Effects of Demography on Opportunistic Product Return Behaviors in E-Commerce

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EFFECTS OF DEMOGRAPHY ON OPPORTUNISTIC PRODUCT RETURN BEHAVIORS IN E-COMMERCE

By

NIKHILA ANAND

A thesis submitted in partial fulfillment of the requirements for the Honors in the Major Program in Marketing in the College of Business Administration and in the Burnett Honors College at the University of Central Florida Orlando, Florida

Spring Term 2021

Thesis Chair: Carolyn Massiah, Ph.D.
ABSTRACT

College student consumers are an increasingly important segment for marketers and scholars, particularly with the advent of online shopping. This research aims at exploring the effect of college students’ decision-making styles on online purchase and return behavior. An online questionnaire survey was conducted on 1100 college students at the University of Central Florida to understand how respondents’ return behavior changed with various scenarios and demographic factors. Analysis shows that scenarios involving late arrivals are the highest drivers of returns, while guilt and post-purchase regrets drove far fewer returns. Statistically significant differences in return behavior were found between demographic groups. Notably, this research identified the conditions under which these patterns in return behavior hold true, uncovering clusters of respondents who behave in characteristically similar or different ways. By understanding the factors that drive college students to return online purchases, companies can more efficiently and profitably serve this growing segment of consumers.
ACKNOWLEDGEMENTS

I would like to thank Carolyn Massiah for being an amazing Chair and helping me find passion in every facet of consumer behavior. I aspire to follow in her footsteps one day, and if I can become an ounce of the powerful leader, mentor, and professor that she is, I will consider myself lucky. It was a true honor to work for her these past years.

Neel Patel, for offering the world’s worth of support, encouragement, and pushing my research beyond the bounds of my head.

Hema Anand and Anand Dorai, for always encouraging me to follow my heart and choosing my college major that I have fallen so deeply in love with.
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INTRODUCTION

Product return behaviors in traditional brick and mortar stores have been studied extensively in the consumer behavior area of Marketing. In contrast, product return behaviors in e-commerce has little research. With the e-commerce booming in today’s world, and a plethora of products being shipped to our door at just a click of a button, returns are increasing as well. I aim to explore the reasons why people purchase products that they believe offers highest personal utility to them and subsequently decide to return these items.
BACKGROUND & SIGNIFICANCE OF RESEARCH

Product returns cost manufacturers in the United States approximately 100 billion dollars annually in lost sales through re-boxing, restocking, and reselling (Petersen & Kumar, 2018). This reduces total profits by over 4% each year (Petersen & Kumar, 2018). These numbers show how much returns have an impact on the well-being of a business, reducing profits that the company could otherwise retain and reinvest in itself. E-tailers are taking serious criticism for their lenient return policies, since they can be abused in ways that dissolve profit (i.e., consumers take advantage of return policies to deliberately return products). However, stricter return policies simply won’t be the solution (Pei & Paswan, 2018) as customers don’t find these policies acceptable. If we view this situation from the consumer’s perspective, we see that most product returns are because the purchase doesn’t offer enough value, with occasional outliers who commit return abuse or “friendly fraud”.

The primary goal of this research is to analyze consumer behavior and understand how their decision-making process at the time of purchase ultimately ends up in returning the product. The rational choice theory states that individuals make logical choices that provide them with the highest personal utility (Camerer, 2002). If an individual takes the time to read all of the information provided before a purchase and it fits their rationale, then they will likely go through with the purchase. Similarly, the Engel, Kollat, and Blackwell (EKB) model states that individuals make decisions in a succession of stages finally arriving at the conclusion. Taking a slightly different lens, the signaling theory states that signals emitted in one’s environment can attract or deflect from approaching something or taking action. In many ways, these theories intertwine with each other, and each offers a different perspective on thinking about whether a product is a good fit and then purchasing said item.
The literature review shows that there is minimal research on return behaviors, and particularly limited research in how these behaviors vary by demographics, or how documented theories could play a key role in reducing return behaviors. There is early (and often anecdotal) evidence from marketers that avoiding misinterpretation and increasing consumers’ understanding of a product may lead to a reduction in returns. Similarly, companies have reported success in targeting specific groups of people to cater to their expectations and needs.

Our goal is to understand how rational choice theory applies to return behavior in various scenarios, and supplementing this with EKB and signaling theories of decision making. We’re interested in this decision-making process, but we’re particularly interested in how the process changes across demographics of age, race, education level, and socioeconomic background. These decision-making processes and demographics will be surveyed in a quantitative study of college students in the 17–25-year-old age group. Our ultimate goal is to understand the influence of rational choice theory on college students’ online purchases, and why those decisions lead to return behaviors.
SUMMARY OF LITERATURE

Because of improved living standards and purchasing power, we have become more conscious of the quality of products. Advances in online media and advertisements also make possible quick information gathering and dissemination. The convenience of e-commerce is changing consumer purchase behavior and bringing out new forms of return behavior that haven’t been researched in the traditional brick-and-mortar setting. This study intends to understand the college student consumer decision-making leading to return behaviors.

Behavioral Economics-Past, Present, Future

The history of behavioral economics and how it lies in the shadows of other subjects such as psychology and neuroscience is crucial in understanding the past, present, and future. Behavioral economics empirically approaches two practices- (i) explicitly modeling limits on rationality, willpower and self-interest; and (ii) using established facts to suggest assumptions about those limits (Camerer, 2002). This is what is very intriguing; as humans we have the ability to be attracted to a product or service for a plethora of reasons apart from first impressions but, the rationale and willpower to bring it into our lives is an immediate chain reaction from the initial thought. First impression and attraction towards an item is the catalyst that sends us into the mode where our brains analyze how much value that item truly brings into our lives. The Rational Choice Theory- assumes that individuals make prudent and logical decisions that provide them with the highest amount of personal utility. Self-interest can overwhelm the human mind from making rational choices.

Camerer references a crucial theory that plays a huge role in opportunistic return behaviors. While the rational choice theory offers evidence that humans will innately purchase
items that offer the most value to them, it doesn’t take into account age, gender, level of
education, socioeconomic status that may very well play a role or hinder the decision-making process.

Consumers’ Legitimate and Opportunistic Product Return Behaviors in Online Purchases

Online return behaviors primarily focus on re-patronage intention. Re-patronage intention is when a consumer will likely repeat a purchase after purchasing an item they were satisfied with. This research empirically differentiates consumer return behaviors into two categories—opportunistic return behaviors and legitimate return behaviors. Product compatibility would relate to a legitimate return behavior because the product simply does not offer the level of satisfaction one would have assumed it would be; the product itself is simply not desired for that particular consumer. Social group influence would be considered as an opportunistic return behavior. Simply put, people are influenced by other people and social groups can easily persuade into negatively viewing a product which bears the group thought. A qualitative study was conducted with in-depth interviews of a small group of people. With the literature reviews exemplified in this paper along with the study results, it was concluded that personal attitudes, subjective norms and other behavior control variables influence consumer product return behaviors (Pei, Paswan, 2018).

A lot of the factors such as perceived risk and impulsiveness relate to developing post-purchase dissonance.
Cultural Impacts on Cognitive Dissonance and eWOM/eNWOM

Based on how collective and individualist culture played a role in the internet purchase process, cognitive dissonance after purchase and how eWOM (online word of mouth) and eNWOM (online negative word of mouth) affects post-purchase behavior. Cognitive dissonance is defined “as a psychological uncomfortable state that leads to efforts to reduce dissonance” (Elliot Devin, 1994; Festinger, 1957). This will most likely occur when a customer is concerned about a product. eNWOM increases cognitive dissonance since it inadvertently creates concern over an undesired product. On the other hand, consumers find eNWOM to be trustworthy compared to eWOM because a marketer can easily inflate the value of their products with lots of positive comments. References to how western culture (more of an individualistic culture) purchases items are based on independent thought. In contrast, eastern countries (collectivist cultures) make purchases based on interdependent thought.

Consumers are more likely to return an item simply because the negative ratings outweigh the positive value of a product. Collectivist and individualistic thought paired with age, gender, and education level is correlated with rational decision-making. The need of many can out weigh the need of one and consequently affect purchase and return behaviors. The idea that culture may also be the direct source of word of mouth could very well affect purchase behavior; collectivist cultures like in China or India, purchase items that only entire family can benefit from- it’s an “our” purchase as opposed to “mine.” It also relates to how risk-averse people are when it comes to investing and saving.
Online Apparel Shopping Behavior

This research examines how many predominant factors in our life affect shopping behavior in consumers. It is apparent that many people are opting to stay at home and purchase items at the convenience of clicking a button and saving time. This research yields to the Engel-Kollat-Blackwell Consumer Purchase Behavior Model which archaic in context, but offers valuable comparison to the contemporary lifestyle we all live. The model states that consumers a succession of stages prior to making a purchase decision (Chen, Lee, Wu, Sung, 2012). Online purchases help the decision-making process because it offers customized information. A study conducted focuses on how online consumer information directly affects consumer purchase behavior. With the analysis of perceived risk, demographics and even using regression analysis on information search, results showed that consumers relied on new manifestations of online information such as reviews and online e-word-of-mouth to make a purchase that provides high personal utility (Chen, Lee, Wu, Sung, 2012). Information through pictures and even enhancing with online salespersons has proven effective in the decision-making process. The EKB model shows that people can comprehend that even though technology has outweighed the historic nature of the brick and mortar ideology, people still engage in a very procedural decision-making process when it comes to online purchases.

Some consumers are risk averse in making purchases online and even dubious in nature with trusting the retailers; one can understand how they make choices based on all of the available information given to them from outside sources. The EKB model inadvertently offers evidence that humans filter through the information and signals provided for us to make rational choices. If signals and product information are misconstrued this could lead to higher levels of
opportunistic return behaviors. The level at which information is analyzed could also depend on factors like age, gender, and educational backgrounds.

*Cyber Peers’ Influence for Adolescent Consumer in Decision Making Styles and Online Purchasing Behavior*

The ease of online shopping shapes purchase behavior in adolescents and how peer influence also plays a role as a moderating variable. “Adolescents are easily affected by current fashions and trends, their peers, and several peculiar consumption characteristics (McAlister Pessemier, 1982).” We are naturally gravitated towards items that are quote-on-quote “popular.” The definition of adolescents from multiple sources such as the World Health Organizations (ages 10-20), The United Nations (ages 15-24), but broadly we can assume that young people from the ages of 10-30 could be seen as adolescents. This study considered young people between the ages of 16 and 30 who may be frequent online shoppers and are heavily influenced by their peers. The lifestyle/psychographic approach talks about how people live and locate their money which is reflected in their activities and the things that they are interested in. The consumer typology approach studies consumer types and how that relates to shopper taxonomies and behaviors. The consumer characteristic approach suggests that psychological orientations and identifying affective and cognitive orientations is related to consumer decision making. There is also a component in this article that the author defines as a moderating variable which is normative social influence. Especially in adolescents, interpersonal relationships and behaviors are deeply shaped by their peers. In adolescents, these friendships are essential in recognizing social status and exerts social influence. Social influence plays a huge role in consumer behavior, but it also affects a person’s evaluation of products. Peer influence as a normative social
influence-refers to one person submitting to other people’s expectations. This plays a huge role in their purchasing behavior. An online survey was conducted on 2,419 adolescents and the results states that online shopping sites should be targeting adolescents since they are a huge demographic that could bring in tons of revenue. With the premise of planned (or rational) purchasing behavior and the assumption of rational economic behavior, this study finds that product brand, product price, and product quality are effective predictors of adolescent purchasing behavior.

This article highlights the shopping behaviors that most teenagers assume on in the 21st century. This study focuses on how purchasing items that social groups approve and reject can lead to unfavorable return behaviors. Consumers are innately influenced by their peers and in turn, their purchasing habits shift and mold according to the normative social influence. It is interesting to see how the idea of wanting to be unique completely changes when a group of peers influences our purchase behavior. It is also interesting that peer influence actually plays such a huge role in individualistic societies where the goal is to fulfill our own desires.

*Individual Differences in Online Consumer Behaviors in Online Consumer Behaviors in Relation to Brand Prominence*

Brand prominence defines the conspicuousness of a brand on a product. Factors such as age, race, education and household incomes play a role in the future of brand prominence. The signaling theory, which was in the literature review, is defined as the impact of the quality of communication during transmission plays a role in the accuracy of reception. Noise factors disrupt effective transmission and reception. Today, signaling theory has been utilized by academic researchers to understand efficiencies for marketers and advertisers to signal product
attributes to consumers through branding, packaging, warranties, and so on (Schulz, Dority, Schulz, 2015). Recently, this theory has been used as a means to interpret signaling among consumers. So this article is analyzing how consumers signal aspects of their identity to others through the use of brands and products. This also takes into the accounts of the various categories consumers are sorted into such as race, income, education, etc. In regards to brand prominence and taxonomy of consumers, those who are classified as patricians have a high level of wealth but have no care to purchase from brands with lower level of prominence. On the other hand, consumers classified as parvenus have both a high level of wealth and need to show-off their status. A study was conducted by the researchers which builds on brand prominence but also focuses on other antecedents that may drive purchasing behavior. They conducted a survey of 300 adults in the US with the sample of 54%, female, 17% nonwhite, and 57% are married. The average age of the participants is 42 years old with a household income of about $60,000. They used three brands: Abercrombie Fitch, Lacoste, and Armani. For each brand, one photographic stimulus displayed the brand logo prominently whereas the other did not (Schulz, Dority, Schulz, 2015) and the individuals were asked to choose between the two options. In terms of overall brand prominence in behavioral intentions, about 45% of the adults in the sample prefer the clothing article with a visible logo (i.e., the louder signal) in the brand presence condition. However, only 23% of the sample preferred the clothing article with the larger logo in the brand size condition, 21% chose the article with the full logo in the brand abbreviation condition, and 15% chose the article with three logos in the brand frequency condition (Schulz, Dority, Schulz, 2015). They also ran a two-tailed test which resulted in adults with less than a college degree all are more likely than their counterparts to prefer brands displayed prominently (Schulz, Dority, Schulz, 2015).
The results exemplified that those with less than a college degree, and low income prefer for their brands to displayed prominently. They look for signals that relate with their ideology and way of life which in turn influences their shopping and return behaviors. Also, the reference to the classification of consumers as patricians and parvenus is intriguing when you take into account race.
METHODOLOGY

This study involved a quantitative survey of college students, focusing on their purchase and return behavior (and associated decision-making process) in various scenarios. The survey was administered through the Qualtrics platform, and survey participants were drawn from undergraduate students at the University of Central Florida. The online survey was open for five days, with a total of 1037 valid and fully completed surveys were collected.

Survey Outline

The survey began with the following context: *It is now time for you to find an internship in your career field. You decide to order a business suit online 2 weeks prior to The Career Expo*. The participant was then given one of the four following scenarios: the suit arrives late, the suit is available for cheaper in a local store, friends comment that the suit does not look good, or you feel guilty about spending money on the suit.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;cheaper in store&quot;</td>
<td>At the same time that the suit arrives, you end up finding the same suit in a local brick-and-mortar store for a cheaper price.</td>
</tr>
<tr>
<td>&quot;looks bad&quot;</td>
<td>When the suit arrives, your friend tells you that the suit does not look good on you.</td>
</tr>
<tr>
<td>&quot;arrived late&quot;</td>
<td>The suit arrives one day after the Career Expo.</td>
</tr>
<tr>
<td>&quot;felt guilty&quot;</td>
<td>When the suit arrives, you feel guilty about spending the money for the suit.</td>
</tr>
</tbody>
</table>
Next, participants were each asked questions about their post-purchase behavior and thought process, including: how satisfied they are with the suit, how wise the purchase decision was, how likely they are to keep or return this specific item, and how likely they are to keep or return items in general.

The first question (“how satisfied are you. . . ?”) was scored on a 7 point Likert scale with the options “Extremely dissatisfied”, “moderately dissatisfied”, “slightly dissatisfied”, “neither satisfied nor dissatisfied”, “slightly satisfied”, “moderately satisfied”, and “extremely satisfied”. The remaining questions were also on a 7-point Likert scale, with the options “strongly disagree”, “disagree”, “slightly disagree”, “neither agree nor disagree”, “slightly agree”, “agree”, and “strongly agree”. These scales were converted into numerical values, with -3 representing the lowest score on the 7-point Likert scale, 0 representing the middle score, and +3 representing the highest score.

In addition to these questions about the purchase and decision process, respondents were also asked demographic questions, including age, gender, ethnicity, major, and socioeconomic status.
RESULTS

The results and analysis fall into three sections: 1) differences in return behavior by scenario, 2) differences in return behavior from other major demographic factors, and 3) automatically identifying exceptions to these rules (subgroup analysis).

Analysis by Scenario

The first portion of analysis involves identifying the differences in online return behavior relative to various scenarios. Respondents were told they bought a suit but were unhappy for one of the following reasons: 1) they found a cheaper suit in a local store (“cheaper in store”), 2) a friend told them the suit looks bad (“looks bad”), 3) the suit arrived late (“arrived late”), or 4) they felt guilty for spending money on the suit (“felt guilty”). For this discussion, we will refer to these scenarios by their abbreviated labels of “cheaper in store”, “looks bad”, “arrived late”, or “felt guilty”. 
The primary method of analysis was comparing responses to “How satisfied are you with the suit you ordered online?” by scenario. Responses to this question were given on a 7-point Likert scale from “extremely dissatisfied” to “extremely satisfied”, and this 7-point scale was assigned point values from -3 to 3. This scale was chosen so that 0 represents a neutral “neither satisfied nor dissatisfied” response. By assigning point values to each of the 7 Likert scale values, it is possible to compute the “average” response to the “how satisfied are you” question on a -3 to 3 scale.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>How satisfied are you with the suit you ordered online?</td>
<td>7 point Likert scale with the options “Extremely dissatisfied”, “moderately dissatisfied”, “slightly dissatisfied”, “neither satisfied nor dissatisfied”, “slightly satisfied”, “moderately satisfied”, and “extremely satisfied”</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - My choice to purchase this suit was a wise one</td>
<td>7 point Likert scale, with the options “strongly disagree”, “disagree”, “slightly disagree”, “neither agree nor disagree”, “slightly agree”, “agree”, and “strongly agree”</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - I think that I did the right thing when I purchased this suit online</td>
<td>Same as above (7 point Likert scale from &quot;strongly disagree&quot; to &quot;strongly agree&quot;)</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - This online store is exactly what I needed for this suit</td>
<td>Same as above (7 point Likert scale from &quot;strongly disagree&quot; to &quot;strongly agree&quot;)</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - I would return the item</td>
<td>Same as above (7 point Likert scale from &quot;strongly disagree&quot; to &quot;strongly agree&quot;)</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - I would keep the item</td>
<td>Same as above (7 point Likert scale from &quot;strongly disagree&quot; to &quot;strongly agree&quot;)</td>
</tr>
<tr>
<td>What do you think about the suit that you purchased online? - I do not usually return items</td>
<td>Same as above (7 point Likert scale from &quot;strongly disagree&quot; to &quot;strongly agree&quot;)</td>
</tr>
<tr>
<td>What is your age?</td>
<td>Numerical</td>
</tr>
<tr>
<td>Please specify your ethnicity</td>
<td>Multiple choice (see appendix)</td>
</tr>
<tr>
<td>Please specify your major</td>
<td>Multiple choice (see appendix)</td>
</tr>
</tbody>
</table>
As shown in Figure 1, the “arrived late” scenario had the lowest satisfaction score, with respondents rating it an average of -1.6, corresponding to a value between “moderately dissatisfied” and “slightly dissatisfied”. The scenarios of “looks bad” and “cheaper in store” had average satisfaction scores of -0.5 and -0.4 respectively, corresponding to a value between “slightly dissatisfied” and “neither satisfied nor dissatisfied”. Finally, the “felt guilty” scenario had an average satisfaction score of 0.9, indicating an average response of “slightly satisfied”.

We used difference-of-two-means to confirm the validity of the differences between these scenarios. The difference-of-two-means test was first used for a one-vs-rest test, comparing the average satisfaction value within each scenario to the average satisfaction value outside of each scenario. These tests confirmed that the “arrived late” scenario has a statistically significantly lower satisfaction score than others, while the “felt guilty” scenario has a statistically significantly higher satisfaction scores.
**Analysis by Demographic Factors and Cramér’s V Comparison**

To apply the difference-of-two-means test, we had to convert the distribution of Likert scale responses (a histogram with 7 bins) into a single average value by mapping each bin to a point value from -3 to 3. This was very useful for initial analysis, but we were concerned that we were losing information about the distribution and spread of values. For example, a polarizing scenario where 50% of respondents answered with “extremely dissatisfied” and 50% of respondents answered with “extremely satisfied” would have an average satisfaction point score of 0, while a neutral scenario where 100% of respondents answered with “neither satisfied nor dissatisfied” would also have the same average satisfaction score of 0.

![Figure 2: Average satisfaction scores by demographic factor](image-url)
One solution would be to include the standard deviation of responses in our analysis, but since the response values were discrete rather than continuous, we opted to run chi-squared tests comparing the distributions of values between scenarios. We used these chi-squared tests to establish statistically significant distributions in patterns of satisfaction. We then used Cramér’s V statistic to standardize the chi-squared test scores onto a 0 to 1 scale (inclusive). While the chi-squared tests allowed us to see if a specific categorical factor (like scenario, gender, or age) had an impact on return behavior, the Cramér’s V tests allowed us to compare between these categories.

In addition to the differences identified by scenario, this analysis identified major differences in return behavior by ethnicity, gender, and college major, shown in Figure 2. Age had limited impact on return behavior. Within ethnicity, we observed that respondents identifying as “Asian/Pacific Islander” or “Black or African American” had slightly higher satisfaction scores (-0.2 and -0.1, respectively) while respondents identifying as “White or Caucasian” had slightly lower satisfaction scores (-0.5). By gender, we found that female respondents tended to give much lower satisfaction scores (-0.8) than males (-0.2). By college major, our analysis identified that “Pre-Accounting” majors gave the lowest satisfaction scores on average (-0.7) while “Pre-Economics” majors gave the highest scores (an average of 0.0). Our use of Cramér’s V allows us to compare our chi-squared test results, demonstrating that scenario has the largest impact on return behavior, followed by gender, ethnicity, and college major, with minimal differences by age. This avenue of investigation is ongoing.

This analysis also identified some small data artefacts that were interesting, while not experimentally useful. One such insight was that respondents who took under 2 minutes to
answer the entire survey gave statistically much higher satisfaction scores. This analysis involved finding the distribution of satisfaction scores relative to response time, and finding cut points in this distribution to maximize the difference between groups. In other words, we took the spectrum of response times and divided that spectrum into groups of respondents such that each group of respondents behaves differently with respect to return behaviors. We feel this approach of finding maximally different cut points can be useful in many surveys and questionnaire-based approaches.

*Subgroup Analysis and Exceptions to the Rule*

The previous section established that factors of scenario, gender, ethnicity, and college major can have large impacts on return behavior. We have shown that these patterns hold true across the average of all respondents and are statistically significant; exceptions to these patterns might still occur. To identify possible exceptions to these patterns, we performed automated subgroup analysis. For every possible attribute in our dataset, we filtered down to each level in the attribute. This yielded a dataset with only Gender=Male responses, a dataset with only Gender=Female responses, a dataset with only Scenario=’arrived late’ responses, etc. We generated thousands of possible datasets from every attribute and level, but further extensions of this work could use combinations of these levels (discussed further below).
After automatically identifying these thousands of “subgroup” datasets, we automatically applied the same analysis as the previous two sections. This analysis involved looking for patterns in return behavior relative to scenario and demographics, but only within each subgroup. We could then automatically identify how the patterns present in each subgroup compared and contrasted to the patterns in the overall dataset, allowing us to identify interesting exceptions. This analysis is ongoing, but a summary of interesting exceptions are presented below. Because of the automated nature of this approach, a remaining challenge is identifying and visualizing the most interesting exceptions.

This analysis yields two sets of findings for every pattern in the previous sections: “stronger patterns” and “reversed patterns”. Stronger patterns are patterns that are present in the dataset as a whole but are revealed to be even stronger within a subgroup. Reversed patterns, on the other hand, show differences in the opposite direction within a subgroup as compared to the entire dataset.
For example, one of the first patterns we found was that by scenario, “arrived late” respondents are less satisfied, and have average satisfaction scores of 1.6 points lower than other respondents. We found that this pattern was even stronger within groups like “Black or African American” respondents (where “arrived late” respondents had an average satisfaction score of 2.04 points lower than other respondents), as shown in Figure 3. Interestingly, African American respondents and overall respondents had similarly low satisfaction scores for the "arrived late" scenario, but African American respondents had slightly higher satisfaction scores for the other scenarios.

On the other hand, we identified that 16-to-21-year-old respondents had slightly lower satisfaction scores across the dataset (0.23 lower than other respondents); however, within the “looks bad” scenario, this pattern was reversed, where 16-to-21-year-old respondents had higher satisfaction scores (by 0.32 points) than other groups, as seen in Figure 4.

This indicates that 16-to-21-year-old respondents are even less impacted by the “looks bad” scenario than other groups.
Each of these patterns invites more questions - are there clusters of groups who behave similarly and differently across each of these factors? Further analysis will use clustering approaches and develop visualizations of these differences.
CONCLUSION & FUTURE RESEARCH

The rational choice theory while useful in the context of researching judgement and decision-making, the theory at its very core, does not consider demographics. Race, education (in this study, major), and income-level. Demographics play a role in how consumers approach a product, analyze the product, purchase, and ultimately return the product. Ultimately, our backgrounds and the groups we belong to play a role in how satisfied we are with our purchase behaviors. With e-commerce reaching 500x growth just in the past decade, return behaviors have also drastically increased.

Future research entails picking just one demographic and diving deeper into analyzing how it plays a role in rational decision-making and return behavior.
REFERENCES


9. Tao, Kungpo and Jin, Yan () “Cultural Impacts on Cognitive Dissonance and eWOM/eNWOM,” Communications of the IIMA: Vol. 15 : Iss. 1 , Article 4.
APPENDIX A: SURVEY
Scenario

Imagine you are preparing to attend a career fair hosted by Career services. They have requested in the invitations and announcements that business professional dress is highly recommended. You do not have any business professional clothing and therefore decide to purchase one online.

On the next page, you will see scenarios on how you obtain business professional clothing.

Scenarios will be randomized and shown right after the scenario explanation. Participants will only see one of the scenarios. Please see Figures 1-4 for the scenarios.
Q3: It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior The Career Expo. When the suit arrives, your friends tell you the suit does not look good on you. How satisfied are you with the suit you received so far?

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied

Q4: It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior The Career Expo. When the suit arrives, your friends tell you the suit does not look good on you.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My choice to purchase this suit was a wise one</td>
<td>○</td>
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<tr>
<td>I think that I did the right thing when I purchased this suit</td>
<td>○</td>
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<tr>
<td>This store is exactly what I needed for this suit</td>
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<tr>
<td>I would return the item</td>
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<tr>
<td>I would keep the item</td>
<td>○</td>
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<tr>
<td>I do not usually return items</td>
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</table>

Q5: It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior the Career Expo. The suit arrives one day after The Career Expo. How satisfied are you with the suit you received so far?

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
Q6  It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior the Career Expo. The suit arrives one day after The Career Expo.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
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Q7  It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior the Career Expo. The suit arrives on time, but you feel guilty about spending the money for the suit. **How satisfied are you with the suit you received so far?**

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied

Q8  It is now time for you to find an internship in your career field. You decide to order a business suit online, 2 weeks prior the Career Expo. The suit arrives on time, but you feel guilty about spending the money for the suit.

<table>
<thead>
<tr>
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<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
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</table>
Q9  What is your age?

Q10  Please indicate your gender.

○ Male
○ Female
○ Prefer not to answer

Q11  Please specify your ethnicity

○ White or Caucasian
○ Hispanic or Latino
○ Black or African American
○ Native American or American Indian
○ Asian/Pacific Islander
○ other
Q12

Please specify your major

- Pre-Marketing
- Pre-Management
- Pre-Finance
- Pre-Accounting
- Pre-Economics
- Pre-Integrated Business
- Pre-Real Estate
- Other

Q13

Please indicate your source of funding (how do you pay for school)?

- Self-Funded (you pay for school)
- Merit Based Scholarship (based on grades)
- Need-Based Scholarship
- Parent
- Other

Q14

Think about a time in the past where you have returned an item that was still important to you in some way. Why did you still decide to return the product?
Think about a time in the past where you have returned an item if you spent a great deal of time researching the product before you bought it, why did you still decide to return the product?