research will be addressed.

3. RESEARCH HYPOTHESIS

3.1 Research Gap

The literature on framing and priming provides clear evidence that framing has an influence on the decisions of individuals – the choice will vary depending on whether someone is either choosing an option or rejecting an option. Generally, the authors suggested the variations in choices are due to a shift in value placed on information and attributes such that if asked to accept, individuals are inclined to pay greater attention to the positive information, whereas if asked to reject, individuals attend more closely to the negative information. Despite these assumptions, the literature on accept and reject framing, to the best of my knowledge, has not directly examined whether it is in fact which type of information (i.e. positive or negative) the

individual places greater weight on that causes the observed results. Thus, the present research aims to address this gap by elucidating the process. In particular, this study determines how framing influences the type of information an individual will search for to make their decision, thereby identifying the reason decision differ when asked to accept or reject options. Moreover, accept and reject literature has not explored search patterns following the introduction of the frame. That is, it is unclear how the framing effect will influence subsequent searches. This research considers how the second set of information searched for is affected by both the framing and first type of information sought out.

Literature on accept and reject framing has also typically involved only relying on product attributes to guide consumer decisions. The present study expands on this research by including product reviews – an influential source of digital information provided by other consumers rather than the company itself. Since product reviews can be easily organized based on valence, expanding the framing literature to include search for product reviews provides insights for literature on product reviews by identifying different strategies and search patterns consumers use depending on their goal when viewing reviews.

3.2 Research hypotheses

As detailed above, studies that explored the effect of accept and reject framing on choice generally found that the product with stronger positive attributes was chosen more often in the accept condition, whereas the product with the stronger negative attributes was chosen more often in the reject condition (Shafir, 1993; Meloy & Russo, 2004; Laran & Wilcox, 2011). Moreover, if the same option had both the stronger positive and negative attributes, it was selected as the accepted option *and* as the rejected option (Shafir, 1993). These studies have

suggested that the results are due to greater weight or attention placed on the type of information that is compatible with the framing (i.e. positive information for accept and negative information for reject), but they do not test this theory. Accordingly, the first aim of the current research is to determine whether the assumption made in framing literature is justified. Thus, the following is hypothesized:

Hypothesis 1: Framing will influence the first set of reviews chosen for further examination. In particular, accept framing will result in the positive reviews being chosen, while reject framing will result in negative reviews being chosen.

By influencing the type of information sought out, framing indirectly influences the product that is chosen. As found in Shafir's (1993) study, the enriched option with stronger positive and negative information was selected for both the accept and reject conditions. To determine if these results are due to the type of information participants were focusing on, a mediation test is required. If the first hypothesis is supported, then the second objective of the current study is to identify whether information search mediates the relationship between framing and choice. Thus, the following is hypothesized:

Hypothesis 2: Framing will have a significant indirect effect on choice through the type of information searched for such that the first type of information searched for will fully or partially mediate the relationship between framing and choice. More precisely, the following is predicted: Participants given the accept framing will be more likely to search for positive reviews and choose the product with the most persuasive positive reviews compared to participants given the

reject framing, who will be more likely to search for negative reviews and choose the product with the most persuasive negative reviews.

Lastly, it is possible that the influence of framing on choice will also be mediated through any additional search conducted by an individual. Although the studies on accept and reject framing discussed in the literature review did not allow for information search, thus the exact effect of framing on the sequence of reviews examined has yet to be studied, studies on product review usage suggest that both the framing and first review will influence the second review which, in turn, may influence the chosen option through a recency effect. Thus, the following is hypothesized:

Hypothesis 3: Framing will have a significant negative indirect effect on choice through serial mediation. More precisely, framing will have a positive effect on the first type of information searched for which will then influence the second type of information searched for, which ultimately influences the final choice.

See Figure 1 for the conceptual models of all three hypotheses.

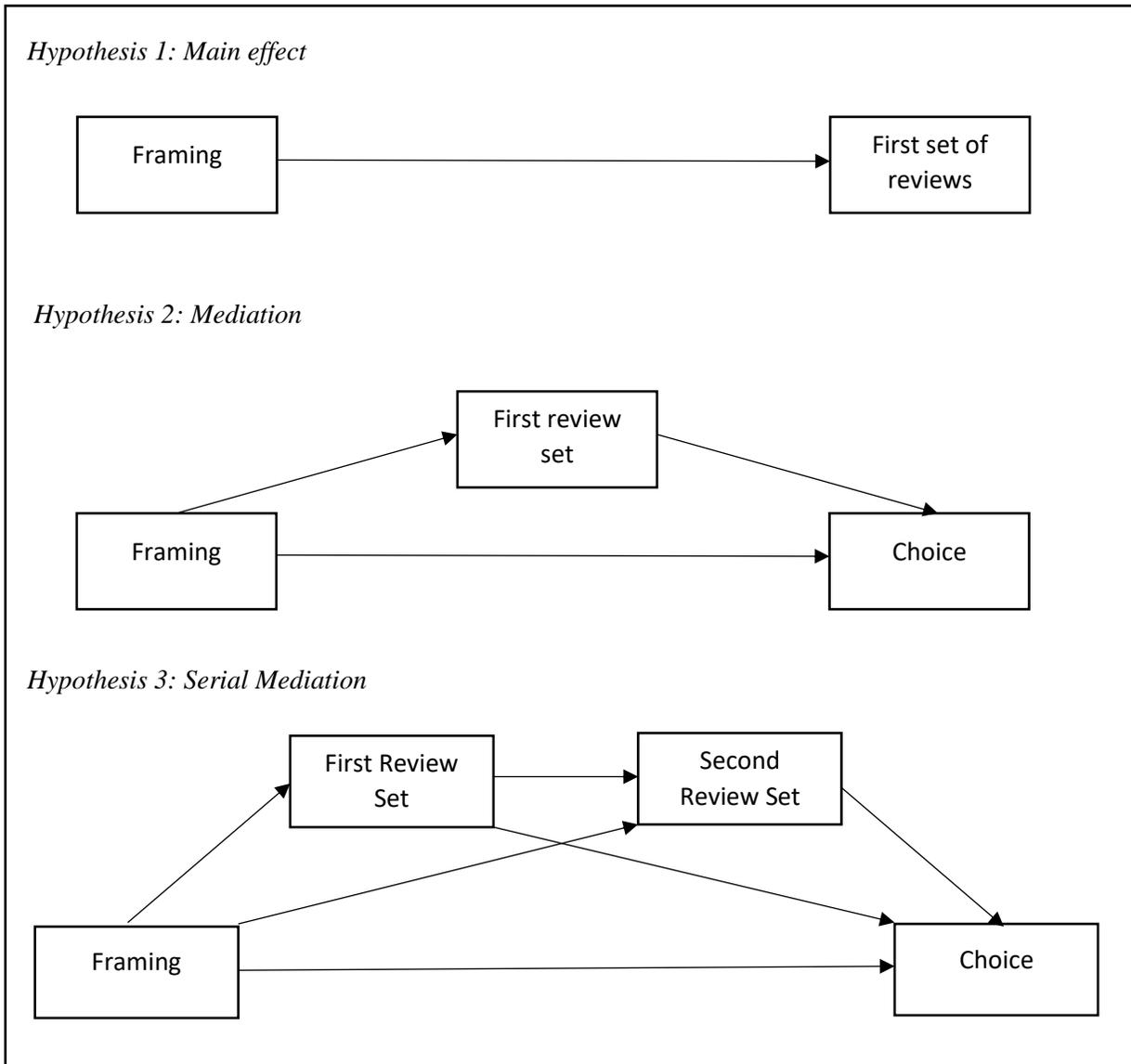


Figure 1: *Conceptual models of the hypotheses*

4. METHODS

4.1 Participants

The computer program G-Power was used to determine the number of participants that should be recruited for the study. Using a power of .80, an alpha of $p < .05$, and a medium effect

size (.25), the program suggested a minimum of 128 participants. Once the minimum was met, the survey was kept open an additional week to recruit extra participants to increase the statistical power. A total of 181 University of Guelph students in the marketing undergraduate program were recruited. Of those, 164 completed the survey fully and correctly answered the manipulation check and were therefore include in the analysis. The sample used for the analysis consisted of 97 male students (59%) and 67 female students (41%) between the age 18 to 24 years of age.

4.2 Stimuli and product

Similar to Doh and Hwang (2009), this study collected product reviews from a real website (amazon.com) and modified them to ensure they are suitable for the chosen product (cameras) and this study. Additionally, the strong positive (4 and 5 star) and negative (1 and 2 star) reviews selected consisted of those with a high helpfulness rating since, as Chen, Dhanasobhon, and Smith (2008) noted, helpfulness is an indication of review persuasiveness. Since reviewer credibility and trustworthiness along with website credibility have been found to increase the value a reader places on a review (Reichelt, Sievert, & Jacob, 2014; Kim, Cheong, & Kim, 2015), participants were told the reviews were those from verified purchases found on Amazon.com. Five sets of reviews were created; one for each star rating from 1 to 5. Each set of reviews contained two reviews, one for each product of the same star rating. In each set of reviews, one product had both the stronger positive and negative reviews and the other had the weaker positive and negative reviews. Since Park and Kim (2008) noticed that the number of reviews and their valence can influence individuals, each set of reviews only included two reviews of the same valence for both products to ensure that the number of each valence of

review, and correspondingly total reviews, remained constant for both products. Moreover, the aim of this study was to determine whether positive or negative reviews are preferred depending on the framing, therefore it was necessary to give the participant the option to view both positive and negative reviews in all conditions. See Appendix B for the reviews used in the study.

The product used for the study was digital mirrorless cameras. Cameras were selected as the product because consumer electronics are commonly purchased online (<http://www.statisticbrain.com/top-selling-internet-items/>). Moreover, cameras are costly, which would encourage consumers to search for additional information when making a decision in order to reduce the financial risk (Lin & Fang, 2006). Individual expertise of cameras is also likely to vary within the student population, with some students being more familiar with cameras than others.

4.3 Data Collection methods

Expertise was measured by questionnaire and used as a control variable. Although Alba and Hutchinson (1987) reported that the dimensions of expertise and familiarity are related, thus measuring one will also partially measure the others, they also cautioned that using the wrong measure could potentially result in weaker findings since certain dimensions are more appropriate for certain tasks. Thus, expertise was measured by using a modified version of the expertise and familiarity questionnaires used in Gursoy and McCleary (2004, Table 1, p. 76). See Appendix A for the modified expertise questionnaire.

Information search was measured by the star ratings that were selected as the first set of reviews and second set of reviews for viewing. The accepted (rejected) product was recorded

based on the participant's selected option when asked to choose one of the products (reject one of the products). The survey was given and the data was collected through Qualtrics.

4.4 Procedure

Students were recruited through the Department of Marketing and Consumer Studies' SONA system (<http://uoguelph-mcs.sona-systems.com/>), where they also accessed an anonymous link to the study on their computer. Only participants who read and agreed to the consent form could advance with the study, but, in line with REB requirements, all participants who signed up for the study through SONA received 2% course credit towards the participating course of their choice. Before beginning the choice task, participants were asked to complete the expertise questionnaire (see Appendix A). Participants scores on the twelve items of the expertise questionnaire were averaged to assess their overall expertise level.

Upon completing the expertise questionnaire, participants were told they are taking part in an online shopping scenario to determine which product they would (or would not, for the reject condition) consider purchasing based solely on the product's user generated reviews, a type of information typically available when online shopping, and without identification of the actual brands. Participants were informed that the reviews were from actual products sold on Amazon.com. Additionally, they were told that the ten reviews selected for each product were all written by individuals with verified purchases on the same website. Participants were then given the following online shopping scenario:

Imagine you are interested in purchasing a new camera and have narrowed your choice down to two comparable options. Both cameras have equally appealing specifications and attributes. Unable to decide between the two products based on their features alone,

you will now rely on product reviews to help make a final decision. You will now have the option to examine the reviews, but, to simulate a situation in which you have limited time to read the reviews, you may only examine two of the star ratings for the products.

After being given the scenario but before selecting which reviews to examine, one group of participants were told they would have to *choose* the product they would consider buying, while the other half of participants were told they would have to *reject* the product they would not consider buying. Before making their selection, they were given an opportunity to view up to two of the review sets of any star rating for both products. Each review set was only identified as 1 Star, 2 Stars, 3 Stars, 4 Stars, or 5 Stars until they select which set they would like to examine, though the order was randomized. Only after a type of review (i.e. 1, 2, 3, 4, or 5 stars) has been selected did the set of two reviews – one review of the same star rating for each product - expand for viewing. In this way, the participant could control which type of information they look at first and whether they look at any other set of reviews for the products presented. Their first choice for type of information was recorded to identify the preferred type of information sought immediately following the framing. The second choice of review was also recorded to identify the sequence in which reviews were examined for those who chose to view more than one set of reviews. After they've looked at the reviews, participants were then asked to select one of the products to either accept or reject. The group of randomly selected participants assigned to the accept condition were given the task, "Choose which product you would consider buying" from the presented alternatives, while the other group of participants assigned to the reject condition were given the task, "Reject the product you would not consider buying" from the presented alternatives. To briefly summarize, the participants were either told they would have to choose or reject from the two product options, then they were given the five star ratings to choose from,

with their first and second choices of reviews being used as a measure of the type of information searched for, after which they were asked to make a decision to either choose or reject one of the two products.

After making their selection, participants were asked to indicate their gender and age group. A manipulation check was given asking participants to indicate which task they were given to ensure they were using the appropriate strategy for their decision. Participants were then debriefed on the experiment before concluding their participation in the study. Participation was voluntary and students were permitted to withdraw from the study at any point without penalty, however the number of students who signed up through SONA was the same as the number of completed surveys recorded on Qualtrics. Data was analyzed on SPSS. The mediation models were conducted by running the PROCESS macro models 4 and 6 by Andrew Hayes (www.afhayes.com).

5. RESULTS

5.1 Overview of data analysis

To test whether the hypotheses for this study were supported, the PROCESS macro by Hayes was used to analyze the results. The purpose of the PROCESS macro analysis was to test which indirect effects of X on Y were significant. More precisely, the PROCESS macro was used to test the mediating effects of information search (operationalized the participants' choice of first and second sets of reviews) on the relationship between framing (using accept and reject) and product choice (using products A and B). For the mediation tests, an alpha level of 0.05 was

used as a threshold for significance and a 95% confidence interval was used for the indirect effects.

5.2 Manipulation check

A manipulation check was used to ensure the participants were paying attention to the task they were given by simply asking them to indicate whether they chose the product they would accept or reject for their decision. Of the 181 participants, seventeen used the wrong strategy when making their decision (11 males and 6 females). Of these seventeen participants, fourteen chose the option they would *accept* when making a decision when they were actually tasked with *rejecting* one of the options, while the remaining three chose the option they would *reject* when they were tasked with *accepting* one of the options. It is possible that the reason the reject condition used the wrong strategy more often than the accept condition is that, as Shafir (1993, p.555) suggested, individuals are naturally inclined to think of a decision as a choice from the presented option, rather than an elimination of an option. Thus, if the participant misunderstood the task, they were likely to use an accept strategy by default. Since these participants were relying on the wrong strategy to make a decision, the framing manipulation was unsuccessful. Accordingly, these seventeen cases were removed from the analysis.

5.3 Scale reliability

The scale used to measure expertise was a modified version of an expertise scale used by Gursoy and McCleary (2004). Cronbach's alpha will be used to assess the reliability of the scale for the sample used in this study. A Cronbach's alpha of .70 or greater is often accepted as an adequate indication of internal consistency, though higher is preferred if there are many items

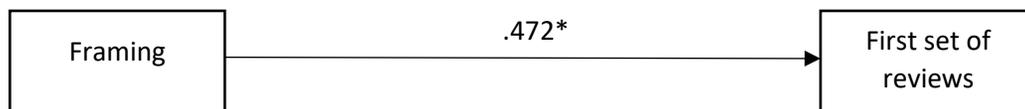
used for the scale (Cortina, 1993). The scale used in this study had 12 items, thus a Cronbach's alpha greater than .70 will be required. Testing the internal consistency, the expertise scale (Cronbach's $\alpha = .89$) is sufficiently reliable.

5.4 Hypothesis testing

5.4.1 Main Effect

The first hypothesis predicted that framing would influence the first type of information participants would search for. Specifically, it was predicted that the accept framing would be associated with a greater reliance on the positive (i.e. 5 and 4 star) reviews and the reject framing would be associated with a greater reliance on the negative (i.e. 1 and 2 star) reviews. For the analysis, accept was coded as 1 and reject as 0 while the reviews were coded as 1 to 5 for the 1 to 5 star reviews, respectively. To test the hypothesis, a linear regression was run with framing as the independent variable and the first set of reviews chosen as the dependent variable.

Additionally, expertise and gender were included as a control variables. Results indicated that framing was a moderately significant positive predictor of the first set of reviews ($b = .472$, $SE = .240$, $p = .051$). Since the coefficient is positive, these results indicate that an accept framing would lead to a higher star rating as the first set of reviews examined, supporting the main effect hypothesis.

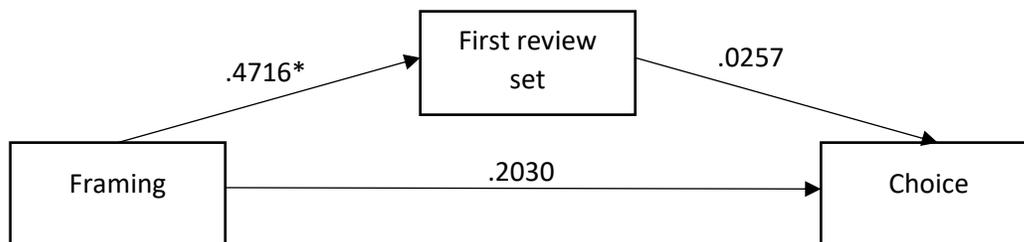


**Moderately significant with a p-value = .051.*

Figure 2: *Main effect*

5.4.2 Mediation

The second hypothesis predicted that framing would have an indirect impact on product choice through the mediator information search. That is, accept or reject framing would influence which reviews were examined first, which then influences the selected product. Specifically, it was predicted that the accept (reject) framing would induce participants to search for positive (negative) information which would result in the chosen (rejected) product being the one with the stronger positive (negative) reviews, which was product A in this study. Model 4 of the PROCESS macro was used to test the hypothesis that information search mediates the effect of framing on choice with expertise and gender once again included as control variables. Product A was coded as 1 and Product B was coded as 0. Results indicated that framing was only a moderately significant predictor of first set of reviews examined ($b = .4716$, $SE = .2404$, $p = .0515$), but the star rating of the first set reviews views was not a significant predictor of product choice ($b = .0257$, $SE = .1036$, $p > .05$). The effect of framing on choice was also not significant ($b = .2030$, $SE = .3191$, $p > .05$). These results do not support the mediation hypothesis. The indirect effect was tested using 10000 bootstrap samples with results indicating that the indirect coefficient was not significant ($b = .0121$, $SE = .0594$, 95% CI = $-.0914, .1638$).



**Moderately significant at the .0515 level.*

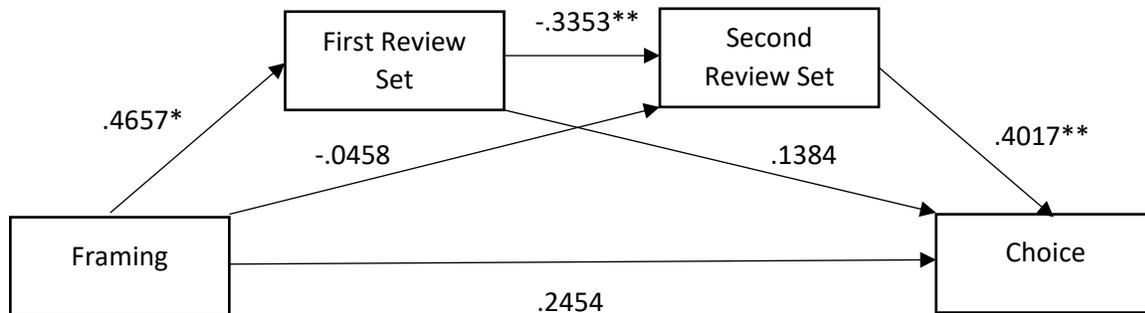
Figure 3: Mediation

Although the results were not statistically significant, some researchers advocate for the use of effect sizes “to supplement or replace statistical significance” (Preacher & Kelley, 2011, p.94). Researchers are cautioned against only reporting statistical significance as it may lead to an increase in results that are, in terms of effect size, insignificant, but, in terms of statistical significance, significant. Accordingly, the effect sizes for the mediation model will be reported. The relative indirect effect is calculated as follows: $1 - P_m = 1 - \frac{ab}{ab+c'} = 1 - \frac{ab}{c} = \frac{c'}{c}$ which, using the values from this data set, gives: $\frac{.0121}{.2151} = .0563$. Thus, only 5.63% of the total effect is mediated through the first review.

5.4.3 Serial Mediation

However, since the reviews were selected in an order, it is possible that the first set of reviews seen influences which reviews participants will want to examine as the second set. Accordingly, a serial moderation (Model 6 of the PROCESS macro) was then used to investigate the third hypothesis that information search, which included the first and second review sets searched for, mediates the effect of framing on choice while controlling for product category expertise and gender. That is, the indirect effect of framing on choice was studied through its effect on the first set of reviews followed by the first set of reviews effect on the second set of reviews (see Figure 4 for the path). An additional dummy variable was created to control for individuals who only examined the first set of reviews (coded as “sec” in the output, Appendix E). Results suggested that framing was a moderately significant positive predictor of the first set of reviews ($b = .4657$, $SE = .2367$, $p = .0509$), that the first set of reviews was a significant negative predictor of the second set of reviews ($b = -.3353$, $SE = .0687$, $p < .001$), and that the second set of reviews were a significant positive predictor of choice ($b = .4017$, $SE = .1289$, $p <$

.05). Framing, however, was not a significant predictor of the second set of reviews ($b = -.0458$, $SE = .2076$, $p > .05$) and it was not a significant predictor of choice ($b = .2454$, $SE = .3311$, $p > .05$). The first set of reviews was also not a significant predictor of choice ($b = .1384$, $SE = .1181$, $p > .05$). (See Figure 4). The indirect effects were tested using 10000 bootstrap samples. The results indicated that the indirect effect of framing on choice through first set of reviews then second set of reviews was significant ($b = -.0627$, $SE = .0443$, 95% CI = $-.1883, -.0043$), whereas the indirect effect of framing on choice through the first set of reviews was not significant ($b = .0645$, $SE = .0759$, 95% CI = $.0313, .2886$) and the indirect effect of framing through the second set of reviews was also not significant ($b = -.0184$, $SE = .0935$, 95% CI = $-.2264, .1526$). (See Table 1 for a summary of the indirect effects). These results support the serial mediation hypothesis. Moreover, examining the crosstabulations reveals that most participants would transition from one valence to the other (see Table 2). (See Appendix E for SPSS outputs).



* = moderately significant at the .0509 level, ** = significant at the .05 level.

Figure 4: Serial Mediation

Indirect effects of Framing on Choice	Effect	SE	LLCI	ULCI
Frame>1 st >Choice	.0645	.0759	-.2504	.1906
Frame>1 st >2 nd >Choice	-.0627	.0443	-.1883	-.0043
Frame>2 nd >Choice	-.0184	.0935	-.2264	.1526

Table 1: Indirect effect of framing on choice. Indirect 1 is through the first set of reviews only; indirect 2 is through the first and second sets of reviews; and indirect 3 is through the second set of reviews only.

First Review * Second Review Crosstabulation

Count			Second Review			Total
Frame			Negative	Neutral	Positive	
Reject	First Review	Negative	5	1	15	21
		Neutral	5	0	2	7
		Positive	20	4	12	36
	Total		30	5	29	64
Accept	First Review	Negative	6	1	10	17
		Neutral	3	0	4	7
		Positive	25	5	18	48
	Total		34	6	32	72
Total	First Review	Negative	11	2	25	38
		Neutral	8	0	6	14
		Positive	45	9	30	84
	Total		64	11	61	136

Table 2: Crosstabulations of first review and second review to illustrate a shift from positive to negative or negative to positive. Positive = 4 and 5 stars; Neutral = 3 stars; Negative = 1 and 2 stars.

To identify whether the transition from positive to negative is significant, a t-test will be conducted on the sample of participants who either switched valence or only examined reviews of the same valence. As neutral reviews are neither positive or negative, they will be excluded

from this analysis since it is unclear which direction would be considered switching valence.

Thus, the sample size is 111. A crosstab of this sample reveals that 70 participants (63.1%)

switch from one valence to the other (see Table 3). First, variance is calculated as follows:

$$\frac{P(1-P)}{n} = \frac{.63(.37)}{111} = .0021.$$

Taking the square root of the variance gives a standard deviation of .0458. Next, the t-value is calculated as follows: $t = \frac{\bar{x}-u_0}{s/\sqrt{n}} = \frac{.63-.50}{.0458/\sqrt{111}} = 2.838$. With a t-score of

2.838, 110 degrees of freedom, and using a one tail test, the p-value calculated is .0027. This

suggests that difference between the two groups is significant. Results will be further discussed

in the discussion section of this paper.

First Review * Second Review
Crosstabulation of Positive and Negative

Count

		Second Review		Total
		Negative	Positive	
First Review	Negative	11	25	36
	Positive	45	30	75
Total		56	55	111

Table 3: Crosstabulation of first review and second review, excluding neutral review, to illustrate a shift from positive to negative or negative to positive. Positive = 4 and 5 stars; Negative = 1 and 2 stars. Bold indicates a switch.

6. DISCUSSION

Then aim of the current study was to examine the relationship between framing, information search, and choice. More precisely, the study investigated whether the relationship between accept/reject framing and product choice could be explained by the type of product

reviews searched for by an individual. Existing literature framing has found that an individual's decision will vary depending on the frame given such that the option chosen will be compatible with the frame used (for examples, see Shafir, 1993; Laran & Wilcox 2011; Bettman & Sujan, 1987; Meloy & Russo, 2004). Within the accept and reject literature, it is suggested that accept is more compatible with positive attributes, while reject is more compatible with negative attribute (Meloy & Russo, 2004). Accordingly, studies have assumed that the variations in choice based on the frame used are due to the type of information an individual values and examines; however, this assumption is not tested in the studies. In line with previous research, it was predicted that the accept framing would result in greater weight placed on positive information, thus the positive reviews (i.e. 4 and 5 star) would be searched for more often with this frame compared to the reject frame. For reject framing, the negative reviews would be more compatible and therefore more often sought out. Additionally, it was predicted that the product choice would depend on the persuasiveness of the reviews searched for such that the same product, which was given both the more persuasive positive and negative reviews, would be both accepted in the accept condition and rejected in the reject condition.

Results revealed a positive and moderately significant relationship between framing and first review choice. That is, findings indicated that the accept framing was associated with an increase in positive reviews being searched for whereas the reject framing was associated with an increase in negative reviews being searched for. However, when it came to the second review set chosen to examine, framing did not have a significant effect on the rating of the review set. Thus, these findings indicate that accept framing shifts an individual's attention towards positive-information while reject framing shifts the attention towards negative information, but only for the first set of information they examine. That said, the findings still support previous research

since in past studies the participants only reviewed the information once and were not given an option to choose what they look for after. Sharir (1993), for example, had participants accept or reject an option based on the attributes listed for a product. Participants did not examine additional information after viewing the attributes, thus only the first set of information guided their decision. It is possible that the information examined first will guide the second set of information examined, but this was not explored in past research on accept and reject framing. This possibility of serial mediation will be further discussed shortly.

Extending the effect of framing on information search to the mediating effect of information search on framing and choice, the results do not support the second hypothesis. Although there is a positive and moderately significant relationship between framing and the first set of reviews, the relationship between the first set of reviews and product choice is positive as predicted, but not significant. That is, framing influenced the first set of reviews participants would examine, but it did not significantly influence the product they chose in the end. Although previous research did not include information search, they do suggest that it is the type of information relied upon that causes the observed results. The results of the current study do not support the findings of other research; however, as noted above, past research did not give participants an opportunity to search for additional information after they received the first set of information. Consequently, it could be the opportunity to continue searching for information that drives these differences in interpretations.

Results of the serial mediation provide some interesting insights. Firstly, the findings indicated that there is a positive and moderately significant relationship between framing and the first set of reviews examined, but a negative and significant relationship between the first set of reviews and second set of reviews examined. In other words, accept (reject) framing encouraged

participants to search for positive (negative) reviews first, but by looking at the positive (negative) reviews, participants then sought out contradictory information through negative (positive) reviews. These results support others' findings indicating that consumers will rely on both positive and negative information to arrive at a decision. Moreover, while the design of the study allowed participants to view a second review of the same valence or the opposite valence, results suggest that consumers were more likely to switch to the other valence for their second review choice. Additionally, framing did not have a significant effect on the second set of reviews examined. Thus, it suggests that framing only has an indirect effect on the second set of reviews examined by influencing the first set of reviews examined.

Secondly, the results showed that the second set of reviews examined had a significant and positive effect on the product chosen. These findings indicate that the most recent set of reviews has a strong influence on product decisions, supporting a recency effect, undermining the initial framing effect. Accordingly, the results for the 95% confidence intervals showed that framing had a significant negative indirect effect on choice through its influence on the first set of reviews which then influenced the second set of reviews, ultimately impacting choice. The results for the confidence intervals also indicated that framing did not have a significant indirect effect on choice through the first set of reviews or through the second set of reviews alone. Thus, framing only has an indirect sequential effect on choice through the first set or reviews then second set of reviews.

Thirdly, the findings from this study somewhat contradict previous findings on accept and reject framing since the accept framing lead to negative reviews guiding the decision whereas the reject framing lead to positive reviews guiding the decision. Consistent with previous accept and reject literature, the results from serial mediation indicate that, when given

an accept (reject) frame, participants will first rely on positive (negative) information. However, after this initial search, many participants then explored the negative (positive) reviews, thereby allowing them to view both the pros and cons of the product. In the end, they chose (rejected) the product with the weaker positive and negative reviews – product B – indicating that the most recent information had the strongest influence on their decision. Specifically, the most recent information for the accept condition was the negative review set, thus the product with both stronger positive and negative reviews (product A) was seen unfavourably, leading to the selection of the product B. Conversely, the most recent information for the reject condition was the positive review set, thus product A was seen favourably, leading to the rejection of product B. Although it was noted that these findings contradict previous literature, they do, however, still illustrate how the same product chosen in one condition can be rejected in the other condition.

7. IMPLICATIONS AND FUTURE RESEARCH

7.1 Theoretical contribution

This thesis contributes to the literature on accept and reject framing by identifying information search as a mediator on the relationship between framing and choice. Although the current study did not find the first review alone as a mediator, it did find that serial mediation occurs where framing indirectly influences choice through the first then second review sets examined. These findings highlight the importance of considering a consumer's entire search process rather than just their initial search behaviour. Additionally, it provides evidence that the assumptions made in past literature are probable since the accept framing was associated with a higher star rating being examined as the first review set whereas the reject framing was

associated with a lower star rating as the first review set. While the outcome of framing on choice was the opposite of what previous literature suggested, this study also found that framing can lead to the same option being chosen in one condition and rejected in the other. By allowing participants to continue their search for information after a first set of information has been examined, these findings permit a greater understanding of the impact framing has on the decision process by providing evidence of how it impacts consumers' search patterns. Moreover, it suggests that the most recent type of information has a stronger impact on consumer decisions.

In addition to the literature on accept and reject framing, this thesis contributes to the growing body of literature on consumer generated product reviews. Literature on consumer reviews provides ample evidence of the influence reviews have on firm performance and product sales and often highlight the importance of controlling the reviews, but rarely offer solutions to control which reviews are examined. The current study illustrates how the type of reviews used by consumers can vary depending on the consumer's goal, which can be manipulated through framing. Thus, the current study extends literature on accept and reject framing to product reviews. Additionally, this study further supports literature indicating that consumers will search for both positive and negative types of information.

7.2 Managerial contribution

The current study also has managerial implications. As noted above, this study identifies how the type of reviews relied upon can be controlled. Literature on product reviews often stress the importance on controlling product reviews, but firms are often limited on how they can control the influence of reviews. The results of this study indicate that if consumers are using a reject strategy, they will search the negative reviews first, whereas if they are using an accept

strategy, they will search the positive reviews first. There may not be many instances where a firm would want consumers to look at the negative reviews, but it could be beneficial for newer products that do not have many strong positive or negative reviews while their competition may have many of both. By encouraging consumers to use a reject strategy, they may be able to overcome the competitions abundance of strong positive reviews by shifting the consumers' attention towards the negative reviews. However, it is also important to consider how invested a consumer is in their purchase decision and how much search they conduct. Consumers will rely on both positive and negative reviews, therefore using framing to entice consumers to rely on one type of information first may have an effect opposite of what was intended if a recency effect undermines the framing effect once they conduct additional search.

Moreover, the results of this thesis indicate that it is important to understand the consumers' goals when they are searching for information. When a consumer is forming a consideration set, they may rely more heavily on a rejection strategy to decide which products should be included and consequently focus on the negative reviews at first. Conversely, once they are ready to make their purchase, they may be inclined to use an accept strategy and more likely to examine the positive reviews. These findings may have implications for review websites where it may be more useful to highlight the negative reviews when the consumer is starting their search, then highlight the positive reviews when the consumer is closer to making a decision.

7.3 Limitations and future research

Despite efforts being made to develop a reliable experiment, the current study does have some limitations. Firstly, the study relied on a sample of university students and therefore had very little variance in age and education level. Research has suggested that less education will

result in a stronger influence of framing (Valentino, Beckmann, and Buhr, 2001), thus it is possible the effect sizes would vary if a non-university sample was used. Additionally, any managerial implications may not be appropriate if the product is meant for a different segment of consumers as they may have different search behaviours. Future research could examine differences across age groups and education levels to determine when information search mediates the relationship between framing and choice.

Best-Worst scaling methods using discrete choice experiments can be an alternative methodology to understand the mediation process. For best-worst choice experiments and application of this methodology, see Noseworthy, Finlay, & Islam, 2010; Noseworthy, Wang, & Islam, 2012; Eckert, Louviere, & Islam, 2012; Czoli et. al., 2015; Kotnowski et. al., 2016. Best-Worst scaling will allow researchers to investigate consumer segments (see Bateman et. al., 2010; Burke et. al., 2010; Marley and Islam, 2012; Meade and Islam, 2010) in information processing for product choice.

Secondly, different types of framing have different effects (Levin, Schneider, & Gaeth, 1998), thus results are limited to accept and reject framing. Information search may not mediate the relationship between framing and product choice for all types of framing. That said, some research identifies other primes that can influence the type of information searched for and, in turn, final choice (Verplanken & Holland, 2002).

Thirdly, the research may be limited to the chosen product category. Other studies have suggested that product category and type affects the influence of framing and product reviews, such as search goods and experience goods (Zhang, Ma, & Cartwright, 2013) or utilitarian and hedonic goods (Dhar & Wertenbroch, 2000). Along the same lines, the effects of framing may be different in practice where other factors will influence individuals. Studies have found numerous

factors that influence how and when product reviews are used, such as the age of the product (Cui, Lui, & Guo, 2012), and the strength and maturity of the brand (Ho-Dac, Carson, & Moore, 2013; Zhu & Zhang, 2010) to name a couple. Future research could determine whether information search mediates the relationship between framing and choice for other product categories.

Lastly, the current study is limited to the type of information searched for since it only explored which star rating was examined following the accept and reject frames. Other studies on product reviews have suggested that the volume of reviews can have an equally, if not stronger, influence on firm performance (Tirunallai & Tellis, 2012). Participants in the current study could only examine one set of reviews for each star rating and a maximum of two sets of reviews. It is possible that the framing would influence the volume of each type of review examined. The sequence of reviews examined could also differ if given the opportunity to search through additional reviews. Future research could expand on this study by giving participants more freedom to explore reviews how they would if they were shopping online. Alternatively, future research could attempt to use big data to identify online search behaviours for different products that may have different goals by identifying when certain reviews have a greater influence on performance, such as trial periods where the decision is whether a product should be rejected or product returns (see Minnema, Bijmolt, Gensler, & Wiesel, 2016, for an example where positive reviews increase sales, but also higher returns, which could be due to additional focus on the negative reviews).

7.4 Conclusion

This study examined whether information search mediates the relationship identified in past research between accept/reject framing and choice. The purpose of this thesis was to confirm an assumption made in the literature on accept and reject framing that framing's effect on choice was due to an increase in salience of positive attributes for the accept conditions and negative attributes for the reject conditions. Although the choices indicated that this was a plausible explanation, the studies did not include any mediator to test whether the results were in fact due to the individual's attention shifting towards one type of information or the other. Additionally, the current study attempted to extend accept and reject framing to product reviews, a popular source of information that can be easily sorted based on the star rating. In line with existing literature, it was predicted that the accept framing would be associated with a higher star rating chosen for the first set of reviews whereas the reject framing would be associated with a lower star rating chosen. It was also predicted that there would be mediation between framing and choice through the first set of reviews and serial mediation through the first set of reviews then second set of reviews.

These predictions were tested with the PROCESS macro for SPSS using models 4 (for mediation) and 6 (for serial mediation). It was found that framing influenced the first set of reviews chosen as predicted. That is, accept framing increased the chances of positive reviews being chosen, while reject increased the chance of negative reviews being chosen. The mediating effect of first set of reviews alone did not explain the relationship between framing and choice, rather the serial mediation of the first set of reviews followed by the second set of reviews explained the relationship. The results indicated that the first set of reviews were the only significant predictor of the second set of reviews, illustrating that, given the chance to search for

information, the effect of framing will vary based on an individual's information search sequence. When shopping online, consumers have many reviews they can examine and need to decide how to narrow their information search down. The current study suggests that consumers may rely on other cues, such as the goal of their search, to decide which reviews they will examine. The accept and reject framing can alter the goal of their search behaviour such that an accept frame will shift their initial goal towards researching the positive reviews and reject framing will shift it towards negative reviews, however the duration of this effect has yet to be confirmed.

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APPENDICES

Appendix A: Expertise Questionnaire

On each of the scales below, please select the number which you feel best describes you:

I currently own or have recently owned (within the last 6 months) a camera

Yes/No

Compared to an average person, I have owned many cameras

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

Compared to an average person, I am familiar with SLR/DSLR cameras

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

If I like a camera brand, I rarely switch to another brand

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I can easily recall the attributes and specifications of a camera

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I still remember the specifications of my current/most recent camera (if applicable)

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I can easily differentiate cameras based on specifications

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

Given a list of cameras, I can easily group cameras that have similar attributes and specifications

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I can easily list several SLR/DSLR camera models

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I do not understand all the available information about a camera

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

I usually put more thought into making a camera purchase than the average person

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

If my friends or family need help deciding on a camera, they are likely to ask me for help

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

Appendix B: Reviews

5 Star reviews



Product A



I have nothing but good things to say about this camera. I've owned mine for just over a year now and it has been nothing short of perfect. It's relatively small, it switches on quickly, takes great pictures even with the "kit" lenses, the focus is precise and blazingly fast, and it has good low light performance. It's the first camera I've that takes good pictures out of the window of a moving car. The camera has much more than offer than being a point and shoot.

Product B



I was nervous to relinquish my old camera, but I wanted a smaller camera that I could take with me everywhere. Now that I have this camera, I wish I'd made the switch much sooner! This camera is GREAT in low and captures colors vividly. I'm very happy and recommend this to anyone wishing to take photos that make them look like a better photographer than they really are.

4 Star reviews



Product A

★★★★☆ I've had this camera for about 9 months now and although not perfect, I love it! I use mine for backpacking and astrophotography. Pros: Fantastic Sensor, Good Auto Focus, and Great performance in low light. Cons: Short battery life.



Product B

★★★★☆ Great travel camera. Takes amazing landscapes and long exposure pictures. I have problems getting the focus to lock on when taking pictures of birds in flight or fast-action sports. It has plenty of speed, but most action shots are not keepers.

3 Star reviews



Product A



Good beginner camera. One annoying thing I found is that when you chose to set the shutter to a 2 second delay, it automatically goes back to normal after one shot. So when I want to shoot 2 second delays over and over, it's impossible. I ended up buying a wireless remote to help solve this problem. Seems like a pretty bad oversight.

Product B



Great travel camera. Takes amazing landscapes and long exposure pictures. I have problems getting the focus to lock on when taking pictures of birds in flight or fast-action sports. It has plenty of speed, but most action shots are not keepers.

2 Star reviews



Product A



I wasn't too happy with this camera. Although it has more features than most people will ever need, the manual is absolutely worthless. Without a reasonable manual the learning curve is going to be steep and lengthy with many lost opportunities. The battery also doesn't hold the charge as long as mentioned, even with the camera in airplane mode.

Product B



I am a professional photographer, and was looking for a smaller camera for personal vacations to prevent wear and tear on my work camera. The camera itself appears well made, but the low light is a mess and ruined an entire evening's worth of shots on our Thanksgiving trip. Also, the auto focus is slow and inaccurate.

1 Star reviews



Product A

★☆☆☆☆ I bought this camera specifically for a trip to South America. Within three weeks the camera stopped recognizing the lens was attached. Now I am without a camera for the remainder of my trip. When it was working, the camera required 10 - 15 seconds to "recharge" between shots so I also missed shots because of the "busy" lag. Really dissatisfied with this camera.



Product B

★☆☆☆☆ I found this product to be a disappointment, shots are often blurred or simply don't look good. The quality wasn't all that and I could not figure out how to lift the back screen so that I can see myself when taking selfies. Compared to my old camera, this camera has poor color capture and poor clarity.

Appendix C: SPSS Output for Main Effect

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.054	.587		6.901	.000
	Frame	.472	.240	.153	1.962	.051
	Expert	-.029	.097	-.023	-.298	.766
	Please indicate your gender	-.334	.244	-.107	-1.371	.172

a. Dependent Variable: First

Appendix D: SPSS Output for Mediation

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.16.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 4
 Y = ChoiceA
 X = Frame
 M = First

Statistical Controls:
 CONTROL= Expert Gender

Sample size
 164

Outcome: First

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.1855	.0344	2.3558	1.9010	3.0000	160.0000	.1316

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.0540	.5874	6.9014	.0000	2.8939	5.2141
Frame	.4716	.2404	1.9621	.0515	-.0031	.9463
Expert	-.0289	.0970	-.2979	.7662	-.2204	.1626
Gender	-.3344	.2439	-1.3713	.1722	-.8161	.1472

Outcome: ChoiceA

Coding of binary DV for analysis:

ChoiceA	Analysis
.00	.00
1.00	1.00

Logistic Regression Summary

-2LL	Model LL	p-value	McFadden	CoxSnell	Nagelkrk	n
224.7403	1.0485	.9023	.0046	.0064	.0085	164.0000

Model

	coeff	se	Z	p	LLCI	ULCI
constant	-.5369	.8791	-.6107	.5414	-2.2600	1.1862
First	.0257	.1036	.2475	.8045	-.1775	.2288
Frame	.2030	.3191	.6361	.5247	-.4224	.8284
Expert	.0744	.1273	.5846	.5588	-.1751	.3239
Gender	.1359	.3226	.4212	.6736	-.4964	.7682

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

Effect	SE	Z	p	LLCI	ULCI
.2030	.3191	.6361	.5247	-.4224	.8284

Indirect effect of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
First	.0121	.0594	-.0914	.1638

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:

10000

Level of confidence for all confidence intervals in output:

95.00

----- END MATRIX -----

Appendix E: SPSS Output for Serial Mediation

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.16.3 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 6
 Y = ChoiceA
 X = Frame
 M1 = First
 M2 = Second

Statistical Controls:
 CONTROL= Expert sec Gender

Sample size
 164

Outcome: First

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.2640	.0697	2.2839	2.9788	4.0000	159.0000	.0209

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.7001	.5961	6.2074	.0000	2.5228	4.8773
Frame	.4657	.2367	1.9675	.0509	-.0018	.9331
Expert	-.0073	.0959	-.0760	.9395	-.1967	.1821
sec	.7820	.3184	2.4562	.0151	.1532	1.4108
Gender	-.2457	.2428	-1.0119	.3131	-.7253	.2339

Outcome: Second

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.6891	.4748	1.7160	28.5705	5.0000	158.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.0363	.5759	7.0090	.0000	2.8989	5.1738
First	-.3353	.0687	-4.8771	.0000	-.4710	-.1995
Frame	-.0458	.2076	-.2205	.8257	-.4559	.3643
Expert	-.0298	.0831	-.3581	.7208	-.1939	.1344
sec	-2.6290	.2812	-9.3505	.0000	-3.1844	-2.0737
Gender	.1750	.2112	.8287	.4085	-.2421	.5921

Outcome: ChoiceA

Coding of binary DV for analysis:

ChoiceA	Analysis
.00	.00
1.00	1.00

Logistic Regression Summary

-2LL	Model LL	p-value	McFadden	CoxSnell	Nagelkrk	n
213.0299	12.7589	.0470	.0565	.0748	.1001	164.0000

Model

	coeff	se	Z	p	LLCI	ULCI
constant	-2.3560	1.0756	-2.1904	.0285	-4.4640	-.2479
First	.1384	.1181	1.1718	.2413	-.0931	.3699
Second	.4017	.1289	3.1161	.0018	.1490	.6543
Frame	.2454	.3311	.7413	.4585	-.4035	.8944
Expert	.1081	.1333	.8112	.4173	-.1531	.3693
sec	1.5861	.5626	2.8194	.0048	.4835	2.6888
Gender	.1276	.3381	.3773	.7059	-.5351	.7903

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

Effect	SE	Z	p	LLCI	ULCI
.2454	.3311	.7413	.4585	-.4035	.8944

Indirect effect(s) of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
Total:	-.0166	.1092	-.2504	.1906
Ind1 :	.0645	.0759	-.0313	.2886
Ind2 :	-.0627	.0443	-.1883	-.0043
Ind3 :	-.0184	.0935	-.2264	.1526

Indirect effect key

Ind1 :	Frame	->	First	->	ChoiceA
Ind2 :	Frame	->	First	->	Second -> ChoiceA
Ind3 :	Frame	->	Second	->	ChoiceA

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:

10000

Level of confidence for all confidence intervals in output:

95.00

----- END MATRIX -----