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When objective price information is not available: Impact of unpublished or missing prices on the purchase journey for high costs, high involvement products

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WHEN OBJECTIVE PRICE INFORMATION IS NOT
AVAILABLE: IMPACT OF UNPUBLISHED OR MISSING PRICES
ON THE PURCHASE JOURNEY
FOR HIGH COST, HIGH INVOLVEMENT PRODUCTS

A Dissertation
Presented to
The College of Business
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By
Thomas J. Dammrich
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Biography

The author was born in Belleville, Illinois on November 30, 1952. He graduated from Assumption High School in East St. Louis, Illinois and received his Bachelor of Arts degree in Economics from DePaul University in 1974. He also received a Master of Business Administration from DePaul University in 1978 and a Master of Science in Accountancy from DePaul University in 1985. He has served as the Chief Executive Officer of two industry trade associations.

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Abstract

Every model of the consumer purchase journey includes an evaluation phase, during which consumers search for product attributes including price. While much has been written about search, knowledge uncertainty, and the role of price in continued search and purchase intent, very little, if any, empirical work has been done to understand the impact on the path to purchase when objective price is not available. This study undertakes a field experiment with random assignment in a natural setting to examine the impacts on consumer behavior related to continued search, lead generation and purchase intent when objective price is not available. The results provide evidence that the absence of objective price information during the evaluation stage of the purchase journey reduces search, lead generation and purchase intent. While this experiment was conducted in the context of a high cost, high involvement consumer product, many executives in B2B marketplaces would benefit from evidence of the impact of hiding price from B2B customers, providing a fertile area for future research.

Introduction

Overview

The consumer decision journey or purchase journey can be long and complex for high cost, high involvement products. It can also be much simpler and more direct for low cost, low involvement products. At the center of most models of the purchase journey is evaluation of the product under consideration for purchase. The evaluation stage of the consumer purchase journey involves the search for information about the product including product attributes and price.

There is robust literature that considers consumer search and the impacts of knowledge uncertainty on the extent of search and purchase intent (Ratchford, 2001; Urbany, Dickson and Wilkie, 1989; Block, Sherrell and Ridgeway, 1986; Urbany, 1986; Zimmerman and Geistfeld, 1984; Stigler, 1961). The literature on pricing is also rich and addresses issues from the consumer's response to prices, framing of prices, how to price, and the impact of objective price, reference prices, and perceived price on purchase intent and much more (Krishna, Briesch, Lehmann and Yuan, 2002; Compeau and Grewal, 1998; Chen, Monroe, Yung-Chien, 1998; Lichtenstein, Ridgway and Netemeyer, 1993; Kahneman and Tversky, 1979). Nearly all of this research and pricing literature assumes that objective price information is readily available for search in the purchase journey.

As Owen (2003) pointed out, there are many situations encountered by consumers where price information is missing or hidden. In his exploratory work, Owen studies both low cost, low involvement products (such as milk at a

convenience store where price is not marked) and high cost, high involvement products (such as fine jewelry in a locked case with prices tags turned upside down). Extant research suggests that missing prices for low cost, low involvement products would be expected to have little impact on continued search and purchase intent for these products because they are likely to be familiar to the purchaser, involve a single use and involve little risk. High cost, high involvement products, on the other hand, tend to be durable products involving significant perceived risk, and price plays an important role in determining deal valuation, continued search and purchase intent (Shannahan, Dupuis, Bush, and Rocco, 2009; Owen, 2003; Bloch, et al., 1986; Urbany, 1986; Stigler, 1961).

While nearly all of the search and pricing literature assumes that objective price information is readily available for search in the purchase journey there are industries of significance where price information is missing or very hard to find. While noted industries may not exhaust the list of industries that hide price, it does include all of the significant consumer product industries noted in an exhaustive review of the literature. New boat and RV manufacturers and dealers typically do not publish prices on manufacturer, dealer or third-party websites or in printed product literature. This is also true of in-ground pool manufacturers and dealers, some window manufacturers and dealers, and other consumer durable goods industries. It is also true in professional services industries, including healthcare and legal services, where prices are not obvious or advertised. There are more than 18,000 listings on RVTrader.com that do not include a price (Edwards, 2018). And, a representative of BoatTrader.com reported directly to

the author that there are more than 29,000 new boat listings on BoatTrader.com that do not include a price.

The Center for Medicare and Medicaid Services (CMS.gov), effective January 1, 2019, requires hospitals to publish a list of their standard charges on the internet (Glidden, 2018). How this flows across other types of health services and providers and how it impacts consumer behavior in purchasing healthcare remains to be seen. In this heavily regulated industry, it does demonstrate the push for better pricing visibility for consumers. In less regulated industries, changes will likely require a paradigm shift in management thinking about pricing visibility.

Understanding of consumer decisions when objective price is not available and price knowledge is uncertain will fill a gap in the literature and provide valuable insights to companies that hide objective price in industries selling high cost, high involvement products. There may be alternatives to hiding price and one intent of this study is to provide clear supporting evidence for companies and industries to re-consider this practice.

Recreational boating is a significant industry. According to the U.S. Bureau of Economic Analysis, in their preliminary estimate of the Outdoor Recreation Satellite Account, in 2017 recreational boating and fishing accounted for \$38.3 billion of gross economic output (U. S. Bureau of Economic Affairs, 2018). The National Marine Manufacturers Association's Statistical Abstract of Recreational Boating (2018), reports that retail sales of new boats, engines, and trailers, alone, totaled \$13.5 Billion in 2017.

Though new boat sales have been increasing for the past seven years they have been in a long-term decline for nearly forty years (NMMA Statistical Abstract of Recreational Boating, 2018). Data on boat registrations for the past fifteen years, provided by Info-link (database of all boat registrations from 1996 to the present), show that the number of first-time boat buyers has declined by 37%. That represents 106,000 fewer first time boat buyers in 2015 than in 2000 (Discover Boating, 2017). Reversing these trends and growing sales of new boats, and first-time boat buyers, is a key challenge of the industry. The internet has created far greater transparency in pricing during the past twenty years, yet there are some remaining industries that do not display objective price, including new recreational boats. Could the failure to display objective offering price in new powerboat advertisements be part of the cause for this steady erosion in new boat sales and first-time boat buyers? Also, could the results of this research change the pricing practices of entire industries that do not publish objective offering price on manufacturer, dealer or third-party websites, or in printed product literature? Clear supporting evidence from this study could be an impetus for management and industries to reconsider the practice of hiding objective price in their online and other advertising.

In interviews with boat manufacturers, as they were recruited for this study, they gave a number of reasons for not providing objective pricing information on their website, and for not allowing dealers to provide objective price on dealer websites or third-party websites. These reasons reflect a belief system that influences their interactions with consumers and include:

- It encourages (requires) consumers to contact the dealer for pricing, allowing the dealer the opportunity to build a relationship – understand the needs of the customer and make suggestions on what options may best serve the customer’s needs;
- Concern that a customer would compare our boats to the competition solely on price, without fully understanding the uniqueness of the products we build;
- Competitors undercutting price. While price sheets are available today the competition has to work a little harder to fully understand how our products compare to theirs;
- MSRP pricing can be misleading to the retail customer as there is always some level of discounting off of MSRP and final selling price is different from dealer to dealer, based on percentage mark up the dealer needs to operate his dealership and freight costs.

“Customers require price information when anticipating higher price points but are most sensitive to the effort involved in price search, perceived manipulation, and social pressures of interaction with sales associates... (Owen, 2003, p. 140).” A study of first-time boat buyers (Discover Boating, 2017) found that they were intimidated by the thought of contacting or visiting a boat dealer. The belief system of boat manufacturers and dealers described above, that leads them to advertise, “Request a Price” rather than provide an objective price, likely triggers the negative reactions Owen describes above. This suggests that failing to offer an objective price in advertising for boats, and other high cost, high

involvement products, leaves the buyer feeling manipulated or forced to engage in a social interaction with a dealer they are not yet prepared for. Could this delay, derail or terminate search and end the purchase journey? And, in the age of pricing transparency created by the internet, could this be contributing to the long-term decline discussed above?

During the fifteen-year decline in new boat buyers mentioned above, the internet has led to many changes in consumer expectations, especially surrounding transparency, in the shopping experience, consumer search and the consumer purchase journey (Biswas, 2004; Su, 2008; Jiang, 2002). Extant literature suggests that these missing prices could be limiting sales of new boats, RVs and other high cost, high involvement products where price is missing in the search process (Shannahan, et al., 2009; Owen, 2003; Bloch, et al., 1986; Urbany, 1986; Stigler, 1961).

Repeat boat buyers have experience in purchasing a boat and through experience likely have developed an internal reference price for a new boat of interest to them. First time boat buyers likely lack this experience and are searching for information on a wide variety of product attributes including price. This is consistent with learning theory and the information seeking behaviors of new car purchasers (Bennet and Mandell 1969).

Research undertaken for Discover Boating, a national boating promotion campaign, has concluded that for every 100 first-time boat buyers who enter the purchase funnel, only two buy a boat (Discover Boating, 2017). The path to purchase is filled with excitement and disappointment as first-time boat buyers do

their research. As the consumer purchase journey can be derailed at a number of points (dealer experience, discovery of hidden costs, lack of comprehensive research resources, lack of peers to consult), the purpose of this study is to understand how the lack of objective price information from manufacturers and dealers, and in particular on a popular national third-party website, impacts continued search for product attributes, lead generation and purchase intentions for new powerboats.

Objectives and motivations

Extant research demonstrates that objective price can impact perceived price, perceived quality, perceived value and purchase intention (Chang and Wildt 1994). But what is the impact on the purchase journey, including continued search for product attributes, lead generation, and purchase intention, when objective price information is not available? The purpose of this research is to understand the impact on continued search for product attributes, lead generation and purchase intent when objective price information is missing. In the context of this study, objective price is not provided by the new boat dealer in new boat listings on a major third-party website or by dealers or manufacturers on their own websites.

This study undertakes the ambitious task of conducting a field experiment with random assignment in a natural environment to examine the impacts of missing prices for a high-cost, high involvement product on continued search for product attributes, lead generation, and purchase intent (as a proxy for product

sales). While there has been significant work in the domain of pricing, there is a dearth of empirical research in the area of missing prices, and the impact of missing prices on continued search for product attributes, lead generation and purchase intent. Owens (2003) provided helpful exploratory work in this field and suggested future research on the extent customers use the internet in searching for price information in categories that typically omit or hide prices. While not exactly responsive to Owens' request for future research, this research does use the internet to test the impact of missing prices on continued search for product attributes, lead generation and purchase intent for new powerboats, a category that typically and historically has omitted objective price information from manufacturer, dealer and third-party websites and manufacturer product literature.

Theoretical contributions

This examination of missing prices on the purchase journey for high cost, high involvement products is unique from three perspectives. First, in spite of the practice in some industries to hide objective price, there have been no empirical tests published of the impact of missing prices on continued search for product attributes, leads, and purchase intent for high cost, high involvement products. While there is a substantial body of work on pricing, there is a dearth of scenarios studied where objective price is missing. This study is unique in seeking to understand the impact of missing prices on the purchase journey and fill in missing information in the extant literature.

Second, the proposed study is conducted as a field experiment with random assignment to obtain unbiased measures of continued search, lead generation and purchase intent for a high cost, high involvement product in a natural, online context. This field experiment seeks to provide causal findings of the impact of missing objective price on the dependent variables being measured. The experiment is being done in a natural environment in which consumers searching to purchase a boat visit a third-party website in the normal course of their daily lives. In this randomized experiment, the visitors are randomly assigned to the treatment group (objective price is visible) or the control group (objective price is not visible). Random assignment facilitates causal inference by making samples randomly similar to each other so that subjects in the treatment group and control group will both have the same average characteristics (Cook, Campbell & Shadish, 2002). This helps to rule out alternative causes because the only difference between the groups is the treatment. Random assignment reduces the likelihood of potential confounding causes as they are no more likely to happen in the treatment group than in the control group (Cook, et al., 2002). “Randomized experiments are the most potent research design for determining whether or not x causes y (Highhouse, 2009, p. 554).”

Third, the results of this study are based on consumer behaviors in a real-world purchase journey (real consumers considering the purchase of real products) rather than on decisions consumers “might make” in a hypothetical purchase journey, as seen in other studies. This study furthers understanding of

the extent to which information (and in this case price information) drives the behavior of buyers in the marketplace as was suggested by Urbany (1986).

Finally, much of the research that has been done on the price of consumer goods, focuses on the impacts of various aspects of price at the point of sale. This research examines the impact of missing prices during the information search portion of the purchase journey and likely much earlier in the purchase journey than research focused at the point of sale.

Managerial contributions

Interviews with executives in the recreational boating and RV industries identified that there are high level discussions within these companies about the appropriateness of hiding price in the internet era, where greater transparency is expected. There is reluctance to change decades old practices without compelling evidence to guide their decision on this matter. This study seeks to provide evidence to help manufacturers and dealers in industries that hide price answer that very important question. Evidence from this study will provide support for a fundamental change in the way industries, that currently hide or omit objective price, approach the availability of price information made available to consumers. The findings could positively impact product sales in a significant manner in those industries where objective price is missing during the evaluation stage of the purchase journey.

Manufacturers in industries that hide or omit objective price do so largely due to pressure from their retail dealer networks. The results of this study may

provide manufacturers in industries that hide or omit objective price with evidence to overcome the objections of their dealer networks. Dealers, as well as their manufacturers, want increased product sales. If this study provides support for the assertion that the availability of objective price information during the search process leads to increased search, lead generation and purchase intent, it would be difficult evidence to ignore in industries selling high price, high involvement products.

Outline of the study

This study is organized in six chapters. The second chapter is the review of literature including a discussion of the purchase journey, level of involvement, uncertainty and search, extent of search, economics of information theory, knowledge and choice uncertainty, pricing theory and purchase intent. Chapter three covers the proposed model development and the development of Hypotheses supported by theory and prior research. The fourth chapter discusses the research methodology including the measures used, and the study design. Chapter five provides the results of the study and the Hypothesis testing. Chapter six is a discussion of the research findings, managerial and theoretical implications of findings, the limitations of this research, suggestions for future research and concluding observations.

Literature Review

This chapter is divided into seven sections. This chapter begins by defining the consumer purchase journey including a discussion of the central role of information search and evaluation in the consumer purchase journey. A model of the traditional consumer purchase journey and a contemporary model of the consumer purchase journey are presented in Figure 1. Next, relevant literature and research analysis on the level of involvement and uncertainty in search, extent of search, economics of information theory and its application to search, and theory related to knowledge and choice uncertainty are discussed. The final sections discuss relevant literature and research analysis related to pricing theory, the role of price, how the lack of objective price impacts concepts in the pricing literature, and the use of purchase intent as a proxy for sales.

The purchase journey

The consumer decision process is a journey, also referred to as the purchase journey. Norton and Pine (2013) describe it as sequence of events that customers go through to learn about, purchase and interact with products. The consumer decision process, or purchase journey, has been conceptualized as a purchase funnel. Consumers move in a linear manner through the stages of the purchase funnel. Until recently, these purchase funnel concepts concluded with the purchase of the product, but more contemporary conceptualizations include post-purchase evaluation, product advocacy and continuous evaluation due to the rise of social media and customer reviews.

Hall and Towers (2017) suggest that consumer decision making moves through stages from problem recognition, information search, evaluation of alternatives, product choice and purchase evaluation (Blackwell, Miniard and Engel, 2006; Olshavsky and Granbois, 1979; Darley, Blankson and Luethge, 2010). Others discuss awareness, interest and final decision (DeBruyn and Lilien, 2008); awareness, consideration, evaluation, purchase and use (Nunes, Bellin, Lee and Schunck, 2013); consider, evaluate, purchase, enjoy, advocate, bond (Hudson and Hudson, 2013). Wu (2001) summarizes an effect hierarchy model developed by Lavidge and Steiner (1961) into three general processes, “1. Gaining awareness and knowledge about the product, 2. Developing an attitude toward the product, and 3. Making the purchase decision (Wu, 2001, p. 44.).”

Nunes, et al. (2013) share Accenture’s non-stop customer experience model developed to recognize the impacts of the internet and social media on the purchase journey and compare it to a traditional conceptualization of the purchase funnel. The Accenture model suggests that evaluation continues after purchase and during use as consumers are on a continuous, non-stop decision journey, which is noted in Figure 1.

What all models of the purchase journey have in common is an evaluation stage. In the evaluation stage the consumer searches for product information, including product attributes and price, before they make their purchase decision. Information search as part of evaluation, therefore, is at the center of most models of the purchase journey, including both traditional and contemporary models.

For decades, how consumers make decisions has been a central question of marketing and consumer behavior research. Nunes, et al., (2103) state, “The new Rule #1 is, know your customer’s behavior on their path to purchase (p. 50).” Acknowledging this rule and the centrality of information search in the evaluation stage of the path to purchase, it is important to understand how missing information, in particular, missing objective prices, affects continued search, lead generation and purchase intent for high cost, high involvement products.

Level of involvement, uncertainty and search

Information search plays a critical role during the evaluation phase of the path to purchase. The research question in this study involves the search for price information for a high cost, high involvement product and the impact on continued search, lead generation and purchase intent when objective price information is not available. How consumer behaviors differ when objective price is not available and price knowledge is uncertain will provide valuable insights to companies that hide objective price in industries selling high cost, high involvement products and will fill a gap in the literature.

What does the literature mean by involvement? “Involvement refers to how much money, time, thought, energy and other resources consumers devote for purchasing a product. It is one of the fundamental concepts used to explain the consumer buying process (Solanki, 2013, p. 56).”

Low cost, low involvement products are likely to be familiar to the purchaser, involve a single use and involve little risk. High cost, high

involvement products, on the other hand, tend to be durable products involving significant perceived risk and price plays an important role in determining deal valuation, continued search and purchase intent (Shannahan, Dupuis, Bush, and Rocco, 2009; Owen, 2003; Bloch, et al., 1986; Urbany, 1986; Stigler, 1961). The context for this study is the recreational boating industry and recreational powerboats are a high cost, high involvement product. This study seeks to understand the behavior of consumers at the evaluation stage of the purchase journey who are engaged in search for a new recreational powerboat.

“Customers are more willing to search for price information when purchase price risk is high (e.g., durable goods), where range of prices for the same item is wide (e.g., car dealer to car dealer), and where product variability can signal high price variability (e.g., fine jewelry). Yet consumers continue to encounter many shopping situations where prices are missing, hidden or vaguely described (Owens 2003, p. 136).” In the case of recreational powerboats, all three of these conditions exist which should indicate a high willingness to search for information in the evaluation stage of the path to purchase of a new powerboat.

Radder and Huang (2007) suggest that symbolic meaning, image reinforcement or psychological stimulation may also be involved in the purchase of a high involvement product (Solomon, 1986). All of these factors, symbolic meaning, image reinforcement and psychological stimulation, are frequently involved in the purchase of a new recreational powerboat further identifying new recreational powerboats as a high involvement product.

Extent of search

There is usually greater complexity in a high involvement product leading to more thought, more search and longer journey times (Hall et al., 2017).

Zimmerman and Geistfeld (1984) reported, in their study of economic factors affecting search, that their results “lends support to the idea that consumers are influenced in their search efforts by the relative size of the expenditure (Zimmerman, et al., 1984, p. 129).” All businesses would rather sell a product today than tomorrow, next week, next month or in the future. Missing information that further lengthens the purchase journey or, worse, derails the search and purchase journey would not seem to be in a seller’s best interest. Empirical evidence provided by this study of the impacts of missing objective prices could help to change the belief system described above and result in more product sales.

Bloch, et al. (1986) developed a framework for consumer information search. The framework modeled pre-purchase search and ongoing search, the latter being the primary subject of their study. Involvement in the purchase was a primary determinant of pre-purchase search. Making a better purchase decision is considered the consumer’s primary motive for search. The outcomes of pre-purchase search were increased product and market knowledge, better purchase decisions and increased satisfaction with the purchase outcome.

Encouraging search to the point of preparedness to purchase is desirable if the goal is to sell more product. Delaying, derailing or terminating search is likely to result in the consumer delaying a purchase or abandoning the purchase

journey. The extent of product search is influenced by the availability of product information and the time available to search, among other things (Bloch, et al., 1986). The extent of search is also influenced by the benefit to be derived from additional search compared to the cost of additional search (Stigler, 1961). Most search literature is concerned with price search. If an objective price is not available on dealer, manufacturer or third-party websites, or in product literature, the extent of search is likely to be minimized or search terminated because objective price cannot be found.

As Owen (2003) suggested, the requirement to visit a dealer to get price information likely leaves the customer feeling manipulated, lacking price knowledge and bargaining power and uncomfortable being forced into a social interaction with the dealer the customer may not be ready for. If the consumer is not ready or willing to visit the dealer, it is likely search is dramatically reduced or terminated. This could play a significant role in the research findings by Discover Boating that only 2% of first-time boat buyers that reach the awareness and interest stage of the purchase journey proceed to the purchase stage. (Discover Boating, 2017)

Economics of Information theory

Economics of Information theory suggests that expected benefit is a strong determinant of the amount of search undertaken by the consumer. The effect of price dispersion on the extent of search has been the subject of several studies. Greater dispersion of prices across different sellers encourages greater search because the benefits of search (potential savings) are greater when there is

a wide dispersion of prices than when there is a narrow dispersion of prices (Biswas, 2004; Urbany, 1986; Zimmerman, et al., 1984; Stigler, 1961). However, there have been no empirical studies of the extent of search if no objective price information is available for a product. When objective price information is not easily accessible in the search process, there is no understanding of the dispersion of prices and therefore no benefit to continued price search. This suggests that the absence of objective price information disrupts the path to purchase. The path to purchase for a new powerboat buyer can be twelve months or longer (Discover Boating, 2017). The cost of visiting multiple boat dealers to search for price is very high and unlikely to be undertaken unless you are ready to buy. Search theory suggests that consumers path to being ready to buy will be much longer without availability of objective price information.

“From the manufacturer’s point of view, uncertainty concerning his price is clearly disadvantageous. The cost of search is a cost of purchase, and consumption will therefore be smaller... (Stigler, 1961, p. 223).” The Economics of Information theory then suggests that hiding price which increases the cost of search is disadvantageous to the manufacturers and dealers because consumption will be smaller.

Knowledge and choice uncertainty

Price uncertainty is part of uncertainty about the product and product category. Consistent with Stigler’s Economics of Information theory, research has shown that knowledge uncertainty reduces the consumer’s search for more information and choice uncertainty increases consumer search effort (Urbany, et

al., 1989). Consumers who lack knowledge about the product category (such as first-time buyers) face a more difficult search task than consumers more certain about their knowledge (repeat buyers). Knowledge uncertainty may increase search costs to the point that search is reduced or diminished (Stigler, 1961; Urbany, et al., 1989). To the extent manufacturers and dealers of new boats do not provide objective price information, it increases knowledge uncertainty and may be a factor in derailing first time powerboat buyers' search (and even repeat buyers' search), resulting in fewer sales of new boats to both first time and repeat powerboat buyers. Hence, only 2% who enter the purchase journey end up purchasing their first powerboat.

Choice uncertainty increases search effort. According to Urbany, et al. (1989), increasing knowledge (by providing objective price information) may increase choice uncertainty (by bringing more alternative products into the consideration set) leading to greater search, which can also be characterized as greater engagement in the search process. Greater choice uncertainty leading to greater search could be better for the product category as a rising sea lifts all boats (and boat manufacturers and dealers). Again, visiting a boat dealer can be intimidating, and particularly so for first time boat buyers (Discover Boating 2017). If this is the only way they can get price information, extant research suggests that missing prices could lead to reduced or abandoned search.

Other authors have considered the information inference processes used by consumers when only partial information is available in a choice environment (Ross and Creyer, 1992). Their results suggest that when there is missing

information, consumers first look for similar information on other brands and then to same brand similar information to infer the value of the missing information. Where information on the attribute in question (for purposes of this study, objective price) is not available from other brands or other models of the same brand, it is not likely the consumer will be able to infer the value of the missing information.

High price, high involvement products, by definition, are discretionary purchases. They are not necessities for the most part. Owen (2003) states that in the absence of purchase necessity (e.g., boats), many customers feel that in the category of high price, high involvement products, the purchase can wait for another time when the price is clearer. This suggests that it is likely customers in the evaluation and information gathering stage of the purchase journey who are unable to find objective pricing information easily accessible on manufacturer, dealer and/or third-party websites, and are unable to infer objective price information from other brands or models within brand, move on and do not continue their search for information that would eventually result in a lead and/or purchase.

As a high price, high involvement product, the perception of boating is that it is expensive. The same would be true for other examples of high price, high involvement products mentioned above. Hiding prices likely reinforces that perception. “If consumers assume the price may be too expensive and not affordable, learning the exact price may not be worth the trouble (Owens 2003, p. 140).” This suggests that by not making it easy for potential boat buyers to find

information on objective price, the industry derails the purchase journey either temporarily or permanently.

Pricing theory

Krishna's statement that "pricing is one of the most crucial determinants of sales," is likely why the literature on pricing is so robust (Krishna, Briesch, Lehmann and Yuan, 2002, p. 101). Extant research addresses issues from the role of price, consumer's response to prices, price presentation, the role of price perceptions on behavioral intentions, comparative pricing, the impact of objective price, reference prices, and perceived price on purchase intent, the impact of price on transaction value and acquisition value, and much more (Krishna, et al., 2002; Varki and Colgate, 2001; Compeau and Grewal, 1998; Chen, Monroe, Yung-Chien, 1998; Grewal, Monroe, and Krishnan, 1998; Lichtenstein, Ridgway and Netemeyer, 1993; Kahneman and Tversky, 1979). Nearly all of this research and pricing literature assumes that objective price information is readily available as the consumer is making a purchase decision or during the evaluation phase of the purchase journey. This study examines the impact on consumer decisions and the purchase journey when objective price is not available.

What is the role of pricing? In a market for a high price, high involvement product, if objective price is not available, what cues or messaging about the product is the customer missing? The role price plays in consumer decisions about high cost, high involvement products is multi-dimensional (Chandrashekar, 2012; Yin and Paswan, 2007; Darke and Chung, 2005; Chandrashekar, 2004; Kopalle and Lindsey-Mullikin, 2003; Varki, et al., 2001;

Compeau, et al., 1998; Grewal, et al., 1998; Urbany, Bearden and Weilbacher, 1988; Chang, et al., 1994; Dodd, Monroe and Grewal, 1991; Monroe, 1990; Zeithamel, 1988; Erickson and Johansson, 1985).

The discussion below looks at the critical dimensions of pricing related to high cost, high involvement products including the traditional economic perspective of price, price as an indicator of quality, the role of price in purchase intent, how price affects perceived value, transaction value and acquisition value, and the role of objective price in formation of internal and external reference price.

The Dual Role of Price

In the traditional economic perspective, price is a constraint. Consumers seek to maximize utility by allocating a limited budget across a range of products and services (Erickson et al., 1985). In any purchase, the consumer gives something up to get something in return. They get a bundle of benefits or value and give or sacrifice the price in return for the benefits. The value of the benefits received are expected to exceed the price paid.

Several studies have also examined price as an indicator of the quality of the product under consideration (Varki, et al, 2001; Grewal, et al, 1998; Chang, et al., 1994). The expectation is bi-directional. Consumers expect to pay more for higher quality and when they pay more, they expect to receive higher quality (Monroe, 1990). The extent to which price is used as an indication of quality is somewhat dependent on the availability of information on quality related

attributes. And, the more information available on quality related attributes, the less important price is as an indicator of quality (Erickson, et al., 1985).

Price also plays a significant role in explaining consumer purchase intent. Erickson, et al. (1985) concluded that price plays a dual role and has both a positive and negative effect on purchase intent. The negative effect is related to price as a constraint, while the positive effect is through the positive effect of price on quality perception and attitude.

“In the case of price, we found that price has, basically, two roles. The first is as a positive influence on quality perceptions (which, in turn, reinforce beliefs about price), and through this as a positive influence on attitude and intention. The other major role of price is as a negative direct influence on intention (Erickson, et al., 1985, p.198).” The negative influence on intention is a purely a classic economic view of price.

The Behavioral Role of Price

A behavioral perspective of price concludes that price also affects the perceived value of the purchase, through its impact on acquisition value and transaction value, and perceived value positively influences purchase intention (Grewal, et al., 1998; Compeau, et al., 1998; Chandrashekar, 2004). From a consumer behavior perspective, objective price has an indirect positive effect on purchase intent through perceived price, acquisition value and transaction value.

Transaction value represents the extent to which consumers feel they got a good deal on the purchase. It is operationalized as consumer perceptions of how

attractive the deal is relative to some internal reference price (IRP). The determinants of transaction value include IRP and contextual factors like the presence of an advertised comparative price, known as an advertised reference price or external reference price (ERP) (Chandrashekar, 2004). Objective price compared to a reference price (IRP or ERP) determines the perceived value of the deal or transaction value to the consumer. If there is no objective price present during purchase evaluation a necessary component to determining perceived value is missing.

Researchers have defined acquisition value as the perceived net gains associated with the product purchased (Dodds, Monroe and Grewal, 1991; Zeithaml, 1988). Chandrashekar (2004) defines acquisition value as the consumer's assessment of the perceived value of the benefits received from the purchase relative to the perceived price paid for those benefits and is determined by the perceived quality of the product and the transaction value. Since objective price influences transaction value and transaction value is one of the determinants of acquisition value, objective price also influences, indirectly, acquisition value.

There is a large body of work on reference pricing (Chandrashekar, 2012; Yin, et al., 2007; Darke, et al., 2005; Chandrashekar, 2004; Kopalle, et al., 2003; Krishna, et al., 2002; Varki, et. al., 2001; Chen, et al., 1998; Campeau, et. al., 1998; Grewal, et al., 1998; Chang, et al., 1994; Suter and Burton, 1996; Urbany, et al., 1998; Lichtenstein, Burton and Karson, 1991.) Reference price is generally divided into two types of reference price. Reference price is either an internal standard or external standard against which the objective price offered by

the seller is measured. That is, reference price can be anchored internally or externally (Yin and Paswan, 2007). “Internal reference price (IRP) is defined as a price (or price scale) in buyer’s memories that serves as the basis for judging or comparing actual prices (Grewal, et al., 1998, p. 47).” IRP is influenced by previous and current encounters with price and can change with exposure to new information.

External reference price is usually discussed in the context of comparison pricing which has its own rich literature. Actual product prices are compared with higher comparison prices supplied by the retailer to provide an external reference against which the offered price can be evaluated (Kopalle and Lindsey-Mullikin, 2003). Researchers have examined the presentation or framing of ERP (Darke and Chung, 2005; Chandrashekar, 2004; Chen, et al., 1998), the impact of ERPs that are believable or unbelievable (Compeau, et al., 1998; Suter and Burton, 1996), the effect of semantic cues on reference price ads (Lichtenstein, Burton and Karson, 1991), the impact of ERP on IRP (Chandrashekar, 2012; Urbany, Bearden and Weilbaker, 1988), on perceived savings (Krishna, et al., 2002), on perceived price (Chang, et al., 1994), and more.

Reference Price Without Objective Price

When objective price is not available in the search process, as in the case of many new recreational powerboats, RVs, in-ground swimming pools, windows, healthcare and legal services, many of these pricing concepts don’t apply or apply very differently. If objective price is not displayed on manufacturer, dealer or third-party websites, then no comparative ERP is

displayed either. So how does the consumer evaluate the value of the deal or even know what the deal is? If the consumer is a repeat boat buyer, they may have an IRP. But if they are a first-time boat buyer their knowledge of pricing for new boats may be very undeveloped. Whether a consumer has formed an IRP based on a little knowledge or a lot of knowledge, they still have no objective price to compare it to when objective price is missing. This will make it difficult, if not impossible, for the consumer to create an assessment of transaction value or acquisition value. Unable to determine what the deal is or the value of the deal, and given continued search efforts are not likely to yield the objective price short of visiting the dealer, it is suggested that the consumer abandons their search and the path to purchase; if not completely, at least until later.

If the dealer or manufacturer provides an objective price for consideration by the consumer, there is evidence that this offering price will serve as an anchor and be used by the consumer to adjust their IRP (Chandrashekar, 2004). Assimilation-Contrast Theory proposed by Sherif (1963) suggests that in the absence of other price information, an objective price advertised by the retailer will shift their IRP through an assimilation effect (Sen, 2009). In this case, the objective price and ERP are the same, at least until more price information can be obtained by visiting a dealer.

Varki, et al. (2001) conclude that “price perceptions have an important influence on customer value perceptions. In addition, by managing the comparative price perceptions of their customers, managers could simultaneously influence overall customer satisfaction and behavioral intentions (p. 238).” The

objective price becomes a point of reference by which to judge the value of the offering that doesn't exist when price is absent. This suggests that the presence of an objective price has the benefit of influencing customer value perceptions, transaction value and purchase intentions whereas the absence of an objective price does not help, and may prevent, the consumer in developing value perceptions that could positively impact purchase intent.

Formation of reference price (including IRP) depends, to a great extent, on the availability of information about products and their prices (Grewal, et al., 1998). When objective price is missing, a key piece of information needed to form reference price is missing. Frankenberger and Liu (1994) suggest that, "As customers acquire new information about market prices, IRPs are adjusted to account for that information (p. 238)." Unknowledgeable customers may accept the objective price as an internal reference point that influences purchase intent (Frankenberger, et al., 1994). And, Chandrashekar (2012) states, "It is generally established in the literature that consumers may use some external reference prices to adjust internal reference prices, which in turn affects evaluation (p. 54)." Consumers usually compare the offering price (objective price) to their IRP in evaluating the favorability of a purchase, so any effect on the IRP will influence purchase evaluations (Lichtenstein, et al., 1991). Yin, et al., (2007) recommend based on their study of antecedents of consumer reference price orientation, that managers should provide more price related information to help customers form external reference prices. All of this supports the notion that manufacturers and

dealers of new powerboats would be better served by providing an objective price than by hiding price.

In their meta-analysis on comparative pricing, Campeau, et al., (1998) conclude that comparison pricing works. Grewal, et al., (1998) report their results “suggest that acquisition value has considerable influence on buyers’ willingness to buy (p. 56).” This suggests that providing an objective price in a market where none exist, allows for a comparison of objective price and IRP that should influence continued search, lead generation and, purchase intent. Varki, et al., (2001) suggest studying their behavioral intention model in an experimental setting. In this long stream of research on pricing, no one has looked at the impact of missing prices on the evaluation and search phase of the purchase journey and related lead generation and purchase intent.

Purchase intent

Purchase intent is a measure of the consumer’s willingness to purchase. It has been defined as the likelihood of purchasing the product. It is often considered an important indicator of actual purchase (Chang, et al., 1994). Prior research has predominantly used purchase intent as a proxy for actual purchase (Morwitz, Steckel and Gupta, 2007; Weathers, Swain, and Makienko, 2015; Gamliel and Herstein, 2012; Teng, 2009; Campeau, et al., 1998; Chandrashekar, 2004; Chen, et al, 1998). Purchase intentions are used extensively by academics as proxy measures for purchase behavior. They are also used by marketing managers to predict sales for new and existing products (Morwitz, et al., 2007).

In the experiment used in this study, there are three dependent variables. One is continued search for product attributes. The other two are lead generation and purchase intent. Lead generation might be considered a proxy for purchase intent as purchase intent is considered a proxy for purchase. Lead generation is used in this study because nearly all purchasers of new powerboats start as leads. Not all leads end up as purchasers so lead generation is not a good proxy for purchase. One would expect, however, that the more qualified leads a dealer gets, the more sales they will close and the more opportunity they have to close sales. Based on interviews with boat manufacturers and dealers in the recreational boating industry, lead generation is an important metric for all marketing expenditures made by new powerboat manufacturers and dealers.

While actual purchases would be the best measure of the impact of missing prices on the purchase journey, the time frame for the purchase decision can extend to six months, twelve months, or twenty-four months, making it difficult to get actual purchase information in a timely manner. “Many surveys contain purchase intentions questions on such items as new food products, frequently purchased package goods, appliances, automobiles, and capital equipment. The time frame may range from one week to 24 months (Morrison, 1979, p. 65).” Morrison (1979) refers to six months, twelve months and twenty-four months in assessing purchase intent for household appliances and automobiles, both high cost, high involvement products, and notes that very few published studies are able to obtain purchase intent and actual purchase behavior on the same set of individuals. The purchase journey for new powerboats, also a

high cost, high involvement, durable good, is typically nine to twelve months or more.

Morwitz, et al., (2007) studied the factors associated with a strong correlation between purchase intentions and actual purchase. The six key findings of Morwitz, et al., (2007, p. 347) “indicate that intentions are more correlated with purchases:

1. For existing products than new ones;
2. For durable goods than for non-durable goods;
3. For short than long term horizons;
4. When respondents are asked to provide intentions for specific brands or models than when they are asked to provide intentions to buy at the product category level;
5. When purchases are measured in terms of trial rates than when they are measured in terms of total market sales; and
6. When purchase intentions are measured in a comparative mode than when they are collected monadically.”

Morwitz, et al., (2007) conclude that their results “indicate that purchase intentions are predictive of future behavior” and more predictive for products that conform to these six factors (p. 361). “Intentions will be more predictive of behavior when the consequences of purchasing are great, and consumers therefore deliberate considerably about the purchase decision (e.g., purchasing a high involvement durable good) (Morwitz, et al., 2007, p. 361).”

This literature suggests that using purchase intent as a proxy for purchase behavior is a reasonable approach. In this study, which considers purchase intent for new recreational powerboats, all six of the factors identified by Morwitz, et al., (2007) that lead to high intention-behavior correlations are present and map to this product:

1. Respondents are asked to rate their purchase intent for an existing product, a recreational powerboat that is available for purchase in real time. While there are refinements and enhancement to new models every year, the recreational powerboat is not a new product concept.
2. Recreational powerboats are a high cost, high involvement, durable good. Purchase decisions for this type of product are seen as very important to the purchaser.
3. While, Moritz, et al., (2007) suggest the correlation between purchase intent and purchase is high for short term versus long term purchase horizons, they acknowledge that for a high cost, high involvement, durable good, the strength of the relationship may increase over time as consumers may underestimate how long it will take to make the purchase decision and needing more time to complete the purchase is common.
4. Respondents will also be asked their purchase intent for specific models they have viewed on a third-party website after becoming a lead for that powerboat model for the listing dealer. So, they are being asked to indicate purchase intentions at the brand/model level and not the product category level.

5. Purchase intention will be measured as a proportion of people that intend to buy and not as a measure of market sales.
6. Survey participants will be asked if they searched on other brands and models of boats. The assumption is that respondents will have done extensive search of comparative products so that measurement of purchase intentions is being done in a comparative mode.

This provides strong support for using purchase intent as a proxy for purchase in this study. Recreational powerboats map directly to each of the six factors identified by Morwitz, et al., (2007) that lead to high intention-behavior correlations. As a high cost, high involvement product, we can expect purchase intentions for recreational powerboats to be strongly predictive because the consequences of purchasing a powerboat are great, and consumers do deliberate considerably about the purchase decision, often taking six to twelve months are more to make the purchase decision.

Model Development and Hypotheses

This chapter draws from the relevant literature to develop a model and testable hypotheses based on the theoretical relationships between price visibility and extent of search, knowledge uncertainty, economics of information theory, pricing theory and purchase intent. A graphical depiction of the proposed hypothesized relationships is presented in Figure 2.

This study will use a natural experiment to examine if an objective price versus the absence of objective price has a causal impact on purchase intention, as well as on continued product attribute search and lead generation. It looks at two purchase journeys, with and without objective price, and how they map against each other.

As suggested by Stigler (1961), search cost is part of the cost of a product; increasing search cost increases the cost of the product; and, search will continue to the point where the costs of search outweigh the benefits of search. Where an objective offering price is missing, it increases the purchaser's knowledge uncertainty. The literature supports that knowledge uncertainty may increase search costs to the point that search is reduced or diminished (Urbany, et al. 1989). The extent of product search is influenced by the availability of product information and the time available to search, among other things. (Bloch, 1986). Where it is common practice in an industry to hide price (such as the recreational powerboat, RV, in-ground pool, and healthcare industries, among others) additional search, short of a visit to a dealership, is nearly futile. The

unavailability of price information during the evaluation phase of the purchase journey is predicted to decrease the extent of continued product search.

Therefore, making price information available (on manufacturer, dealer and third-party websites), especially for a high price, high involvement product, is predicted to encourage additional search for information about the product rather than reduce or terminate additional search. This leads to the first two Hypotheses:

Hypothesis 1: Consumer search is influenced negatively by the absence of an objective offering price for a high price, high involvement product as demonstrated by less search for other product attributes.

Hypothesis 2: Consumer search is influenced positively by the presence of an objective offering price for a high price, high involvement product as demonstrated by greater search for other product attributes.

Knowledge uncertainty is reduced in the presence of objective offering price information. Greater knowledge is predicted to impact search for product attributes and price in a positive manner (Urbany, et al., 1989; Stigler, 1961). Greater search indicates greater engagement in the purchase journey. Higher levels of engagement are common for high price, high involvement products. “Product involvement appears to be a basic determinant of ongoing search. (Bloch, et al., 1986, p. 123).” The availability of an objective offering price also has multiple effects in aiding the consumer to recognize and evaluate the deal. Prior work has provided evidence that the availability of an objective offering

price (versus no objective offering price being available) will likely influence the consumer's internal reference price which is adjusted based on the offering price (Sen, 2009; Chandrashekar, 2004). This allows for the formation of a perceived price by the consumer. This perceived price combines with perceived quality to create a perceived value of the product. The presence of an objective offering price allows the consumer to create an assessment of transaction value and acquisition value as well (Varki, et al., 2001). This is not possible in the absence of an objective offering price. The highest level of search for a high cost, high involvement product (such as a recreational powerboat, RV or in-ground swimming pool) involves contacting a dealer for more information. At this point, the consumer has become a lead for the dealer. Nearly all purchasers of these type of products become a lead during the path to purchase.

Based on information from interviews with boat dealers, even though they do not display objective price on websites or in marketing materials they do receive leads on these new boat brands and models. These leads are received even though an objective offering price is not available in advance of the consumer becoming a lead. A consumer contacting a dealer to become a lead has some level of interest or intent to purchase. Providing objective offering price reduces knowledge uncertainty and allows the consumer to make an assessment of perceived value, transaction value and acquisition value (Chandrashekar, 2004; Grewal, et al., 1998; Compeau, et al., 1998). It is predicted that greater knowledge certainty and improved value assessments that result from availability of objective selling price information, will not only result in more leads being

generated but stronger levels of purchase intent for those consumers who have objective offering price information available. More leads and stronger purchase intent should translate into more sales. The purchase journey for some high cost, high involvement products can be as much as nine to twelve months or more. Morwitz, et al., (2007) identified six factors that lead to a high correlation between intention and purchase behavior (existing products, durable goods, short term purchase horizon, asked to provide intentions for specific brands or models, when measured in terms of trial rates, and when measured in comparative mode). Based on these factors, it is appropriate in this study to use purchase intent as a proxy for purchase, as many academic researchers have done.

Based on the evidence related to search (Bloch, et al., 1986; Owens, 2003; Stigler, 1961), knowledge uncertainty (Ross and Creyer, '1992; Urbany, et al., 1989) and pricing (Chandrashekar, 2004; Compeau, et al., 1998; Erickson, et al., 1985; Grewal, et al., 1998; Krishna, et al., 2002) it is predicted that the availability of an objective offering price will increase leads to dealers of these products and increase the purchase intent of the consumers who become leads. This leads to four additional Hypotheses:

Hypothesis 3: Less leads will be generated in the absence of an objective offering price for a high price, high involvement product.

Hypothesis 4: More leads will be generated in the presence of an objective offering price for a high price, high involvement product.

Hypothesis 5: Purchase intent will be weaker in the absence of an objective offering price for a high price, high involvement product.

Hypothesis 6: Purchase intent will be stronger in the presence of an objective offering price for a high price, high involvement product.

All of the hypothesized relationships, H₁ through H₆, are shown in Figure

2.

Research Methodology

This chapter is a discussion of the methodology used in this study to test the proposed Hypotheses. In particular, this chapter presents the measures proposed for the study and identification of a validated scale for assessing purchase intent. The study design is discussed in detail including a description of the natural experiment, recruitment of manufacturers and dealers to participate in the study by allowing price to be displayed, purchase intent survey recruitment and a secondary method for survey data collection.

The first four Hypotheses will be examined in a natural experiment working with a national third-party product website including display listings and detailed product description pages for new recreational boats (a high priced, high involvement product) and naturally occurring lead generation on the website. The fifth and six Hypotheses will be tested using a survey of leads naturally generated from the website to assess purchase intent.

The national third-party product website is primarily supported by recreational powerboat dealers who pay for the new product listings on the website. The third-party product website attracts 4.8 million visitors, on average, per month, experiences 17.5 million page views, on average, per month, and experiences 11 million detailed product page views, on average, per month. Approximately one percent of visitors to this third-party website are converted to email or phone leads for the dealers. This experiment was conducted during a five-week period in January and February, 2019 when total page views of new boat listings average over thirty million per month. These are also primary

months when boat shows are held around the country and search activity is high. The visitors to this website include actual consumers in the product evaluation and search stage of their purchase journey.

Measures

Measures of the independent variable, objective offering price, include present or absent. There are three dependent variables: continued product attribute search measured as a click from the listing on the search results page to the detailed product page; lead generation measured as a click from the detailed product page to send an email or phone a dealer, becoming a lead; and purchase intention measured with a three item, seven-point Likert scale, anchored at “very low” and very high,” adopted from Grewal, et al., (1998). This scale had a Chronbach alpha of .92 in the Grewal, et al., (1998) study indicating a high level of scale reliability. The scale items are:

- 1) If I were going to buy a boat, the probability of buying this model is,
- 2) The probability that I would consider buying this boat is, and
- 3) The likelihood that I would purchase a boat is.

Study design

A national third-party website agreed to cooperate on this research. The national third-party website is the largest online boating marketplace in the United States for new and pre-owned boats. Through search engine optimization, online advertising and email nurture marketing, the national third-party website drives

prospective boat buyers to the website to do their research for a boat purchase. They claim to reach six million prospective boat buyers each month. Dealers contract with the third-party website to host the dealer's product listings on the website and dealers may either list an objective selling price or display "Request a Price" in lieu of listing a price.

In the data field designed for price to be displayed, for each product listing on the search results page and on the detailed product page, dealers also have the option to show "Request a Price" instead of displaying a price. "Request a Price" literally allows the visitor to contact a dealer to discuss the price of the product offered and being viewed/searched. "Request a Price" on the search results page hyperlinks to the detailed product page where there is a dialogue box the visitor completes with first and last name, email and phone number (optional) and then clicks on "Contact the Seller" to become a lead. Once on the detailed product page, if the visitor hovers over "Request a Price" it brings the same lead dialogue box to the center of the screen. A sample search results page is shown in Figure 4. A sample detailed product page is shown in Figure 5. And, a sample lead dialogue box in the center of the screen is shown in Figure 6.

Recruitment of Manufacturers and Dealers

In addition to the national third-party website, twenty-five manufacturers were contacted about participating in the research. An email briefly explaining the research project was sent to the CEO of each of the twenty-five manufacturers that included a request for a follow-up phone call to discuss the project. All twenty-five manufacturer CEOs accepted the follow-up phone call where the

project was discussed, questions were answered, views on displaying objective price were discussed and interest in participation was determined. Nineteen of the twenty-five powerboat brands, representing 76% of manufacturers recruited, agreed to participate in this experiment. These nineteen manufacturers produce product in eight powerboat segments (aluminum fishing boats, pontoon boats, jetboats, bowriders, saltwater fishing boats, small cruisers, ski and wakeboard boats, large yachts). In agreeing to participate, the manufacturers agreed to recruit their dealers and identify which of their dealers would participate in the experiment, based on the objective offering price each manufacturer would allow to be used for each powerboat model in the test. Each participating manufacturer provided a list of their dealers agreeing to participate including information on the dealer contact who would work with the author and the third-party website. The author communicated directly with each dealer on the process for participation. The test involved 2,396 new boat listings from one hundred and seventy new powerboat dealers. Descriptive statistics for the industry participants in the study are shown in Table 1.

For this research, only manufacturers and dealers who do not display price were recruited for participation. The participating dealer product listings on the national third-party website were all originally “Request a Price” listings. For this experiment, the new product listings for participating dealers were modified to provide duplicate identical listings of product information with the only difference in the product listings being the display of an objective offering price on one version of the product listing for each product and no objective offering price (or

“Request a Price”) on an otherwise identical version of the product listing for each product (control group). Dealers’ ability to advertise an objective offering price is limited by contract with their manufacturers providing them the product. So, the objective offering price displayed for each boat model in the test was a price approved by the manufacturer and agreed to by the dealer.

A flowchart describing the study design is shown in Figure 3.

The Experiment

About thirty days in advance of the start of the test, the third-party national website prepared a spreadsheet of each participating dealer’s listings displayed on the website. Each dealer was asked to complete the spreadsheet by indicating their offering price, approved by their product manufacturer, on the spreadsheet and return it to the national third-party website no later than two weeks before the start of the test. The third-party website tracked responses and shared them with the author, who was responsible to follow up with each dealer to make sure their completed spreadsheets were returned on time.

Optimizely is an experimentation platform for testing digital experiences (for more information visit www.optimizely.com). Among its many capabilities is A/B experimentation on web pages. All of the listings in the test with the objective offering price provided by the dealer, in the spreadsheets they were provided, were uploaded to Optimizely by the national third-party website for this experiment. During the test period, all visitors to the national third-party website randomly and alternately received a cookie to designate them to see price or not

see price when they encountered listings in the test during their product search on the website. The Optimizely software controlled the display of the product listings (included in the test) with and without the objective offering price based on the cookie placed on the visitor.

The third-party national website assigned a unique identifier to each visitor to the website that allowed tracking of their unique clickstream. Each product listing in the test that appeared on a visitor's search results page, with and without objective offering price, was tracked in Google Analytics, which was used in conjunction with Optimizely to provide clickstream data on the listing viewed on the search results page. The clickstream data indicated whether the visitor saw a listing in its original state (without price) or in its treatment state (with price). Product listings in the test appeared on visitor search results pages 54,681 times. In the normal course of a visit to the national third-party website, visitors typically do multiple searches and the same product listing could appear on the visitor's search results page more than once. Based on the cookie placed on the visitor, they were always either in the treatment group (objective price visible) or the control group (objective price not visible).

Visitors to a product listing on the search results page have the opportunity to search further for additional product attributes by clicking forward to a detailed product page for the listing. This click was the measure of continued search for product attributes. Each click to the detailed product page from a search results page was also tracked in Google Analytics, which was used with Optimizely to provide clickstream data on the detailed listings viewed. The clickstream data

indicated whether the visitor saw a listing in its original state (without price) or in its treatment state (with price). Visitors to the website clicked through from a listing in the test on the search results page to the detail product listing 22,496 times. This represents a 41% clickthrough rate from search results listing to detail product listing. There were 22,205 unique individuals who continued searching to the detail product listing from the search results page.

From the detail product page, visitors have the ability to click to send an email to a dealer or phone a dealer for more information, at which point they become a lead for that dealer. This click is the measure of lead generation. Visitors clicking on the detailed product listing for products in the test, clicked to email or phone a dealer from the detail listing page 184 times. This represents 137 email leads and 47 phone leads with a clickthrough rate to become a lead of 0.8%, which is very consistent with the nearly 1% lead generation rate for all listings on the third-party website. Some visitors clicked to become a lead for the same product with the same dealer. After deleting these duplicate leads, there were 165 unique leads remaining, including 118 email leads and 47 phone leads. Because of the unique Visitor ID assigned to each visitor and the unique Product ID assigned to each product listing, there is traceability by individual from a product listing on the search results page to the detail product page, to clicking to email or phone a dealer which represents a lead. The unique identifiers of Visitor ID and Product ID allowed for matching the clickstream data from the search results page, the detail listing page and the lead generated to be matched for analysis.

Email Survey Recruitment and Incentive

Only the 118 email leads could be followed up with a survey. Each email lead was sent a recruitment email by the national third-party website, using their Salesforce.com capability to include a survey link in the recruitment email. Salesforce.com also allowed the unique Visitor ID assigned to each visitor by the third-party national website and the unique Product ID for the listing viewed to be embedded in the survey link. The survey was developed in Qualtrics and was enabled to receive these unique embedded IDs in each survey response. The purchase intent survey is included as Appendix A and the recruitment email is included as Appendix C.

A \$10.00 Starbucks gift card was offered in the recruitment email as an incentive to complete the survey. The Starbucks gift cards were purchased and fulfilled through Rybbon.net, an online service that provides incentives for completion of surveys (and other research and marketing activities) automatically and instantly by email. At the conclusion of the survey, respondents sent their email address to Rybbon.net and received an electronic gift card directly from Rybbon.net. The individual responses to the survey were matched to and combined with measures from the individual clickstream data for analysis using the unique Visitor ID and Product ID embedded in the survey results.

Secondary Method of Survey Data Collection

To enhance and strengthen the survey response on purchase intent, a secondary method of data collection was also employed. The national third-party website normally experiences lead generation equal to about 1% of detailed page views. Expecting an 8-10% response rate to the recruitment email, there was concern that insufficient survey response would be obtained through the primary data collection pathway. To enrich the perspective on purchase intent provided by the surveys, the author worked with the third-party website to augment the survey sample. The third-party website randomly selected 9,588 additional unique visitors, who became email leads outside the experiment, to receive the recruitment email with the survey link. A total of 9,706 recruitment emails were sent (9,588 randomly selected in the secondary method and 118 from the visitors in the test). This total included 4,601 leads on new boat listings (model year 2019 or 2020) who were sent a recruitment email. A unique Visitor ID assigned to these randomly selected leads was embedded in the survey link included in the recruitment email and embedded in the survey responses from these email leads by Qualtrics, to allow matching of survey responses to a list of VisitorIDs, provided by the third-party website, that included the type of listing (with or without price) the visitor had viewed.

A total of 252 usable surveys were received from respondents viewing new boat listings (model year 2019 and 2020), including 187 respondents in the control group (did not see price) and 84 in the treatment group (did see price).

This represents a survey response rate of 5.5% to the recruitment email.

Descriptive statistics for the sample are shown in Table 2.

The 252 respondents were primarily in the age range of 35-55 (49.6%), were predominantly male (87%) and living with a spouse or partner (81.7%), were highly educated with sixty-eight percent reporting having a college education with an Associates Degree or above, had three or more people living in their household (50%), and were slightly skewed to annual household incomes of \$100,000 or greater (55.1%). Descriptive statistics for the survey respondents are shown in Table 3.

Results

This chapter provides the results of the Hypothesis testing. Hypotheses 1 through 4 were tested using a one sample t-test and Hypotheses 5 and 6 were tested using an independent samples t-test.

The context of this study, is new boat listings on a major national third-party website where objective price is normally not provided by the new boat dealer. This industry sells high cost, high involvement products (new boats). In addition to not providing cost information on this national third-party website, it is also common practice for dealers and manufacturers not to include objective selling price for new boat listings on their own websites either.

For this reason, only surveys from leads on model year 2019 and 2020 boats (252 surveys) were used in the analysis to ensure that only surveys returned by respondents who had viewed new boat listings were analyzed. This aligns with industry practice to distinguish between new and used boat listings on the national third-party website. Dealers offering pre-owned boats and new boats that are not current model year may display an objective offering price of their choosing on third-party websites as well as their own website. Manufacturers do not control pricing for pre-owned boats or new boats that are not current model year.

Test of Hypotheses 1 and 2

Hypotheses 1 and 2 state that consumer search is negatively influenced by the absence of an objective offering price and positively influenced by the

presence of an objective offering price for a high price, high involvement product as demonstrated by continued search for other product attributes. Operationally, this suggests that consumers searching for product information for a high price, high involvement product will be more likely to click through from the search results page product listing to the detailed product listing if objective price information is provided in the search results page listing.

To test Hypothesis 1 and Hypothesis 2, a one-sample t-test was conducted to examine whether presence of price information induced respondents to continue searching for additional product attributes by clicking from the listing on the search results page to a detail product listing for the boat viewed on the search results page. 22,205 individuals continued searching for additional product attributes. Within that sample, respondents were more likely to continue searching if they were provided with objective price information (mean difference = .58, 95% CI of mean difference = .57-.58, $t = 174.17$, $df = 22,204$, $p < .01$).

These results are robust to differentiating between the extent of continued search when objective offering price is present and when objective offering price is absent. They support Hypotheses 1 and 2. The consumer on the purchase journey who is provided objective offering price continues their search for product attributes, by clicking through to the detail product listing, at a significantly higher rate than the consumer who is not provided an objective offering price on their purchase journey.

Test of Hypotheses 3 and 4

Hypothesis 3 and 4 state that fewer leads will be generated in the absence of an objective offering price and that more leads will be generated in the presence of an objective offering price for a high price, high involvement product. In this test, leads were measured as a click on the “Contact the Seller” button from the detail product page on the national third-party website and entry of personal email address or phone number. Operationally, this suggests that consumers searching for product information for a high price, high involvement product will be more likely to click to become a lead from the detailed product listing if objective price information is provided in the product listing.

To test Hypothesis 3 and Hypothesis 4, one-sample t-test was conducted to examine whether presence of price information increased the likelihood of a respondent becoming a lead. 165 unique individuals became leads by clicking on the “Contact the Seller” button on the detail product listing and entered their email address or phone number. Within that sample, respondents were more likely to become a lead if they were provided with objective price information (mean difference = .35, 95% CI of mean difference = .28-.43, $t = 9.43$, $df = 164$, $p < .01$).

These results are robust to differentiating between lead generation when objective offering price is present and when objective offering price is absent. The results support Hypotheses 3 and 4. The consumer on the purchase journey

who is provided objective offering price becomes a lead, by clicking the “Contact the Seller” button and providing their email address or phone number, at a significantly higher rate than the consumer who is not provided an objective offering price on their purchase journey.

Test of Hypotheses 5 and 6

Hypotheses 5 and 6 state that purchase intent will be weaker in the absence of an objective offering price and that purchase intent will be stronger in the presence of an objective offering price for a high price, high involvement product. In this test, leads were recruited to take a brief, twenty question survey to assess their purchase intent as a proxy for sales. The three items used to assess purchase intent were measured on a seven-point Likert scale (1 = very low to 7 = very high; alpha reliability of .71). The average time to complete the survey was about three minutes.

Hypotheses 5 and 6 were examined using an independent sample t-test. Purchase intent of the respondents was greater when participants were provided with objective offering price during their purchase journey (mean = 5.33) than when they were not (mean = 4.97). This mean difference was significant (Lavene’s test indicated equality of variances ($F = .57, p > .05$); mean difference = -.36, 95% CI of mean difference = -.65 - -.07, $t = 2.444, df = 249$).

These results support Hypotheses 5 and 6 that providing an objective offering price during the search portion of the purchase journey will lead to greater purchase intent (from a greater number of leads as supported by

Hypotheses 3 and 4) than hiding price and making it more difficult, if not impossible, to find an objective offering price.

With all six Hypotheses supported by the analysis, there is evidence that displaying an objective offering price with product listings on a national third-party website will increase the extent of search, increase lead generation for dealers and manufacturers, and positively influence purchase intent such that respondents who searched for price and found it have greater intention to purchase. A table of means, mean differences, confidence intervals and Chronbach alpha are shown in Table 4.

Discussion

This chapter provides a discussion of the results, as well as the theoretical and managerial implications of the findings from this research. Limitations of the research are discussed and future directions are proposed as part of the concluding comments on this study.

General Discussion

This study investigates the impact of hidden, or unpublished, prices on the evaluation stage of the purchase journey for high cost, high involvement products. Specifically, it looks at the impact of missing prices on continued search, lead generation and purchase intent in the context of new boat sales. New boats are a high cost, high involvement product. The results provide evidence that for high cost, high involvement products the absence of objective selling price in the evaluation phase of the purchase journey leads to less consumer search for product attributes, less lead generation and less purchase intent, while the presence of objective selling price leads to more search, more lead generation and higher purchase intent.

Nearly all of the research in the areas of consumer search, the impact of knowledge uncertainty on the extent of search, pricing theory, and purchase intent assumes that objective price information is readily available for search in the purchase journey. In this long stream of research, no one has empirically looked at the impact of missing prices on the evaluation and search phase of the purchase journey and related lead generation and purchase intent. Owen (2003) points out

in his exploratory work on missing prices that there are many situations encountered by consumers where price information is missing or hidden. This study is the first empirical test of the impact on consumer behavior when objective price is missing or hidden.

Price is a critical determinant of deal valuation, perceived value, transaction value, acquisition value, formation of internal reference price, the extent of search, purchase intent, and sales. Much of the rich learnings in these areas of study are based on objective price being readily available. When objective price is not available, how does the consumer evaluate the deal, arrive at perceived value, make an assessment of transaction value and acquisition value, or form an internal reference price? While there is no evidence presented here that some or all of these processes may be disrupted when objective selling price is missing, it suggests that such an assumption might be reasonable. If these processes are disrupted when objective selling price is missing, that likely leads to consumers abandoning their search and path to purchase; if not completely, at least until later. No business wants to do anything to delay a purchase, yet the common practice in some industries of hiding price likely has that impact based on the evidence from this study. Missing information, particularly objective price, that lengthens the purchase journey is not in the best interests of the seller.

Encouraging search to the point of preparedness to purchase is desirable if the goal is to sell more product. This study demonstrates that providing objective price during the evaluation stage of the purchase journey, rather than hiding it,

will encourage continued search for product attributes, likely advancing the consumer on their path to purchase and improving their preparedness to purchase.

One would expect that the more qualified leads a dealer receives and the higher the purchase intent of those leads, the more opportunity the dealer has to close sales and the more sales a dealer will close. The findings in this study that the presence of price leads to more search for product attributes suggests that sellers of high cost, high involvement products that hide price are reducing consumer search related to their product offering. Owen (2003) suggests that failing to provide an objective offering price can leave buyers feeling manipulated or forced to engage in a social interaction with a dealer they are not yet prepared for. The findings in this study empirically confirm that continued search is delayed, derailed or terminated, potentially ending the purchase journey, when objective offering price is absent.

Inasmuch as the results of this study show that hiding price reduces search for product attributes, it also shows that hiding price reduces lead generation and purchase intent. Purchases of high cost, high involvement products are deliberate purchases. The purchased time frame can be six, twelve or even twenty-four months. New boat dealers, and likely sellers of other high cost, high involvement products, depend on leads as the lifeblood of their business. The evidence from this field study indicates that hiding price does reduce lead generation, as consumers who did not see price were not as likely to become leads as consumers who did see price. Fewer leads means fewer sales opportunities and likely fewer

sales. Extrapolate the impact on a single dealer to an entire industry and the potential lost sales could be significant!

The research from Discover Boating suggests that only two percent of potential first-time boat buyers who begin their purchase journey complete the journey with the purchase of a boat (Discover Boating, 2017). An increase from 2% to 3% completing their journey with a purchase would lead to a 50% increase in first-time boat buyers and a 4% increase in annual sales of new boats. This is significant for an industry where new boats sales grow by 5-6% annually on average.

Finally, this study provides evidence that when objective price is present, the purchase intent of leads is significantly higher. Leads with higher purchase intent likely lead to higher close rates and therefore higher sales. Extant research has shown that purchase intent is a good proxy for sales. And, new boats map to all six factors identified by Morwitz, et al. (2007) that are associated with a strong correlation between purchase intentions and actual purchase.

This study looked at two distinct purchase journeys for buyers of new boats. In one purchase journey, consumers were provided an objective offering price. In the other purchase journey, consumers were not provided an objective offering price. The findings show that consumers who were provided an objective offering price moved further through the evaluation stage of the purchase journey. They conducted more search by clicking through to the detail listing page. They were more likely to become leads by contacting a dealer from the detail listing page. And, they were measured with higher purchase intent, a

common proxy for actual purchase. The behavior of consumers who saw price was significantly different from the behavior of consumers who did not see price. These findings suggest, that in the internet era of consumer expectations for transparency, missing prices could be limiting sales of new boats and other high cost, high involvement products where price is missing in the evaluation stage of the purchase journey.

Nunes, et al., (2103) state, “The new Rule #1 is, know your customer’s behavior on their path to purchase (p. 50).” The findings of this study provide valuable information to help sellers of high cost, high involvement products to better understand their customer’s behavior on their path to purchase! The results of this study demonstrate that the behaviors of consumers do differ when objective price is not available, increasing knowledge uncertainty. This evidence should be useful to managers contemplating a change in their policy of hiding objective selling price online and in product literature.

Theoretical contribution

This study makes four theoretical contributions to the literature. First, a review of the literature suggests this is the first empirical test of the impact of missing prices on continued search for product attributes, lead generation, and purchase intent for high cost, high involvement products. While there is a substantial body of work on pricing, search and purchase intent, until now there has been a dearth of scenarios studied where objective price is missing. This study is unique in providing understanding of the impact of missing prices on the purchase journey and fills in missing information in the extant literature.

Second, this study adds to the understanding of the impact of price on purchase intent by considering the impact on purchase intent when objective price is missing. Purchase intent has been studied in many contexts and extant research addresses the role of price perceptions on behavioral intentions, generally, and purchase intentions, specifically. Research has demonstrated that price plays a significant role in explaining consumer purchase intent (Erikson, et al., 1985). A behavioral perspective of price concludes that price affects perceived value (through its impact on acquisition value and transaction value) and perceived value positively influences purchase intent (Grewal, et al., 1998; Compeau et al., 1998; Chandrashekar, 2004). As in other areas of pricing research, research on the role of price in explaining consumer purchase intent has assumed objective price is present. But, what impact does the absence of price have on consumer purchase intent? What role can price play in influencing purchase intent when price is not available? This study measures the impact on purchase intent for a high cost, high involvement product when price is not available and concludes that the absence of objective price negatively influences purchase intent for a high cost, high involvement consumer product. This fills a gap in the stream of pricing and purchase intent research and literature.

Third, this study was conducted as a field experiment with random assignment to obtain unbiased measures of continued search, lead generation and purchase intent for a high cost, high involvement product in a natural, online context, overcoming the limitations of using observational data. There tend to be fewer field experiments with random assignment because, as List and Gneezy

(2014) point out, “running [field] experiments is a costly undertaking (p. 16).”

The experiment was done in a natural setting in which consumers who are searching for information on a new boat purchase visit a national third-party website in the normal course of their daily lives. Visitors to the national third-party website were randomly assigned to the treatment group (to see objective price) or the control group (did not see objective price). This random assignment facilitates causal inference by making the two samples randomly similar to each other so that subjects in the treatment group and control group will both have the same average characteristics.

Fourth, this study is a field experiment with random assignment, so the results are based on consumer behaviors in two distinct, real-world purchase journeys (real consumers considering the purchase of real products) rather than on decisions consumers “might make” in a hypothetical purchase journey, as tested in most other studies. Consequently, this study furthers the understanding of the extent to which information (and in this case price information) drives the behavior of buyers in the marketplace as was suggested by Urbany (1986). It is also responsive to Owens’ call for future research using the internet to test the impact of missing prices (Owens, 2003).

Managerial contribution

The findings of this study, while intuitive, are completely contrary to conventional wisdom in the recreational boating industry where most manufacturers and dealers do not provide objective price on their own websites or third-party websites, or in product literature. The results of this study demonstrate

that providing objective price encourages continued search and is more likely to generate leads and greater purchase intent. It provides evidence to managers who are (or should be) considering a fundamental change in their approach to omitting objective price. This research provides strong support to suggest reconsideration of pricing strategy in consumer products industries, offering high cost, high involvement products, where it is still common practice not to advertise objective selling price.

Making objective price available during the evaluation phase of the purchase journey, in a transparent manner consistent with the internet age, could positively impact product sales in a significant manner, not only for individual manufacturers and dealers but for entire industries such as the recreational boating industry and similar industries that sell high cost, high involvement products and hide price.

Limitations and future research

This study is subject to limitations. This study does not follow the purchase journey to the conclusion of a purchase. While recognizing this weakness, all of the factors associated with a strong correlation between purchase intentions and actual purchase identified by Morwitz, et al., (2007) are present for the product used in this experiment, significantly mitigating this weakness. However, the conclusions of this study could be strengthened by following the third-party website visitors who become leads for six to twenty-four months to determine if there is a significant difference in actual sales based on seeing price or not seeing price during the evaluation stage of the purchase journey. Allowing

the experiment to run an extended time is not likely to alter the findings but would allow for testing the impact of missing prices on sales. A more longitudinal approach to this study should be considered. This is an area for future researchers to explore.

Though new boats are a high cost, high involvement product, the context of this study may not be generalizable to other industries that sell high cost, high involvement products and hide price during the evaluation stage of the path to purchase. Although there are few remaining industries that obscure price in their advertising (online and otherwise), the results of this study should provide evidence and context to encourage other industries to consider advancing similar research as they consider whether their current practices are still valid.

In this study, the decision was made to place a cookie on visitors to the website so that each visitor would only see listings with price or without price, not both. The results, therefore, apply to differences between individuals who saw price and did not see price. This research did not consider differences in behavior within an individual for whom price was visible for some products and not visible for others. Future research should test differences in behavior related to seeing price and not seeing price within individuals rather than differences between individual as was done in this study. Although there is no expectation that the findings would be different, a study of the difference in behavior within an individual for whom price was visible for some products and not for others, would provide evidence of the competitive impact on companies that hold out from

providing objective price as others in their industry change their pricing practices based on the evidence provided by this study.

The focus of this study is on high-cost, high involvement consumer products and B2C communication of objective selling price. A Google search of “should I publish my prices online” generates an active online discussion among small B2B businesses about whether to display prices on their website. It appears that the lack of objective price information in the B2B marketplace is even more widespread than in the B2C marketplace. Future researchers could study the impact of missing prices on continued search, lead generation and sales in the B2B marketplace.

Another potentially productive area of research would be the impact of missing prices on search engine optimization and the ability to generate traffic to your website. Do companies who discuss pricing on their website generate more web traffic than companies who do not discuss pricing on their website.

As happens in the marketplace every day, each manufacturer and their dealer determined the objective price to be included in the new boat product listing for this study. Future research could explore the impact of price elasticity on continued search, lead generation, purchase intent and sales for high cost, high involvement products. For industries where MSRP is well above actual selling price, it would be helpful to understand if there is an ideal offering price (such as Minimum Advertised Price), in terms of dealer margin, from the point of view of the impact of price elasticity on the dependent variables studied, and sales.

Finally, researchers might look at how hiding price impacts consumer trust and firm reputation as well as ethical considerations of hiding price. Indounas (2008) investigated pricing practices and examined differences between companies which perceived pricing decisions do entail ethical considerations and those that do not hold such a belief. He concluded “that a corporate culture that facilitates a customer orientation towards pricing decisions” is more effective in meeting consumer needs (Indounas 2008, p. 169). Pricing decisions entail ethical considerations. Hiding prices is designed to force the buyer to make contact with a dealer to learn about price. This approach focuses solely on the needs of the company and not the needs of the buyer.

“Companies that do perceive that pricing decisions are related to ethical considerations tend to follow a more balanced approach when setting prices by pursuing both customer- and competition-oriented pricing objectives, without, however, overlooking financial objectives (Indounas 2008, p. 161).” Future research could seek to learn whether owners and managers of companies that hide price perceive there is an ethical consideration in their decision to hide price. Have owners and managers considered what they might have to gain by avoiding pricing practices (hiding price) that might have ethical considerations and the potential ethical implications of their pricing decisions and the impact on consumer trust and firm reputation?

There is an ongoing debate within businesses, and among business leaders, about the efficacy of hiding price from potential buyers. This practice is evident in a few remaining industries of significance that sell high cost, high involvement

products to consumers. And, may be even more prevalent in B2B marketplaces based on Google searches of the topic. This study provides evidence for reconsidering the practice of hiding price for high cost, high involvement consumer products (and in particular, for new boats). Replication of this research in other industries offering high cost, high involvement consumer products will likely be needed to change this business practice in remaining B2C markets. Replication in B2B markets could provide evidence to help business managers make an important, and scary, decision to be more transparent in their pricing strategy. This study has shown that price visibility does lead to more search, more leads and greater purchase intent. If future studies support this evidence in other B2C markets and in B2B markets, the impact on sales for businesses that currently hide price could be significant. This study opens a fertile area for future research.

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Appendix A

Survey of Purchase Intent for Leads

Start of Block: Welcome to the Survey on Your Purchase Journey

We are interested in understanding the boat purchase journey for purchasers of new boats. This survey should take you around 3 minutes to complete and you will receive a \$10.00 Starbucks gift card electronically upon completion and submission of the survey.

This research is being conducted by BoatTrader.com and a doctoral student at DePaul University for a dissertation. You will be asked to answer some questions relevant to your purchase intent and purchase time frame. You will also be presented a few demographic questions for classification purposes only. Please be assured that your responses will be kept completely confidential and in no way identifiable to you. By completing the survey and submitting your answers you are agreeing to participate in the research study.

Your participation in this research is voluntary. You can choose not to participate and have the right to withdraw at any point during the survey, and for any reason. Once you submit your responses, we will no longer be able to remove your data later from the study because we will not know which data belongs to you. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Thomas J. Dammrich at TDAMMRIC@depaul.edu.

By clicking the button below, you are agreeing that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

End of Block: Welcome to the Survey on Your Purchase Journey

Start of Block: Let's Get Started

Q1 How many boats (powerboats and/or sailboats) have you purchased?

- ☐ None (0)
- ☐ 1 (1)
- ☐ 2 (2)
- ☐ 3 or more (3)
-

Q2 Do you currently own a boat (powerboat, personal watercraft, or sailboat)?

- ☐ Yes (1)
- ☐ No (2)

End of Block: Let's Get Started

Start of Block: Your Recent Visit to BoatTrader.com

With the following questions we seek to understand your purchase journey for a new boat. On your recent visit to BoatTrader.com you contacted a dealer. Please answer these questions keeping in mind the boat model you contacted a dealer about.

Q3 Did you visit a dealer or manufacturer website before visiting BoatTrader.com?

☐ Yes (1)

☐ No (0)

Q4 Did you see a price on BoatTrader.com for the new boat you contacted the dealer about?

☐ Yes (1)

☐ No (0)

Q5 Have you seen an offering price on the new boat you contacted the dealer about other than on BoatTrader.com?

☐ Yes (1)

☐ No (0)

Q6 Have you searched for other brands and models of new powerboats?

☐ Yes (1)

☐ No (0)

Q7 My knowledge of the price for the new boat I contacted the dealer about is...

- ☐ Very low (1)
 - ☐ Low (2)
 - ☐ Moderate (3)
 - ☐ High (4)
 - ☐ Very high (5)
-

Q8 I expect to purchase a new boat within the next...

- ☐ 30 Days (1)
 - ☐ 60 days (2)
 - ☐ 90 days (3)
 - ☐ 6 months (4)
 - ☐ 12 months (5)
 - ☐ More than 12 months (6)
 - ☐ Unknown (7)
-

Q9 If I were going to buy a boat, the probability of buying this model is...

- ☐ Very Low (1)
 - ☐ Low (2)
 - ☐ Somewhat low (3)
 - ☐ Moderate (4)
 - ☐ Somewhat high (5)
 - ☐ High (6)
 - ☐ Very high (7)
-

Q10 The probability that I would consider buying this boat is...

- ☐ Very Low (1)
 - ☐ Low (2)
 - ☐ Somewhat low (3)
 - ☐ Moderate (4)
 - ☐ Somewhat high (5)
 - ☐ High (6)
 - ☐ Very High (7)
-

Q11 The probability that I would purchase a boat is...

- ☐ Very Low (1)
- ☐ Low (2)
- ☐ Somewhat low (3)
- ☐ Moderate (4)
- ☐ Somewhat high (5)
- ☐ High (6)
- ☐ Very High (7)

Display This Question:

- If The probability that I would purchase a boat is... = Very Low*
- Or The probability that I would purchase a boat is... = Low*
- Or The probability that I would purchase a boat is... = Somewhat low*
- Or The probability that I would purchase a boat is... = Moderate*
- Or The probability that I would purchase a boat is... = Somewhat high*
- Or The probability that I would purchase a boat is... = High*
- Or The probability that I would purchase a boat is... = Very High*

Q12 The probability that I would purchase a boat is...

0 10 20 30 40 50 60 70 80 90 100

Please rate probability from 0% to 100% ()	
--	--

Q13 What do you expect to pay for the new boat you saw on BoatTrader.com and contacted a dealer about?

Q14 Do you consider the new boat you contacted the dealer about to be affordable?

☐ Yes (1)

☐ No (0)

End of Block: Your Recent Visit to BoatTrader.com

Start of Block: Wrapping It Up

The following questions are used for classification purposes only.

Q15 What is your age?

☐ 18 to 34 (1)

☐ 35 to 55 (2)

☐ 56 to 65 (3)

☐ 66 to 75 (4)

☐ 76 or older (5)

Q16 What is your gender?

- ☐ Male (2)
 - ☐ Female (1)
-

Q17 Which of the following best describes your current relationship status?

- ☐ Married (1)
 - ☐ Widowed (2)
 - ☐ Divorced (3)
 - ☐ Separated (4)
 - ☐ Single, but cohabiting with a significant other (5)
 - ☐ Single, never married (6)
-

Q18 What is the highest level of school you have completed or highest degree you have received?

- ☐ Less than high school diploma (1)
 - ☐ High school diploma or equivalent (e.g., GED) (2)
 - ☐ Some college but no degree (3)
 - ☐ Associate degree (4)
 - ☐ Bachelor degree (5)
 - ☐ Graduate degree (6)
-

Q19 How many people live in your household?

- ☐ 1 (1)
 - ☐ 2 (2)
 - ☐ 3 (3)
 - ☐ 4 (4)
 - ☐ 5 (5)
 - ☐ 6 or more (6)
-

Q20 What is your approximate annual household income?

- ☐ \$0 to \$49,999 (1)
 - ☐ \$50,000 to \$74,999 (2)
 - ☐ \$75,000 to 99,999 (3)
 - ☐ \$100,000 to \$149,999 (4)
 - ☐ \$150,000 to \$199,000 (5)
 - ☐ \$200,000 and up (6)
 - ☐ Prefer Not to Answer (7)
-

Q21 What is your zip code?

End of Block: Wrapping It Up

Appendix B
IRB Letters of Approval

DEPAUL UNIVERSITY



Office of Research Services
Institutional Review Board
1 East Jackson Boulevard
Chicago, Illinois 60604-2201
312-362-7593
Fax: 312-362-7574

Research Involving Human Subjects NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

To: Thomas Dammrich, MBA, MSA, Graduate Student, Driehaus College of Business & Kellstadt Graduate School of Business

Date: August 6, 2018

Re: Research Protocol # TD071218BUS
“When Objective Price Information is Not Available: Impact on the Purchase Journey for High Cost, High Involvement Products”

Please review the following important information about the review of your proposed research activity.

Review Details

This submission is an initial submission. Your research project meets the criteria for Expedited review under 45 CFR 45 CFR 46.110 under the following categories:

“(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).”

“(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.”

Approval Details

Your research was originally reviewed on July 26, 2018 and revisions were requested. The revisions you submitted on August 1, 2018 were reviewed and approved on August 6, 2018.

Approval Period: August 6, 2018 – August 5, 2019

Approved Consent, Parent/Guardian Permission, or Assent Materials:

- 1) Waiver of Informed Consent granted under 45 CFR 46.116(d) for clickstream data
- 2) Altered Adult Consent, version 8-1-2018 (attached)
 - a. Altered of consent granted under 45 CFR 46.116(d)
 - b. Waiver of documentation of consent granted under 45 CFR 46.117 (c) 2

Other approved study documents:

- 1) Recruitment Email, version 8-1-2018 (attached)

Number of approved participants: 400,400 (400,000 clickstream data and 400 survey) Total

You should not exceed this total number of subjects without prospectively submitting an amendment to the IRB requesting an increase in subject number.

Funding Source: 1) None

Approved Performance sites: 1) DePaul University and 2) BoatTrader.com

Reminders

- Only the most recent IRB-approved versions of consent, parent/legal guardian permission, or assent forms may be used in association with this project.
- Any changes to the funding source or funding status must be sent to the IRB as an amendment.
- Prior to implementing revisions to project materials or procedures, you must submit an amendment application detailing the changes to the IRB for review and receive notification of approval.
- You must promptly report any problems that have occurred involving research participants to the IRB in writing.
- If your project will continue beyond the approval period indicated above, you are responsible for submitting a continuing review report at least 3 weeks prior to the expiration date. The continuing review form can be downloaded from the IRB web page.
- **Once the research is completed, you must send a final closure report for the research to the IRB.**

The Board would like to thank you for your efforts and cooperation and wishes you the best of luck on your research. If you have any questions, please contact me by telephone at (312) 362-7592 or by email at dalfaro@depaul.edu.

For the Board,



Diana Alfaro, MS
Assistant Director of Research Compliance
Office of Research Services

Cc: Richard Rocco, PhD, Faculty Sponsor, Driehaus College of Business & Kellstadt Graduate School of Business

DEPAUL UNIVERSITY



Office of Research Services
Institutional Review Board
1 East Jackson Boulevard
Chicago, Illinois 60604-2201
312-362-7593
Fax: 312-362-7574

Research Involving Human Subjects NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

To: Thomas Dammrich, MBA, MSA, Graduate Student, Driehaus College of Business & Kellstadt Graduate School of Business

Date: August 16, 2018

Re: Research Protocol # TD071218BUS-R1
"When Objective Price Information is Not Available: Impact on the Purchase Journey for High Cost, High Involvement Products"

Please review the following important information about the review of your proposed research activity.

Review Details

This submission is an Amendment. Amendment R1 involves: 1) adding an incentive, 2) revising the recruitment email and altered consent to reflect the added incentive, 3) adding funding source – Self-funded by PI.

Your research project continues to meet the criteria for Expedited review under 45 CFR 45 CFR 46.110 under the following categories:

"(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis)."

"(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies."

Approval Details

Your research Amendment was reviewed and approved on August 16, 2018.

Amendment Approval Period: August 16, 2018 – August 5, 2019

Approved Consent, Parent/Guardian Permission, or Assent Materials:

- 1) Waiver of Informed Consent granted under 45 CFR 46.116(d) for clickstream data
- 2) Altered Adult Consent, version 8-15-18 (attached)
 - a. Altered of consent granted under 45 CFR 46.116(d)
 - b. Waiver of documentation of consent granted under 45 CFR 46.117 (c) 2

Other approved study documents:

- 1) Recruitment Email, version 8-15-18 (attached)

Number of approved participants: 400,400 (400,000 clickstream data and 400 survey) Total

You should not exceed this total number of subjects without prospectively submitting an amendment to the IRB requesting an increase in subject number.

Funding Source: 1) Self-funded

Approved Performance sites: 1) DePaul University and 2) BoatTrader.com

Reminders

- Only the most recent IRB-approved versions of consent, parent/legal guardian permission, or assent forms may be used in association with this project.
- Any changes to the funding source or funding status must be sent to the IRB as an amendment.
- Prior to implementing revisions to project materials or procedures, you must submit an amendment application detailing the changes to the IRB for review and receive notification of approval.
- You must promptly report any problems that have occurred involving research participants to the IRB in writing.
- If your project will continue beyond the approval period indicated above, you are responsible for submitting a continuing review report at least 3 weeks prior to the expiration date. The continuing review form can be downloaded from the IRB web page.
- **Once the research is completed, you must send a final closure report for the research to the IRB.**

The Board would like to thank you for your efforts and cooperation and wishes you the best of luck on your research. If you have any questions, please contact me by telephone at (312) 362-7592 or by email at dalfaro@depaul.edu.

For the Board,



Diana Alfaro, MS
Assistant Director of Research Compliance
Office of Research Services

Cc: Richard Rocco, PhD, Faculty Sponsor, Driehaus College of Business & Kellstadt Graduate School of Business

DEPAUL UNIVERSITY



Office of Research Services
Institutional Review Board
1 East Jackson Boulevard
Chicago, Illinois 60604-2201
312-362-7593
Fax 312-362-7374

Research Involving Human Subjects NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

To: Thomas Dammrich, MBA, MSA, Graduate Student, Driehaus College of Business & Kellstadt Graduate School of Business

Date: December 20, 2018

Re: Research Protocol # TD071218BUS-R2

Title: "When Objective Price Information is Not Available: Impact on the Purchase Journey for High Cost, High Involvement Products"

Please review the following important information about the review of your proposed research activity.

Review Details

This submission is an Amendment. Amendment R2 involves: 1) an increase in the incentive to a \$10 Starbucks gift card, 2) the survey results will now go directly to the PI rather than www.BoatTrader.com, and 3) BoatTrader.com will now send the recruitment email leads to 2000 random website visitors.

Your research project continues to meet the criteria for Expedited review under 45 CFR 45 CFR 46.110 under the following categories:

"(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis)."

"(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies."

Approval Details

Your research Amendment was reviewed and approved on December 20, 2018.

Amendment Approval Period: December 20, 2018 – August 5, 2019

Approved Consent, Parent/Guardian Permission, or Assent Materials:

- 1) Waiver of Informed Consent granted under 45 CFR 46.116(d) for clickstream data
- 2) Altered Adult Consent, version 12-13-2018 (attached)
 - a. Altered of consent granted under 45 CFR 46.116(d)
 - b. Waiver of documentation of consent granted under 45 CFR 46.117 (c) 2

Other approved study documents:

- 1) Recruitment Email, version 12-13-18 (attached)

Number of approved participants: 400,400 (400,000 clickstream data and 400 survey) Total

You should not exceed this total number of subjects without prospectively submitting an amendment to the IRB requesting an increase in subject number.

Funding Source: 1) Self-funded

Approved Performance sites: 1) DePaul University and 2) BoatTrader.com

Reminders

- Only the most recent IRB-approved versions of consent, parent/legal guardian permission, or assent forms may be used in association with this project.
- Any changes to the funding source or funding status must be sent to the IRB as an amendment.
- Prior to implementing revisions to project materials or procedures, you must submit an amendment application detailing the changes to the IRB for review and receive notification of approval.
- You must promptly report any problems that have occurred involving research participants to the IRB in writing.
- If your project will continue beyond the approval period indicated above, you are responsible for submitting a continuing review report at least 3 weeks prior to the expiration date. The continuing review form can be downloaded from the IRB web page.
- **Once the research is completed, you must send a final closure report for the research to the IRB.**

The Board would like to thank you for your efforts and cooperation and wishes you the best of luck on your research. If you have any questions, please contact me by telephone at (312) 362-6168 or via email at jbloom8@depaul.edu.

For the Board,



Jessica Bloom, MPH
Research Protections Coordinator
Office of Research Services

Cc: Richard Rocco, PhD, Faculty Sponsor, Driehaus College of Business & Kellstadt Graduate School of Business

Appendix C

Recruitment Email for Survey of Leads

Dear Website Visitor,

We are interested in understanding the boat purchase journey for purchasers of new boats. Website is cooperating on research that is being conducted by a doctoral student at DePaul University, Chicago, IL. You are receiving this request because you recently visited Website and contacted a dealer by email or phone about a new boat listing you viewed on Website.

We are asking you to participate in this research by completing a brief survey at **[insert link]**. **The survey will take you about 3 minutes to complete and you will receive a \$10.00 Starbucks gift card electronically immediately upon completion of the survey.** You will be asked about your current boat ownership, purchase intent, purchase time frame and a few demographic questions for categorization purposes only. Please be assured that your responses will be kept completely confidential and in no way identifiable to you.

Your participation in this research is voluntary. You can choose not to participate and have the right to withdraw at any point during the survey, and for any reason. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Thomas J. Dammrich at TDAMMRIC@depaul.edu or call him at 312-946-6220.

If you have questions about your rights as a research subject, you may contact Susan Loess-Perez, DePaul University's Director of Research Compliance, in the Office of Research Services at 312-362-7593 or by email at sloesspe@depaul.edu. You may also contact DePaul's Office of Research Services if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.

We thank you for your patronage of Website, and if you choose to complete the survey, we thank you for your willingness to assist in this important research.

Website.com

Figures

Figure 1. Comparison of Traditional and Contemporary Purchase Journey

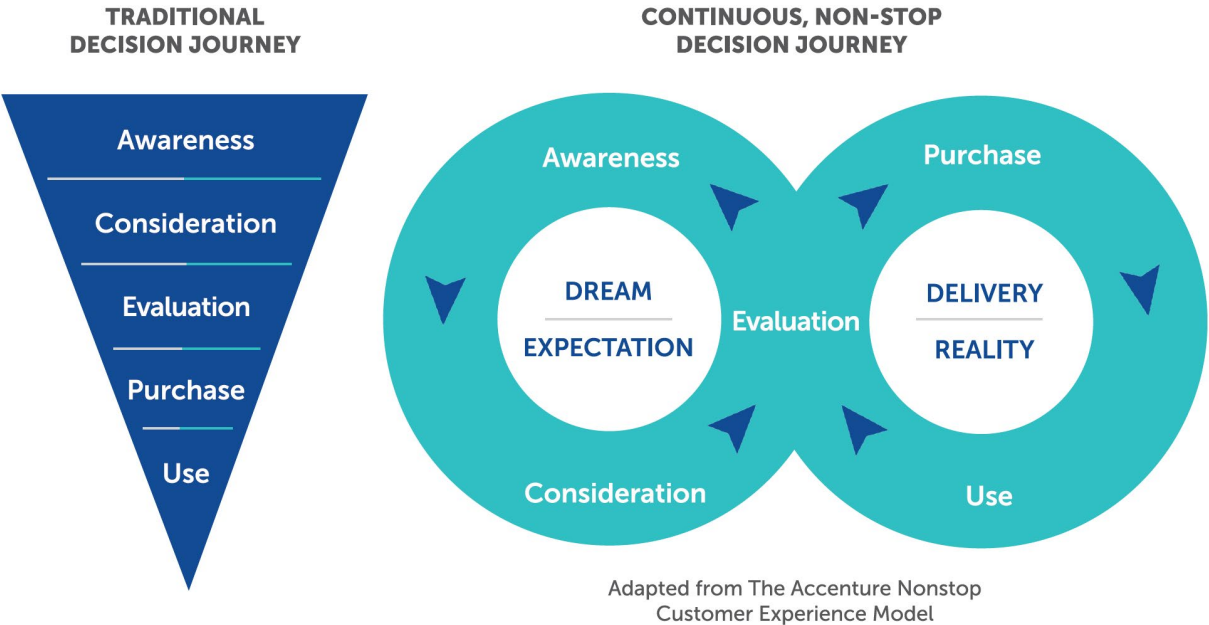


Figure 2. Hypothesized Relationships

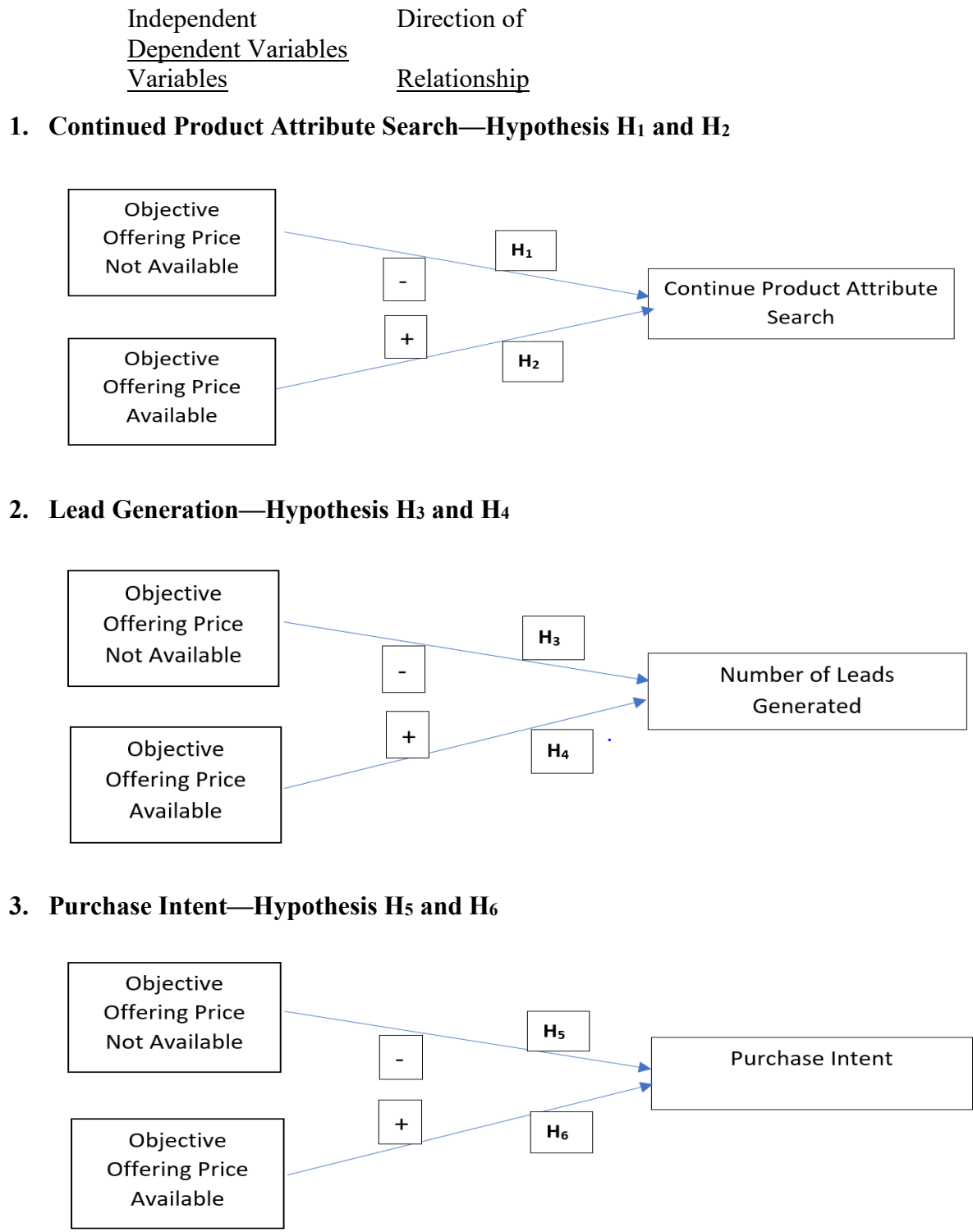


Figure 3. Study Design Flowchart

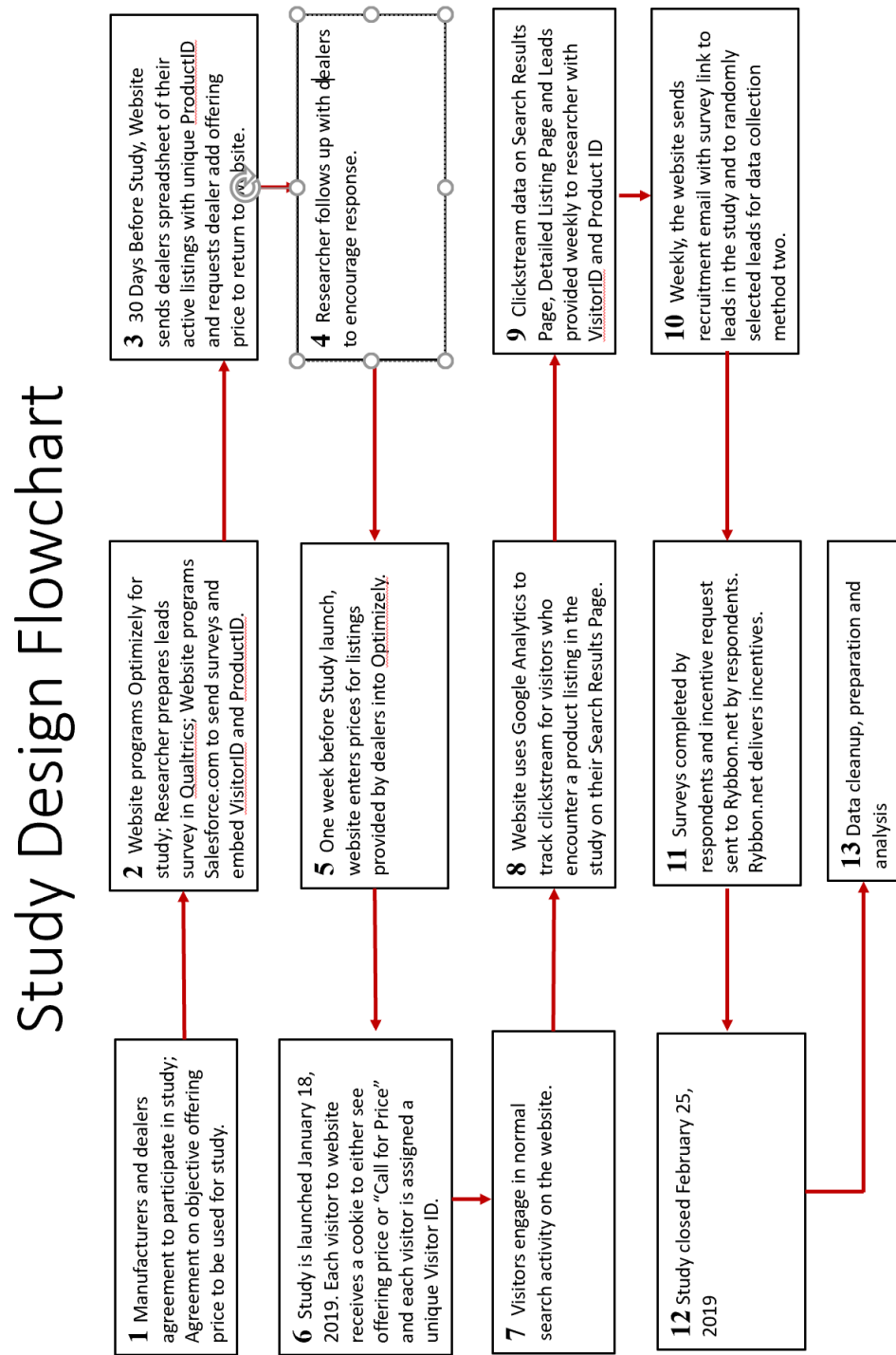
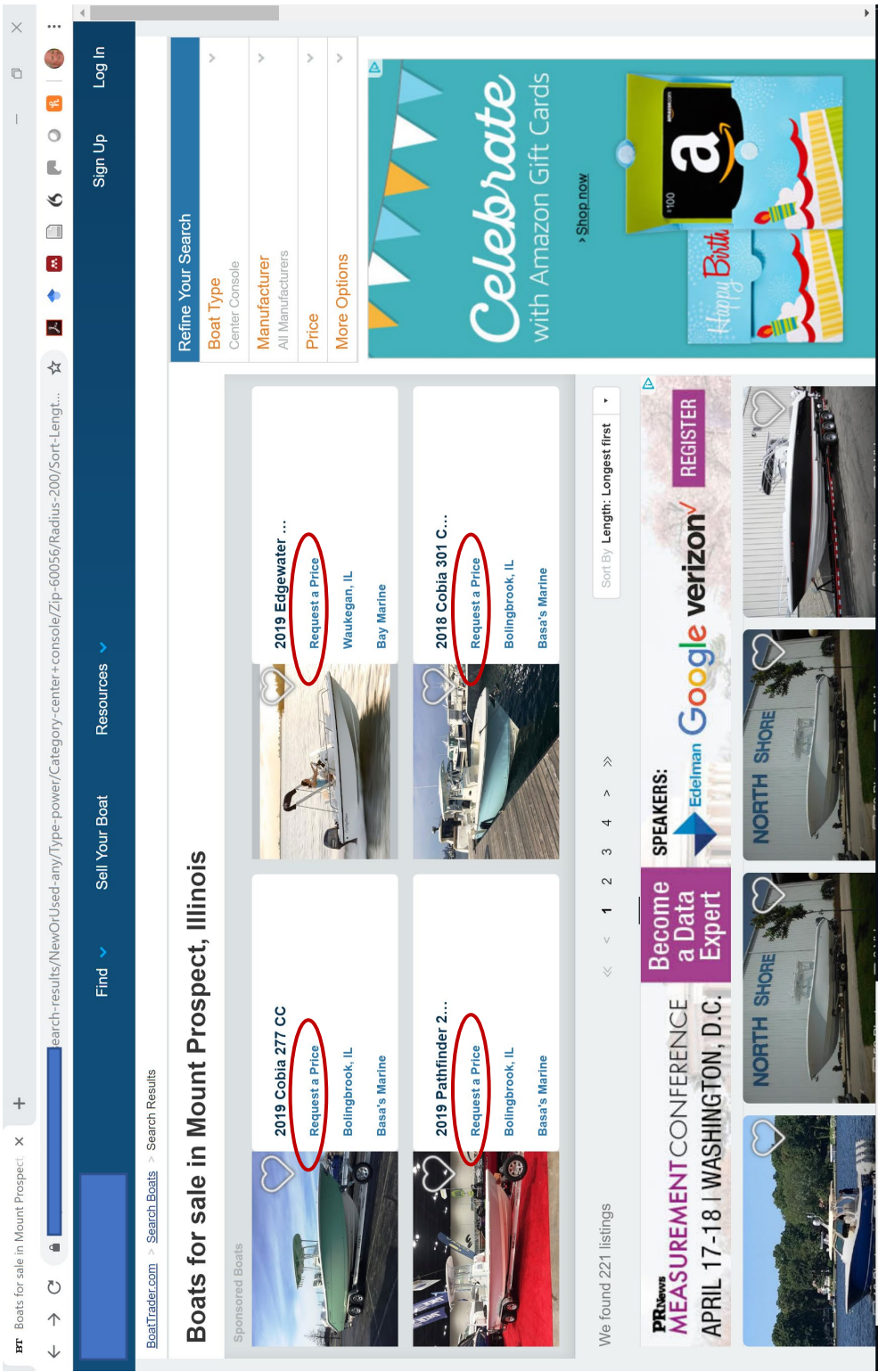


Figure 4. Sample Search Results Page



[illegible]

Figure 6. Sample Dialogue Box for Lead Data

The image shows a web browser window displaying a boat listing for a 2019 Edgewater 158CS in Waukegan, IL. A modal dialog box is open in the center, highlighted by a red circle. The dialog box contains the following elements:

- Buttons:** Request Info, Schedule Visit, Trade-In Inquiry.
- Text:** * We weren't able to post your message, please check the highlighted fields and try again.
- Form Fields:** First & Last Name, Email, Phone (opt.).
- Text:** I am interested in your 2019 Edgewater 158CS and have a potential trade-in. Please let me know. Thank you!
- Button:** Contact the Seller.

The background page includes a navigation bar with links like Find, Sell Your Boat, Resources, Sign up, and Log In. It also features a large banner for bundling home and auto insurance, and a table of boat details.

Boat Details	
Class	
Category	
Year	
Make	
Length	
Propulsion Type	
Hull Material	
Fuel Type	
Location	
More Details	
Measurements	
Propulsion	

Table 1***Descriptive Statistics***

<i>Industry Participants</i>	<i>N</i>
Third-party National Website for New Boat Listings	1
Manufacturer Boat Brands	19
Powerboat Segments	8
New Boat Dealers	170
New Boat Listings	2,396

Table 2***Descriptive Statistics***

<i>Sample</i>	<i>N</i>
Search Results Page Listing Views	54,681
Detailed Product Page Listing Views (continued search)	22,205
Clickthrough Rate	41%
Total Leads from Detail Listing Views	165
Email Leads	118
Phone Leads	47
Lead Generation Rate	0.8%
Email Leads from Secondary Method	4,483
Total Recruitment Emails New Boat Listings	4,601
Survey Completions	252
Survey Response Rate	5.5%

Table 3***Descriptive Statistics***

<i>Respondents</i>	<i>N</i>
Age of Respondents	
18-34	12.7%
35-55	49.6%
56-65	24.2%
Over 65	11.5%
Male Respondents	87.0%
Living with Spouse or Partner	81.7%
College Educated	68.0%
Three or More People Living in Household	50.0%
Household Income	
\$0-\$99,999	24.2%
\$100,000 and up	61.1%
Prefer Not to Answer	20.7%

Table 4

Means, Mean Difference, Confidence Interval and Cronbach's Alpha Reliability								
Variable	<i>N</i>	<i>Mean</i>	<i>Mean Difference</i>	95% CI	<i>t</i>	<i>df</i>	<i>p value</i>	Chronbach's Alpha
1. Continued Search								
a. Control Group (no price displayed)	22,205	0	0.58	.57 - .58	174.14	22204.00	< .01**	--
b. Treatment Group (price displayed)		0.58						
2. Lead Generation								
a. Control Group (no price displayed)	165	0	0.35	.28 - .43	9.43	164.00	< .01**	--
b. Treatment Group (price displayed)		0.35						
3. Purchase Intent								
a. Control Group (no price displayed)	252	4.97	-0.36	-.65 - -.07	2.44	249.00	< .01**	.71
b. Treatment Group (price displayed)		5.33						
** <i>p</i> < .01								