THE MODERATING ROLE OF CONSUMER EDUCATION ON THE INTENTION TO BUY A HIGH RISK PRODUCT ONLINE

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ABSTRACT

A survey of 1,606 currently registered U. S. boat owners was conducted to determine their likelihood of purchasing a major durable (boat) in an online format along with the various factors and preferences to be considered in consummating such a purchase. Data from each respondent was gathered for the purpose of assessing their perceived personal risk in making such a purchase and to determine their personality traits with respect to technology, curiosity, and openness to new experiences. Respondents intention to buy this high risk product online was measured prior to and after providing education on the online purchase process that specifically addressed key risk factors.

The results indicate that consumer education can change the likelihood of buying online but that the impact of education is mediated by the personality of the respondent. Specifically, a significantly greater change in interest in buying online was observed for personality types who are higher in openness to new experiences and curiosity as well as more comfortable with technology.

INTRODUCTION

The evaluation of internet shopping behavior has been ongoing for nearly 20 years, beginning in the mid-1990s when online retail sales were mostly considered to be a novelty venue, and continuing through present times. In 2013, total U.S. e-commerce retail sales were in excess of $260 billion which reflects a change of approximately 3.5% from the prior year (U.S. Census Bureau News 2014). Driving the growth are two factors: 1) increased use of smart phones and tablets, which are being used to research purchases and find the best price; and 2) traditional retailers' increased investment in their online businesses. Interestingly, growth is not originating from new customers. Instead, growth is being driven by existing online shoppers who are gradually moving from low consideration goods to more sophisticated products (Forrester Research Online Retail Forecast, 2012-2017 [U.S.]).

The theory of why consumers do or do not shop online has been examined carefully as the medium has grown exponentially. At the very lowest level, McGuire (1974) suggests that all shopping motivation is primarily driven by individual gratification and satisfaction. A 2005 review of the literature on online consumer behavior reports that three theories have played dominant roles: theory of reasoned action, expectation-confirmation theory, and innovation diffusion theory (Cheun, Chan, & Limayem 2005). Each of these theories is helpful in understanding consumer behavior at different stages from intention to adoption to repurchase.

Limayem, Khalifa and Frini (2000) hypothesized that internet shopping could be explained by specific behavioral theories such as Fishbein and Ajzen's (1975) theory of reasoned action or Ajzen's (1991) theory of planned behavior. Monsuwe, Dellaert and Ruyter (2004) using the technology acceptance model showed that attitudes toward online shopping were affected by ease of use, usefulness, consumer traits, situational factors, product characteristics, trust, and previous online shopping experience. More recently, Gupta and Kim (2010) used mental accounting theory to investigate internet shopping. Under this theory, customers evaluate potential transactions and then approve or disapprove each potential transaction. Factors, such as risk, pleasure, and convenience, determine the perceived value of the transaction and therefore, determine the intention to purchase online (Gupta and Kim 2010).

The growing body of literature indicates that the drivers of online shopping can be divided into five categories: consumer characteristics, product/service characteristics, medium characteristics, merchant characteristics, and environmental influences. Early explanations for the determinants of online shopping behavior varied widely but were broadly classified as relating either to specific consumer motivations/traits (or some aspect of the consumer), features of the online medium, and, in some cases, a combination of both. Pachauri (2002), for example, classified the determinants into the following four concepts: (1) time minimization, i.e., consumers are searching for the best product at the lowest price and they shop online when the "time" to accomplish this is minimized; (2) risk minimization, i.e., again, since consumers want to optimize decision-making regarding price and quality of products, they shop online where merchant reliability, credibility, and trustworthiness are not significant deterrents; (3**)** consumer lifestyle**,** i.e., shopping behavior is a function of one or several consumer variables such as sociodemographics, buying motives and needs, and attitudes, interests, and opinions; and (4) contextual influence, i.e., online shopping behavior can be driven by "contextual" factors such as website atmosphere and site accessibility. Khalifa and Limayem (2003) reported the key influences on intention to shop online includes perceived consequences, specifically cheaper prices; facilitating conditions, such as transaction efficiency; and social influences of family and media. Sorce, Perotti and Widrick (2005) reported four primary motives for shopping online: (1) convenience; (2) informativeness; (3) selection; and (4) the ability to control the shopping experience. Consistent with the stream of research explaining online shopping behavior, this research explored the moderating effect of consumer education on the intention to shop online. Specifically, this study considers how the effects of personality traits and perceived risk can be altered by consumer education about the online purchase process.

Personality Traits and Online Shopping

Specific personality traits have been investigated as predictors of online shopping. Even though the internet was before his time, Berlyne (1950, 1954) would likely have postulated that initial attraction to internet shopping would be a function of the human needs of curiosity and novelty. More recent internet specific research has expanded upon this. For example, Donthu and Garcia (1999) discovered that online shoppers were more willing to innovate and take risks and were more impulsive than their non-internet shopping counterparts. Goldsmith (2002) also

identified innovativeness as a predictor of online buying. Kwak, Fox, and Zinkhan (2002) reported that individuals with higher scores on traits like sensation seeking and opinion leadership were more likely to buy online than those with lower scores on those scales. Copus (2003) investigated the personality traits of vigilance and openness to change. Vigilance, the tendency to trust versus being suspicious about others' motives and intentions, determines an expectation regarding whether a merchant will take advantage of the consumer. As expected, vigilance was negatively correlated to online purchasing while openness to change was positively correlated (Copus 2003).

Bosnjak, Galesic, and Tuten (2007) found that three of the Big Five personality factors, neuroticism, openness to experiences, and agreeableness had small but significant influence on willingness to buy online. However, affective involvement was a highly significant determinant of online buying intention while the need for cognition was negatively related. These results suggest that the decision to buy online is more likely made with "emotion" rather than "reasoning". In support of the emotional connection to online shopping, Tsao and Chang (2010) revealed that more extroverted and more open to experience individuals sought fun, excitement, and enjoyment during online shopping experiences. Anaza (2014) in exploring the relationship between customer citizenship behaviors in online shopping found that agreeableness influenced empathic concerns which in turn affected the consumers' willingness to engage in helping behaviors online. Finally, Chen (2011) reported that while significant advances have occurred from a technology perspective, not much has changed for internet shoppers in the past 10 years. Specifically, the propensity to trust, buying impulsiveness, and value consciousness are all strong predictors of consumer willingness to purchase products online. In addition, traits such as openness to change, risk taking, curiosity, and innovativeness have been identified consistently with a willingness to shop online.

H_1 Personality characteristics impact the likelihood of purchasing online.

Trust and Online Shopping

Two crucial early worries for consumers that influence online purchase behavior are privacy and trust. Privacy issues pertain to unauthorized collection and secondary usage of personal information as well as the safety of credit card information being utilized in the online transaction. A 2005 survey conducted by Privacy and American Business (P&AB 2005) indicated that concerns about the use of personal information kept 64% of respondents from purchasing from a company while two-thirds of respondents declined to register at a website or shop online because they found the privacy policy to be confusing and/or unclear. However, concerns over privacy may be lessening. In a recent survey reported by Accenture (2012), respondents indicated that the ability of companies to present relevant offers is more important than concern over companies tracking their website activities.

Schoenbachler and Gordon (2002) reported that consumers needed a level of trust toward a website prior to revealing information. Further, consumer trust of a website is a salient issue in determining whether a purchase will actually be consummated or not. Pan and Zinkhan (2006) discovered that consumers respond more favorably to a site with a clearly stated privacy policy

than one without. Miyazaki and Fernandez (2000) found that a clearly stated privacy policy results in a lower perceived risk for the consumer. Gefen, Karahanna and Straub (2003) disclosed that prior experience with a website is positively related to online trust. Others independently discovered that concern for both financial and personal information tended to lessen as e-shoppers became more experienced (Bart, Shankar, Sultan & Urban 2005; Chen & Barnes 2007). Tsai, Egelman, Cranor and Acquisti (2011) discovered some consumers were willing to pay a premium to purchase products from privacy protected websites. Although consumer expectation about privacy may be evolving, it is expected that security issues will continue to impact purchases made online.

Another security/trust factor which has stunted consumer acceptance of certain products/product categories in the online medium is the personal risk of the online purchase. Pavlou (2003) defined perceived risk as a consumer's subjective assessment that a loss will be suffered in pursuit of a desired outcome. Kolsaker, Lee-Kelley, and Choy (2004) discovered that perceived risk was more highly correlated with "willingness to shop online" than convenience. Both Yoon (2002) and Shankar, Urban, and Sultan (2002) found lack of trust translates into buying reluctance. A study by Chang and Wu (2012) expanded on the nature of the relationship between trust and online purchase intention by finding an association between perceived risk and the formation of a positive cognitive-based attitude toward online purchase intention. In addition, perceived risk indirectly influenced affect-based attitude through its impact on cognitive-based attitude.

Perceived risk has also been explored for its influence on online shopping intention through involvement. Fram and Grady (1997) found that product categories that involved fashion, material, and/or size decisions were considered high risk and were much less likely to be purchased online. Bhatnagar, Misra and Rao (2000) discovered that the probability of purchasing online decreased dramatically with increases in product risk. High product risk was closely aligned with: (1) higher product technical complexity; (2) higher ego-related needs; (3) higher price; and (4) any product category where feel and touch are important. These product groups are often associated with higher levels of involvement. Since involvement has been found to moderate the impact of perceived risk on online buying intention (Chang and Wu 2012), there may be an opportunity to engage the consumer in cognitive-based responses that encourage involvement.

H_2 Personal risk impacts the likelihood of purchasing online.

Web Communications and Online Shopping

Web site design and other characteristics of the media influence online shopping behavior. For example, consumers respond more favorably toward web sites with a clearly stated privacy policy (Pan and Zinkhan 2006). The consumer's flow experience at a website positively relates to purchase intention (Hsu, Chang and Chen 2012). The online customer experience incorporates both cognitive and affective states that drive online shopping satisfaction, trust and online repurchase intention (Rose, Clark, Samouel and Hair 2012). A company's investments in website design signal its ability to deliver products and services to the

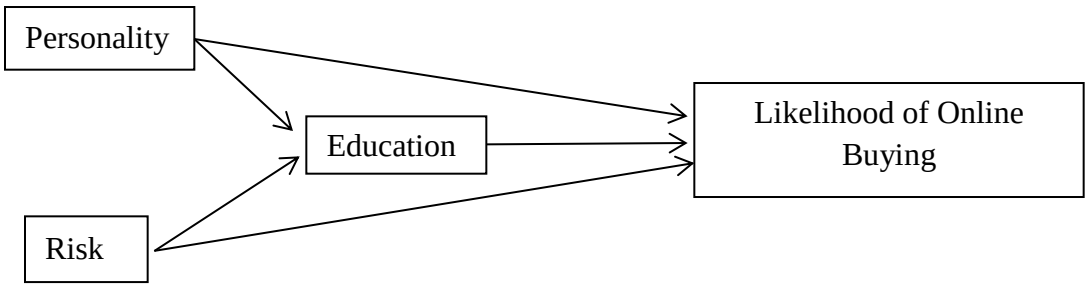
consumer (Schlosser, White and Lloyd 2006). Product photos, product information provided by a third party, and consumer control over the presentation of the information can reduce performance uncertainty for an online retailer (Weathers, Sharma, and Wood (2007). Therefore, web communications can directly address risk, specifically as it relates to the likelihood that the merchant will perform. The merchant can signal to the consumer, the merchant's knowledge and ability to perform. Merchants who address specific risk factors associated with a purchase, convey to the consumer that they have the processes and competencies in place to handle the transaction.

Although the influence of web communications on purchase intentions have been observed in previous studies, there remains a question as to the extent to which media influences can overcome the effects of personality characteristics. Since personality characteristics are more enduring than situational, it would be expected that web design and communications will only increase online purchase intention for personality types that demonstrate a minimum threshold of willingness to buy online. Personality traits will remain the more dominant influence in a consumer's willingness to buy.

H_3 *Web communications and design will increase the likelihood of online purchase only if the consumers' personality traits support a minimum threshold of willingness to buy online.*

The relationships among personality, risk, education and the likelihood of shopping online are summarized in Figure 1.

Figure 1: Model



SAMPLING PROCESS AND DATA COLLECTION

The product chosen for this study is a boat. Boats fall into the durable category and are infrequently purchased online. The sale of boats has a similar infrastructure to automobiles in that there are several manufacturers selling through a network of dealers to a consumer base that relies on the dealer network to provide service after the sale. However, the boating category introduces some additional variables into the online equation because: (1) a boat purchase is most likely a discretionary purchase; (2) it is a purchase primarily driven by a leisure/recreational motivation; and (3) price might vary between a few thousand dollars to several million dollars depending upon the size of the boat and selected amenities. For this study, the size of the boat was limited to $\leq$ 40 feet. This size range includes the following specific categories:

1. fiberglass sport/deck boats 17-23';
2. fiberglass sport cruiser boats 24-38';
3. fiberglass fishing boats 15-23';
4. fiberglass fishing boats 24-40';
5. aluminum fishing boats 14-28'; and
6. pontoon boats.

These six categories account for more than 80% of all new boat unit volume in the United States. Boating represents a substantial market. Global recreational boating revenues were approximately $20 billion in 2011 and expected to rise to $30.6 billion by 2017 (Lucintel, 2012).

The sample for this study was selected from registered boat owners in the United States. Quotas were established for each of the following variables:

1. boat type (sport/deck, sport cruiser, fiberglass fishing 15'-23', fiberglass fishing 24'-40', aluminum fishing, and pontoon)
2. geography (North, South, West)
3. age (21-45, 46+)
4. gender (male, female)
5. buyer type (first boat, 2nd or more boat)

Table 1 shows the breakdown for each of the above specified variables. Only individuals who had purchased previously a new boat were included in the study. A total of 1,606 useable surveys were completed.

Table 1
Types of Boat Owners Included in Sample

Sample Breakdown	Fiberglass Sport/Deck Boats 17'-23'	Fiberglass Sport Cruiser Boats 24'-38'	Fresh/Salt Fiberglass Fishing Boat 15'-23'	Fresh/Salt Fiberglass Fishing Boats 24'-40'	Aluminum Fishing Boats 14'-28'	Pontoon Boats	Total
Overall	284	284	264	229	282	263	1606
Geography							
North	119	110	96	91	109	93	618
South	80	90	91	95	83	78	517
West	85	84	77	43	90	92	471
Age							
21-45	183	150	128	91	90	77	719
46+	101	134	136	138	192	186	887
Buyer Type							
1st Boat	85	52	58	49	64	51	359
2nd or More Boat	199	232	206	180	218	212	1247
Female Owner							216

Measurement of the Research Constructs

Each respondent was contacted by telephone. The interviewers obtained recorded respondents' responses to questions pertaining to each of the research constructs: personality traits, perceived risk, initial likelihood of buying online, and the likelihood of buying online after hearing an explanation of the merchant's process.

Personality was measured using eight statements from the Hogan Personality Inventory. These statements, shown in Table 2, pertain to three (3) personality traits that have been identified in previous studies as predictors of online purchase of major durables. They are technology, curiosity, and openness to new experiences. Each participant's scores for the 8 statements were summed and a total score for the 8 statements ranging from 0-80 was determined for each respondent.

Table 2
Mean Scores for the Personality Traits of Technology, Curiosity and Openness to New Experiences

PERSONALITY STATEMENTS	OVERALL MEAN
I have taken things apart to see how it works	6.55
I know how to use a computer	7.08
I love scary rides at theme parks	5.05
I love to play computer games	4.72
I love technology	6.63
I would like to travel in foreign countries	6.07
I know how to "surf the net"	6.11
I will try anything once	6.32

Survey Question: For each of the following statements please tell me the degree to which this statement describes you. Please use a scale of 0 to 10 where a 10 means you **COMPLETELY AGREE** with the statement and a 0 means you **COMPLETELY DISAGREE** with the statement.

Based on this total score, four general personality "types" were identified within the sample, as follows:

1. **PEBCAKs** – (Problem Exists Between the Chair and Keyboard) – these respondents are, in general, technology challenged, incurious and not open to new experiences (total score 0-20);
2. **CONSERVATIVES** – they are largely PEBCAKS but with a little curiosity and some appetite to try new experiences (total score 21-40);

3. **MODERATES** – these individuals are somewhat curious, willing to try some new experiences and are much more technology savvy than either PEBCAKs or CONSERVATIVES (total score 41-60);
4. **TECIs** – (Technology Experienced Curious Innovators) – these are highly technology savvy individuals, exceedingly curious, and who embrace everything new and exciting in life (total score 61-80).

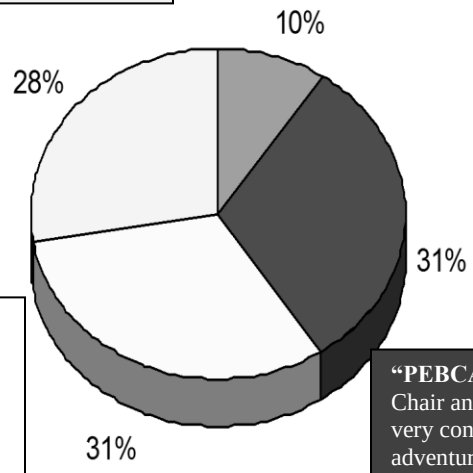
Figure 2 describes in more detail each of the four personality types identified above and percentage of each type represented in the sample.

Risk associated with the online boat purchase was evaluated using six statements covering various forms of risk. These included sharing of personal information, product quality, merchant reputation, purchase process, payment and personal risk. Respondents were asked to indicate their level of concern with each type of risk. In addition, the respondents were asked to rate the overall level of risk that they associate with an online boat purchase. Table 3 reports the mean scores on these statements.

Figure 2: Personality Type Descriptions and Overall Size in Sample

"TECIs" [Technology Experienced Curious Innovators] live with their computers, are highly curious, and embrace almost everything new and exciting in life. They most likely own sport/deck boats and cruisers, but they are also "family anglers" so some own fiberglass fishing boats. They are the youngest personality type with more than 60% 45 or less years old. Nearly 40% are "new-to-boating" which is significantly higher than all other personality types. They are also the most affluent type with nearly 45% having household income between $100-$300k and 30% between $150k -$300k.

"CONSERVATIVES" [Online and in Life] could be considered PEBCAKs with a little courage – they are conservative, but more open to trying something new and will try new things occasionally. They are frequently owners of aluminum (14'-28') and small fiberglass (15'-23') fishing boats. More than 53% have household income between $50k and $150k, but nearly 30% have household income between $25k - $75k. Nearly 2/3 are 46+ and more female owners are conservatives than any other personality type.



"MODERATES" [Mindset and Willing to Try Some New Experiences] represent a large group of consumers who are considerably more savvy using the Internet than PEBCAKs or CONSERVATIVES and are much more fully engaged in life's adventures. They are both curious and open to new experiences with a dash of caution. They are more likely to be owners of sport/deck boats and cruisers, although they are represented in all boat types. They are younger, with nearly 50% being under 46, and more affluent than PEBCAKs and CONSERVATIVES with nearly 1/3 having household income between $100k and $200k.

"PEBCAKs" [Problem Exists Between Chair and Keyboard]. These consumers are very conservative – online, in many of life's adventures, and even fiscally. They are incurious individuals and not interested in new experiences. They are often owners of Pontoons, and Aluminum Boats (14'-28), and small fiberglass (15'-23') fishing boats. Nearly 40% have household income under $75k, and 88% are age 46+. These consumers are less likely to have children living at home.

Table 3 Mean Scores for Risk Factors for Online Boat Purchase	
PURCHASING BOAT ONLINE CONCERNS AND PERSONAL RISK	**OVERALL SAMPLE MEAN**
Survey Question: There could be several concerns you might have **in** purchasing a boat on the Internet. For each item, indicate your level of concern using a scale of 0 to 10 with 10 being **EXTREMELY CONCERNED** and 0 being **NOT CONCERNED AT ALL.**	
Disclosure of financial/personal information in unknown environment	7.22
How the purchase process would work	6.51
Issues with the product (seeing, touching, meeting expectations, etc.)	5.28
Dealing with website/dealer I don't know	6.62
The actual payment transaction	5.96
Survey Question: How would you rate the personal risk of purchasing a boat on the Internet? Indicate your level of personal risk using a scale of 0 to 10 with 10 being **HIGH PERSONAL RISK** and 0 being **NO PERSONAL RISK.**	
Personal risk of online boat purchase	5.44

Essentially these trust issues can be divided into two distinct dimensions. The first dimension revolves around financial/personal data concerns while the second dimension centers on non-financial issues such as ambiguity about how the process would work, not being able to see the product, and/or the issue of dealing with an unknown website/dealership. The biggest concerns to the overall population were disclosure of financial/personal information in an unknown environment (7.22/10), dealing with an unknown website/dealer (6.62/10) and how the process would work (6.51/10). This is totally consistent with expectations given the empirical data that has emerged to date. Table 3 also substantiates what is reported in the literature regarding personal risk, i.e., an online boating transaction would likely fit in all of the high risk categories identified by Bhatnagar, Misra and Rao (2000) and so the average rating of 5.44/10 for personal risk is not surprising.

The likelihood of an online purchase was measured at two intervals. An initial evaluation of a hypothetical scenario involving the purchase of a new boat was taken. In this scenario, the respondents were asked to assume that they were shopping for a new boat and had researched several boat brands using a variety of sources (print, online, friends, boat shows and dealers). The respondents had also investigated the prices and established an acceptable price range for the desired boat. Finally, the respondents were told that they are ready to make the purchase and have the option of buying online. The respondents were asked to indicate on a scale of 1 to 10 the likelihood they would purchase online. It should be noted that in this scenario that there are no price or feature advantages. The mean score is shown in Table 4.

Table 4 Initial Likelihood of Online Purchase	
LIKELIHOOD TO PURCHASE A BOAT ONLINE BEFORE THE PROCESS IS DESCRIBED	**MEAN**
Overall	4.56
Survey Question: Assume you have been shopping for a new boat and have researched several boat brands either on the internet, by reading magazines, talking to friends, or visiting dealerships or boat shows. Assume you even went for a test ride. Further, assume you have researched the cost of boats in which you are most interested and have even requested a price quote from a dealer. Now you have decided you're ready to buy a new boat. Assume you have an acceptable price range in mind based on the boat and the options you want. What is different about this buying experience is that you can now purchase this boat online. First, I would like to understand how you feel about this concept before any descriptions of the possible process are offered. If you could purchase a new boat on the Internet today, and every part of the process such as delivery, trade-in, purchase price and service was satisfactory to you, how likely would you be to do this? Please use a scale of 0 to 10 with 10 being **EXTREMELY LIKELY** and 0 being **EXTREMELY UNLIKELY**.	

Likelihood of online purchase was measured a second time after the respondents were provided information about the merchant's process. This consumer education intervention addressed the following issues:

1. finding the right new product;
2. finalizing price;
3. trade-in/selling current boat;
4. financing the new product;
5. taking delivery of the new product;
6. service after the sale; and
7. communication after the sale.

Each aspect of the consumer education intervention was discussed with the respondents and each is explained in the following paragraphs. It should be noted that some of the transaction elements introduce options that are not available from the traditional dealer channel.

Locating a suitable boat containing the desired features/options might be accomplished in one of two ways: (1) custom building the product online in some fashion; or (2) scanning through the available inventory of one or more dealers.

Establishing/finalizing pricing is a two-step process. First, it is important to understand with whom the consumer would prefer to interact – dealer or manufacturer. Secondly, by what method/process would price be determined, e.g., "no-haggle", or a negotiation/offer of some sort.

With respect to trade-ins, a major difference between the automotive market and boat market revolves around the used product. In the automotive market, a highly developed, well-structured used vehicle system exists resulting in the easy disposal and/or sale of used products. Many automobile dealers are making more profit per vehicle on their used inventory than on their new inventory. Trading your "used" vehicle in on your new vehicle is an accepted and encouraged practice. In the boating industry, just the opposite is true. The used boat market is highly fragmented and many dealers would prefer not to take trades. The consumer preference is to

have a system similar to automobiles, i.e., the selling dealer sees the trade and offers a price. But close behind the first preference is market reality – "Sell the boat on my own".

Financing for marine products is another area that differs markedly from automotive. Many automobile manufacturers have their own financing arms as part of their business and, thus, are readily prepared to finance their new product. Most boat manufacturers have not vertically integrated into financing so boat dealers are forced to do for survival what auto dealers do for profit and/or competition – develop local relationships for financing. It is not surprising that by a substantial margin, consumers would prefer to obtain financing through their own sources. But in second place, consumers would prefer the automotive model (even though it doesn't exist) of obtaining a loan from the manufacturer.

Most consumers prefer taking delivery of a new boat either (1) at the dealership where it is purchased; or (2) at the buyer's marina or slip. For the former, a primary consideration is insuring that the boat can be properly towed. There is a slight preference for picking the boat up from the selling dealer. Interestingly, the second most popular response was to have the boat delivered to the buyer's driveway. This undoubtedly reflects a high proportion of repeat buyers in the sample population who would likely be more inclined to have towing issues already resolved.

Communication after the boat sale can be accomplished in several ways: email, phone, live chat, and in-person. Most preferred was a phone call at the time of boat selection. This alternative suggests that there may well be a call center role in developing this channel. Note also that the communication preference mean is much lower than earlier preferences signifying a likely role for consumer education as this channel is developed. Table 5 summarizes the means scores for consumer preference for each of the process features.

Table 5
Consumer Preferences for Online Boat Purchase

PURCHASE TRANSACTION ISSUE	CONSUMER PREFERENCE	MEAN/10
Finding the product	Search the online inventory from several dealers in my market area	7.22
Finalizing the price	Negotiate the price with the dealer of my choice	7.73
Trade-in/selling current boat	Have the dealer of my choice see my trade and offer a price	7.11
Financing the new product	Obtain a loan from my own bank, credit union, or other financial service	7.68
Taking delivery of the new product	I would pick up the boat at my selling dealer	6.83
Service after the sale	Use the dealer who delivered the boat	7.93
Communication after the sale	A phone call at a time I select confirming the details of my purchase including the boat, price, delivery, financing and service	4.31

Once the respondents understood the online purchase process, they were asked again their likelihood of buying the boat online. These results are shown in Table 6.

Table 6 **Likelihood of Internet Boat Purchase after Education**	
LIKELIHOOD TO PURCHASE A BOAT ONLINE AFTER THE PROCESS IS DESCRIBED	**MEAN**
Overall	5.28
Survey Question: Thinking about all of the options we just discussed related to buying a new boat on the internet, and **ASSUMING THAT MOST OR ALL OF YOUR PREFERENCES** for finding the boat, negotiating the price, taking delivery, arranging for financing, and obtaining service were met, how likely would you be to purchase a new boat on the Internet? Please use a scale of 0 to 10 with 10 being **EXTREMELY LIKELY** and 0 being **EXTREMELY UNLIKELY**.	

RESEARCH ANALYSIS AND RESULTS

The overall mean of 4.56 (on a 0-10 scale) suggests a relatively low interest in purchasing a boat online that improved somewhat (5.28) after some education on the online purchasing process. An analysis of the distribution of the responses reveals two distinctly different groups – Group 1 (nearly 34% of the sample) are those with virtually no interest in the concept of purchasing a boat online. This group responded with a 0, 1, 2, and 3. Group 2 (over 43%) are those with a highly favorable attitude toward an online purchase. This group responded with a 7, 8, 9, and 10. The distribution of the entire sample is shown in Table 7.

Table 7 **Response Distribution for the Initial Likelihood of Online Purchase**		
0-10 Ratings	**Total %**	
0	21.2%	Low interest in the online boat
1	2.7%	
2	5.4%	
3	4.5%	
0-3 (Subtotal)	33.8%	
4	4.6%	
5	12.3%	
6	6.2%	
4-6 (Subtotal)	23.1%	
7	10.4%	High interest in the online boat
8	14.1%	
9	6.7%	
10	11.6%	
7-10 (Subtotal)	43.1%	

This split of the sample into low and high initial interest in online boat purchase was used in testing the hypotheses. The two groups together are 77% (1,234) of all respondents. The

personality types for each group were examined. Table 8 shows the distribution of the personality types for the low and high initial interest groups. Comparison of the low and high initial interest groups reveals a highly significant relationship between personality type and initial interest in purchasing a boat online (χ^2=500.44; p<.0001).

Table 8
High vs. Low Interest Groups by Personality Types

PERSONALITY TYPE	OVERALL STUDY (N=1606)	HIGH INTEREST IN PURCHASING BOAT ONLINE (N=691)	LOW INTEREST IN PURCHASING BOAT ONLINE (N=543)	TOTAL
PEBCAK (Problem Exists Between Chair and Keyboard)	30.5% (490)	7% (49)	57.8% (314)	29.4% (363)
Conservative	10.0% (161)	5.5% (38)	15.8% (86)	10% (124)
Moderate	31.1% (499)	39.6% (274)	17.9% (97)	30.1% (371)
TECI (Technology Experienced Curious Innovator)	28.4% (456)	47.7% (330)	8.5% (46)	30.5% (376)
TOTAL	100% (1,606)	100% (691)	100% (543)	100% (1,234)
(χ^2=500.44 – p<.0001)				

The Goodman-Kruskal index of predictive association of interest in purchasing a boat online from personality type is .8136 illustrating the high relevance of personality type in predicting the online purchase. Therefore, there is support for H_1, personality characteristics impact the likelihood of purchasing online.

Next, these two groups were examined for differences in their risk perceptions. Table 9 contains the mean scores for the two groups with respect to each of the risk factors. T-tests were conducted and the mean scores between the two groups were statistically different on every risk statement. The Low Interest group sees the online boat purchase transaction as a significantly riskier proposition across every trust and risk issue measured. Therefore, there is support for H_2, perceived personal risk impacts the likelihood of buying online.

Table 9 Online Purchasing Concerns and Personal Risk Means High vs. Low Interest Group Comparisons and T-Test Results				
PURCHASING BOAT ONLINE CONCERNS AND PERSONAL RISK	**OVERALL SAMPLE MEAN**	**HIGH INTEREST IN PURCHASING BOAT ONLINE MEAN**	**LOW INTEREST IN PURCHASING BOAT ONLINE MEAN**	**T-TEST (PROB)**
Disclosure of financial/personal information in unknown environment	7.22	5.46	8.27	19.189 (p<.0001)
How the purchase process would work	6.51	5.82	7.30	10.107 (p<.0001)
Issues with the product (seeing, touching, meeting expectations, etc.)	5.28	4.08	6.53	16.731 (p<.0001)
Dealing with website/dealer I don't know	6.62	6.11	8.19	14.204 (p<.0001)
The actual payment transaction	5.96	5.57	6.36	5.395 (p<.0001)
Personal risk of online boat purchase	5.44	4.96	5.82	5.873 (p<.0001)

It is also insightful to recognize which trust and risk items are of concern to each group as this provides additional understanding regarding the specifics of the risk hierarchy. For example, the High Interest group is most concerned with "Dealing with website/dealer I don't know" and least concerned with "Issues with the product (seeing, touching, meeting expectations, etc.)". In other words, the High Interest group displays characteristics of individuals with channel familiarity, i.e., concern about completing a transaction with an unknown/lesser known entity (store, dealer, website, etc.) but generally not having concerns about the product itself, the payment transaction, or disclosing financial/personal information.

The Low Interest group demonstrates all of the characteristics of a consumer about to enter a channel with which they have no familiarity. This includes being most concerned about "Disclosure of financial/personal information in unknown environment" and "Dealing with website/dealer I don't know". They are more concerned about "How the purchase process would work" than they are about "The actual payment transaction" because the payment transaction is not typically going to take place for them. These results reemphasize the necessity for consumer education as part of the process of selling a major durable like a boat in the online channel.

Once respondents better understood the process for buying a boat online, they were queried again as to their likelihood to purchase. Table 6 shows that the mean likelihood for purchase on the internet is .72 points higher after the process is described than prior to the process being described. Comparing the means reveals this is a significant difference ($p<.0001$). This result shows that an educational process can improve consumers' willingness to buy online.

Two tests were performed for examining the ability of consumer education to overcome the initial attitude toward online purchases associated with personality types (H_3). First, a comparison of the mean scores on the likelihood of buying a boat online before and after the

education intervention was conducted. The results are shown in Table 10. For every personality type there was an increased likelihood of buying online following the education and this difference was statistically significant. Therefore, there is evidence that consumer education can influence every personality type to be more open to buying online.

Table 10
Mean Scores on Likelihood of Purchase
Before and After the Education Intervention by Personality Type

PERSONALITY TYPE	BEFORE MEAN	AFTER MEAN	MEAN DIFFERENCE	STD ERROR OF THE MEAN DIFFERENCE	T-VALUE
PEBCAK	1.92	1.99	.069	.011	6.038
Conservative	3.09	3.35	.261	.037	7.073
Moderate	5.47	6.23	.760	.029	26.056
TECI	6.91	8.45	1.539	.168	9.167
All	4.56	5.28	.720	.051	14.154

The magnitude of the mean differences ranged from a low of .069 for the PEBCAK personality to a high of 1.539 for the TECI personality group. ANOVA tests were run to examine differences among the personality types in responding to consumer education. The differences after the education intervention remained statistically significant. This indicates that despite improvements across all personality types that the improvements did not eliminate the effect of personality on the likelihood of buying online. Therefore, there is support for $H_{3.}$ The results of the ANOVA are reported in Table 11.

Table 11
ANOVA Results for Personality Types after the Education Intervention

	Sum of Squares	Degrees of Freedom	Mean Square	F-Value
Between Groups	10933.139	3	3644.380	536.011
Within Groups	10892.112	1602	6.799	
Total	21825.250	1605		

DISCUSSION

The role of personality and perceived risk in online purchase behavior is well-documented. This study's findings support the growing body of literature on these two variables on the consumer's willingness to buy online. An important question for extending the body of knowledge is determining the extent to which consumer education can overcome the reluctance to buy online. Separating consumer education from consumer experience is challenging and, therefore, the product chosen for this study was a product that is sold online infrequently. The consumers in this sample may have had experience in buying this product but none had any experience with buying this product online. Furthermore, the high involvement and high risk characteristics of this product would create additional barriers to buying this particular product

online even if the consumer had some experience with online buying. Therefore, this study minimizes the overlapping of consumer experience with consumer education.

In this study, the consumer education was directed at specific risk factors. These risk factors included all parts of the purchase transaction: search, price negotiation, trade-in, financing, delivery, and after sale service. Through education, the consumer learned how each of these parts of the purchase transaction would be addressed in the online shopping environment. Education provides an opportunity for reducing the consumer's perception of risk. The results indicate that education that moderates the risk perception can increase consumer's willingness to buy online even though they have no previous experience buying this particular type of product online.

The role of personality is revealed as a significant influence even when consumer education that moderates the risk factors is provided. The personality traits of technology, curiosity and openness to new experiences remain key determinants of how effective consumer education can be. Those who are more curious, willing to try new experiences and technology savvy are more likely to change their attitudes when provided with information that directly addresses their concerns about the purchase transaction. These were the personality types that populated the group that showed initially a high interest in buying this product online. One could argue that this group was more receptive to learning because they had an interest in buying online. Therefore, education that directly addressed their concerns will be incorporated more easily and quickly into their attitudes toward buying online.

In contrast, the low interest group was heavily populated by personalities that were not as comfortable with technology, were less open to new experiences and less curious (73%). Changing their attitudes toward online buying may require a longer education process than was used in this study. The mental distance to be overcome is much greater.

By looking at the degree of change before and after the education intervention, the close connection between personality type and willingness to buy online becomes evident. The range of change possible with a short education program is severely impacted by personality type. The mean difference for the least technologically savvy, least open to new experience and least curious personality type was less than 10% of the highest technologically savvy, most open to new experience and most curious personality type. Although the change in attitude toward online buying was statistically significant for every personality type, the final attitude states for the PEBCAK and Conservative groups were still unlikely to be sufficient to result in online buying by these two groups. However, one could see that the TECI personality type is highly likely to buy online (moving from a mean of 6.91 to 8.45). Even the Moderate personality type had moved across the 50% threshold toward likely to buy online. Education, even in the absence of personal experience, can address barriers to buying online for some personality types.

Practical Implications

While the above data demonstrates a clear relationship between trust/risk and willingness to purchase online, this would be a complex variable for a marketing manager in the marine industry to target. Of considerably higher value would be either a specific consumer demographic, a particular type of boat, or a behavioral and/or lifestyle characteristic that could

be easily targeted. However, an examination of geographic, gender, age, and buyer type (1st time versus multiple purchases) differences between the High and Low Interest groups uncovered no significant differences.

Distribution channels ultimately have to support both positioning and brand strategy. New channels must be carefully considered in this context. The new boat market has shifted considerably in recent years moving away from stern-drive product to outboard aluminum models and overall boat sales are mostly flat worldwide. But the reality is that the consumer purchase decision process for boats continues to be in the multi-month range (as opposed to automobiles – typically less than 30 days) and is primarily driven by boat shows and visits to dealerships. The internet offers the same advantages for boats that it offers for automobiles: 1) speedier access to product information; 2) current new and used inventory; and 3) comprehensive pricing information. But more importantly in the case of boats, it offers an opportunity to move the consumer buying process along more rapidly.

How might a dealer or boat manufacturer take advantage of the information provided in this study? First, this research positively indicates that a substantial percentage of boat owners are highly interested in an online boat-buying process. It further demonstrates that those most likely to be interested can be readily identified. A simple form such as is illustrated in Table 12 can be utilized to gather information from potential customers in any venue, e.g., boat shows, boating events, dealership visitors, or even website visitors. It could also be emailed to current customers. Those whose score exceeds 40 would be prime candidates for becoming engaged in an online boat transaction.

However, those respondents whose score is less than 40 are not throwaways. They simply are less likely to want to purchase a boat online. A direct mail campaign might easily direct respondents scoring over 40 to a specific website while those respondents scoring less than 40 would be invited to a dealership "event".

Table 12: Personality Type Data Collection Instrument

For each of the following statements please indicate to what degree this statement describes you.
Please use a scale of 0 to 10 where a 10 means you **COMPLETELY AGREE** with the statement and 0 means you **COMPLETELY DISAGREE** with the statement.

SCORE

a) ____ I have taken things apart to see how they work.
b) ____ I know how to use a computer.
c) ____ I love scary rides at theme parks.
d) ____ I love to play computer games.
e) ____ I love technology.
f) ____ I would love to travel in foreign countries.
g) ____ I know how to "surf the net".
h) ____ I will try anything once.

Which boat brand do you currently own? ___A ___B ___C ___D ___E
____ Don't currently own product but am considering brand(s): _____

LIMITATIONS AND FUTURE RESEARCH

This research has attempted to explore how education can change attitudes toward online buying for a high risk, high involvement product that is not currently sold online. Several limitations regarding this research must be noted. First, it has focused on a single major durable recreational good (power boats) sold in a specific geography (U.S.) and has only considered a few relevant variables (trust and risk, selected demographics, buyer type, boat type, and personality types). Second, the education intervention was limited in duration and in risks addressed. There are several ways that this research might be extended.

First, there are numerous potential elements that were excluded in this analysis that may possibly impact this decision. For example, motivation and the use of the product may also influence the willingness to buy online. For individuals who fish, the boat (and boating) are just means to an end. Others boat to spend time with friends or family or just escape the everyday stress of life. This analysis does not include an assessment/impact of motivation or product use. Second, this study provides little insight into understanding why consumers of major recreational durables are drawn to the internet channel as a purchase option. For example, there was no attempt to understand any respondent's current level of internet purchase activity and its impact upon channel acceptance. A study could extend this research by exploring the interaction of previous experience with online purchasing generally and education about the process of purchasing a product that has not been sold online. Third, because power boats are sold all over the world, these findings should be validated on a less geographically restricted sample of boat owners. Lastly, this study only focuses on a single major recreational durable product – power boats. There are numerous other products (recreational and non-recreational) that this could be extended to (e.g., kitchen appliances, ATVs, sport utility vehicles, washers and dryers, snowmobiles, motorcycles, and jet skis).

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