Examining the Effects of Age and Gender on Consumer Participation in Online Group-Buying Auctions

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by

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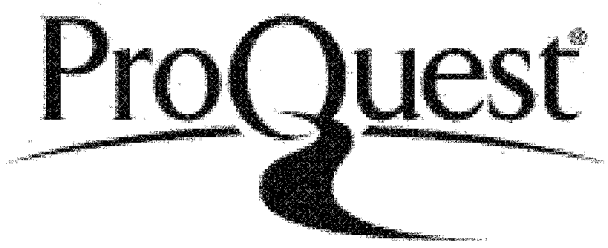

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Abstract

Although online group-buying auctions present risks to consumers, the use of this emerging auction platform has increased rapidly since 2008. However, little is known about demographic differences among consumers who use this platform. The purpose of this quantitative, ex post facto study was to examine age differences, gender differences, and Age x Gender interactions in online group-buying auction adoption in terms of consumers' self-reported perceived risk, subjective norm, and intention to participate. Simple random sampling was used to select 330 participants from a midsized college in the northwestern United States and two LinkedIn user groups. Participants were male and female active Internet users between 18 and 64 years old. Age differences, gender differences, and Age x Gender interactions were computed with multivariate analysis of variance, followed by separate univariate analyses. There were significant differences in the outcome variables between younger participants (aged 18 to 35) and older participants (aged 36 and above), Wilks's $\Lambda = .96$, $F(3, 324) = 3.93$, $p = .009$, partial $\eta^2 = .035$. The Age x Gender interaction effect was also significant, Wilks's $\Lambda = .96$, $F(3, 324) = 4.12$, $p = .007$, partial $\eta^2 = .037$. No significant gender main effect was observed, Wilks's $\Lambda = .99$, $F(3, 324) = 1.14$, $p = .33$, partial $\eta^2 = .035$. Follow-up analyses revealed a significant age effect for subjective norm, $F(1, 326) = 4.74$, $p = .03$, partial $\eta^2 = .014$, with higher mean scores for the younger participants. There was also a significant Age x Gender interaction effect for intention to participate, $F(1, 326) = 10.79$, $p < .001$, partial $\eta^2 = .032$. Scores for intention to participate were higher for younger men than for older men, but lower for younger women than for older women. The study underscore the need for practitioners and stakeholders in government to formulate effective strategies for

bridging the generation gap between young and older adopters of online group-buying auction. An examination of attitudinal differences and qualitative investigations of consumer perceptions, in online group-buying auctions, are recommended for future research.

Dedication

This work is dedicated to the Trinity, the Father, the Son, and the Holy Spirit. Thank you for being my maker, my benefactor, and for making my light to shine. Then, to the memory of my late parents, Hon. & Mrs. J.O. Ajisafe and my youngest son, Emmanuel Oluwadamilola Ajisafe, also of blessed memory. The three of you are not here on earth to celebrate this success with me. However your gentle spirits motivated me to complete the study and build a lasting legacy in your memories (Proverbs 4: 18). Finally, to my fabulous living and loving family, Adefolake Abimbola, Daniel Oluwatoyin, and David Oluwatosin Ajisafe. Thank you all for being part of my life and gearing me on, even when I almost quit.

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Chapter 1: Introduction

Researchers are showing interest in the widespread adoption of online group-buying auctions in the United States (U.S.), which is evident by projected 2011 revenue of $1.25 billion up from $873 million in 2010 (Stambor, 2011). The current interest is borne out of the need to understand factors that motivate or prevent consumers from participating in online shopping (Dholakia, 2011; Edelman, Jaffe, & Kominers, 2010). Among other factors, perceived risk has been shown to have a significant effect on consumer adoption of this innovative shopping technology (Kauffman, Lai, & Lin, 2010; Kim, Ferrin, & Rao, 2008). Consumers have a reason to be concerned. A 2011 study conducted by the Ponemon Institute indicated that 59% of respondents considered theft of information assets to be a serious consequence of security breaches (Rashid, 2011a). The hacking of the Sony PlayStation Network in the first quarter of 2011 resulted in the theft of personal information belonging to 101 million customers, 12.3 million who had credit card information on file with Sony (Rashid, 2011b; Schwartz, 2011). In 2010, the Federal Bureau of Investigation (FBI) and other U.S. law enforcement agencies received the second highest number of Internet crime complaints in over 11 years (National White Collar Crime Center [NW3C], 2011). Furthermore, an average of 25,000 such complaints were processed each month and victims lost over $183 million in 2005 (Bradbury, 2006). The increase in the number of Internet fraud cases has consumers and U.S. authorities very concerned (Featherman, Miyazaki, & Sprott, 2010).

Although victims of Internet fraud are split between men and women of different ages, the NW3C (2010) report showed that men reported greater dollar losses than women. Consumers 40-59 years old reported most of the Internet fraud complaints, a far

departure from historic trends which suggests that consumers in the 50 and over age groups were more likely to be victims of Internet fraud (NW3C, 2010).

Historically, researchers have been interested in studying the effects of gender in online shopping and factors that affect men's and women's intention to buy online (Hwang, 2010; Sanchez-Franco, 2006). Given that these individuals use the Internet to shop for different reasons (Hasan, 2010), their perception of risk may also vary (Boksberger, Bieger, & Laesser, 2007). Additionally, it has been suggested that the impact of age on consumer shopping cannot be neglected because of its strategic importance (Kwon & Noh, 2009). However, there has been no quantitative examination conducted to determine the individual differences between men and women on one hand, and differences among young and matured consumers on the other hand, and how each of these groups perceive risk in online group-buying auctions. Furthermore, the effects of these demographic variables towards subjective norm and behavioral intention on online group buying auctions have not been discussed in previous research. Prior studies on electronic-auction platforms have limited focus on risk-reducing strategies such as the effect of word of mouth on perceived risk (Kauffman et al., 2010).

The purpose of this study was to examine if consumers' age and gender differ in their perception and intention to participate in online group-buying auctions. A background of the study, statement of the problem, the purpose of the study, and a theoretical framework were presented in this chapter. The research questions and corresponding hypotheses, the nature and significance of the study, and definitions of key terms were also addressed.

Background

Although U.S. e-commerce is increasing at a rapid rate, a $21 billion increase in online sales from 2010 to 2011, online shopping in the U.S. is still a small percentage of total retail sales (Anderson, 2011). Specifically, online retailing has only accounted for 4.6% of total U.S. retail sales as of the third quarter of 2011 (U.S Census, 2011). This percentage fell short of the 10% of total sales predicted for the year (Johnson, 2003). Additionally, growth of non-travel related U.S. e-commerce sales slowed down considerably to an average of 12% between 2007 and 2009 compared to 18% between 2006 and 2007 (Mulpuru, 2009).

Online group-buying auction is an integral aspect of online shopping and may have a profound impact on continued growth of e-commerce (Lin, 2008). As noted by Lin (2008), electronic auctions continue to receive substantial interest from researchers because of the successes attributed to the platform compared to other forms of e-commerce. Specifically, electronic auctions have accounted for a substantial part of the total online retail sales going by projected sales $65 billion in 2010, which represents approximately one-fifth of total U.S. online sales (Johnson, 2005). As such, there are practical and conceptual concerns about perceived risk and inherent fraudulent behaviors (Jeon, Crutsinger, & Kim, 2008)

Groupon, LivingSocial, OpenTable, and other similar online group-buying auction initiators provide opportunities for individuals to virtually come together and bid for advertised products and services. Winning is only guaranteed when a preset purchase threshold is attained within the auction duration (Dholakia, 2011). Consumers are encouraged to promote the offerings among their social peers in order to increase

participation and successful completion of bidding (Dholakia, 2011). As with other social network enabled platforms, social interaction and connection (Cheung & Lee, 2010) are paramount in the mind of consumers participating in online group-buying auctions. These electronic-auction web sites provide individuals the opportunity to share their interests with others, connect with others with similar interests, and partner with others to participate in the auction process (Kauffman et al., 2010).

Despite the significant sales projection of electronic auctions and online shopping in general, there are also growing concerns about the negative aspects of these electronic shopping platforms (Bradbury, 2006). For example, Internet fraud has increased with over $183 million lost to fraudsters in 2005 (Bradbury, 2006). Most of these cases are associated with fraudulent use of consumer credit cards and unapproved disclosure of personal information, which resulted in identity theft (NW3C, 2010). As of 2004, the U.S. Federal Trade Commission (FTC) reported that more than 75% of consumers surveyed in a fraud study took extra precautions when choosing where to shop online to avoid being scammed by online cheats (Anderson, 2004). Although the FTC report also indicated that 74% of women made fraud-related complaints compared to only 10% of men, the likelihood of being a victim of fraud was equivalent across the genders (female 8.3% and male 8.4%) in the same period (Anderson, 2004). While, the age of those reporting Internet fraud crimes appeared to be evenly distributed, complainants 40-59 years old represented the largest group that reported crimes to IC3 (NW3C, 2010). Analysis of historic trends also indicated a shift toward consumers in the 50-59 and 60-and-over category, suggesting a flattened overall distribution of complainants (NW3C, 2010).

In 2005, more than 11.7 million consumers reported being billed for products or services that were never ordered or received (Anderson, 2007). Twenty-one percent of such fraudulent transactions were purportedly made via online or by mail, while 22% of 3,888 surveyed consumers learned about fraud offers via online channels (Anderson, 2007). As such, it appeared that consumers might consider online shopping too risky to undertake (Ko, Jung, Kim, & Shim, 2004). In other words, consumers may worry about the possible loss of money, the security of their credit cards or other financial information when making an online purchase, or even the loss of personally identifiable information, which may lead to identity theft (Ko et al., 2004). Additionally, it is possible that the amount of risk an individual is willing to take and conformance to social pressure exerted by significant others during a given purchase situation, may be dependent on the individual's demographic traits (DeCew, 2008; Featherman & Fuller, 2003). More specifically, age and gender are two socio-demographic factors that have been adjudged significant in comprehensively defining and describing profiles of emerging technology users (Lorenzo-Romero, Constantinides, & Alarcón-del-Amo, 2010, Nasri, 2011). Understanding age and gender composition provide insights into changing phenomena as well as highlights future social and economic challenges (Howden & Meyer, 2011).

Most recently, the FTC penalized one of the most prominent online social media services, Twitter, for two security and privacy breaches that put consumer privacy at risk (FTC, 2010a). The social media company was accused of gross security vulnerabilities and failing to safeguard consumer privacy and secure access to consumer accounts (FTC, 2010a). These lapses allowed hackers to illegally assume the identity of consumers and use the services to perpetuate fraud on two separate occasions (FTC, 2010a).

There are ongoing debates about how Internet fraud affects men and women (Steffensmeier & Allan, 1996). The various positions have been based on two major theories to explain gender gaps in technology adoption. One school of thought believed that gender gaps could be explained in terms of gender essentialism (Adya, 2008). The major tenet of this paradigm is that all humans are eternal and universally connected in contrast to being unique groups of individuals that are connected by physical relations (Müller-Wille, 2007). Accordingly, gender gaps in information technology (IT) and decision-making was believed to be purely based on biological and psychological differences between two gender groups (male and female), who have no social connections (Adya, 2008). The inherent biological and psychological differences between men and women significantly impacted their willingness to participate in IT or adopt technology in general (Adya, 2008). Attributes possessed by men or women are universal irrespective of the context in which the individuals who make up each of the two groups find themselves (Adya, 2008).

Others have argued against the essentialism movement, and have insisted that gender difference is a socially constructed concept invented to sustain male dominance (Berger & Luckman, 1966; MacKinnon, 1987). In the context of technology adoption, this view holds that socially constructed attitudes and beliefs may explain gender participation and usage of various technologies (Berger & Luckman, 1966; MacKinnon, 1987). For example, societal perception of technology may inhibit women from participating in online shopping. In basic terms, gender differences result from social stereotypes about technology being a male dominated with no place for women (Berger & Luckman, 1966; MacKinnon, 1987).

Both of these paradigms assume a unilateral view that all biological factors and sociological factors affect all consumers (men or women) in the same ways (Trauth, Quesenberry, & Huang, 2009). However, researchers have yet to fully examine the within-gender differences that consumers exhibit on an individual level towards technology adoption. With the introduction of the individual difference theory of gender and IT, researchers can focus attention on identifying similarities and variations across gender, and other demographic variables such as age, with respect to IT adoption (Trauth, Quesenberry, & Morgan, 2004). This line of thinking may also enable researchers to focus on other demographic factors such as age that account for individual differences in technology adoption (Trauth et al., 2009).

The present study provided some additional insight on this new theory in the online shopping domain. Prior to the present study, there was very little insight into how elements of the individual difference paradigm applied to online shopping adoption. The specific focus of the present study was on behavioral factors such as perceived risk, subjective norm, and intention to participate, to explain potential gender gaps and age differences in online group-buying auction adoption. While prior studies indicated the role that the factors play in online shopping adoption, there is a need for further analyses from a demographic perspective (Chang & Chin, 2010). There is support in literature to suggest that the adoption of functionally similar technology and user perception of such technology can be used as a starting point for researching user perception and adoption of newer technologies (Yang, 2005). Such analyses were needed in order to identify individual differences that existed among men and women, and different age groups in terms of online group-buying auction participation. Furthermore, some researchers have

suggested separate intervention procedures to address demographic differences (e.g., Venkatesh & Morris, 2000), but it was yet to be seen if the intervention is empirically justified. It is very unlikely that all men (or women) and young (or matured) consumers will behave the same way under every given circumstance (Venkatesh & Morris, 2000). For example, it was found that online shoppers are mainly young, 14-24 years old evenly spread across both genders because product images and offerings are seen as unsuitable for more matured shoppers (Ruiz & Lassala, 2010). As such, examining human differences from other perspectives provided a better understanding of why consumers behave the way they did.

The TRA and the perceived risk theory are two important theories that have been separately used to investigate some of the aforementioned factors. Specifically, the TRA has been used to examine consumer perception and behavioral intention in several information technology studies (Hwang, 2010; Kim, Kim, & Park, 2010; Yu & Wu, 2007). Based on the perceived risk theory (Bauer, 1960), risk is imminent in every behavior, but individuals depend on information to determine if the risk is worth taking (Featherman, Valacich, & Wells, 2006). Given the increased amount of Internet fraud committed in previous years, consumers may be exposed to different types of risks in new e-commerce innovations such as online group-buying auctions (Featherman et al., 2010). Findings from existing studies showed that the severity and dimensions of risk depends on the nature of shopping and type of products purchased (Featherman et al., 2010). In low-cost, online-purchase situations such as buying apparel, consumers' perception of risk may be low in contrast to buying more expensive items such as personal computers or automobiles. Dimensions of perceived risk that have been

investigated by researchers include financial risk, social risk, performance (product) risk, psychological risk, physical risk (Jacoby & Kaplan, 1972), time loss risk (Roselius, 1971), prosecution risk (Tan, 2002), security and privacy risks (Jarvenpaa & Todd, 1996).

Although, the perceived risk theory has been employed in several studies in the field of marketing, researchers continue to advocate for further investigation of the risk types and dimensions that consumers face in different purchase situations (Featherman et al., 2010). In response to the need, Liao, Lin, and Liu (2010) combined perceived risk with constructs of the theory of planned behavior (TPB). The extended model became necessary because most of the existing studies were found unsuitable in the context of pirated software usage (Liao et al., 2010). The study of risk becomes particularly important in online auctions based on prior suggestion that risk is a significant distinguishing factor between traditional online shopping and auctions (Finch, 2007).

Information asymmetry within online auctions can lead to risks and uncertainties, both of which influence consumers purchase intentions (Wu, Huang, & Fu, 2011). However, only a few studies have looked at risk dimensions that are prevalent in online group-buying auctions despite growing interest in this innovative, but risky e-commerce platform. More specifically, financial and psychological risks are the only two dimensions of perceived risk that have been shown to be significant predictors of intention to bid in group-buying auctions (Kauffman et al., 2010). However, consumers are also concerned about the security of their credit cards and the protection of their privacies while using online services. As such, a research focused on identifying the effect of perceived risk in terms of security and privacy risks that consumers may face

while participating in online group-buying auctions, was due. Unlike the extended model of perceived risk developed by Liao et al. (2010), this current study investigated the individual effects as well as the interaction of age and gender on perceived risk, subjective norm, and intention to bid in online group-buying auctions, through the lens of the TRA and the perceived risk theory.

The lack of knowledge about the impact of alternate dimensions of perceived risk on consumers' bidding intentions, inconsistent findings about demographic differences related to technology adoption, and inadequate number of empirical studies on online group-buying auctions, necessitated this research. There is no consensus in literature regarding the role of gender (Li & Kiirkup, 2007) and age (Kwon & Noh, 2009) in online shopping; therefore, new perspectives became necessary. Demographic differences in online shopping are important to examine because individuals have different purchase attributes (Diep & Sweeney, 2008), buy different products online (Chen, 2010), react differently to risk (Harris, Jenkins, & Glaser, 2006), and react differently to social influence or pressure (Dong & Zhang, 2011). Prior to this study, there was lack of literature examining demographic differences in online group-buying auctions. Rigorous research was needed to address this apparent gap in literature.

Problem Statement

The increase in Internet fraud has become a major source of concern for consumers and U.S. authorities (Chua & Warehem, 2008; Featherman et al., 2010). A 2011 FBI cosponsored study indicated that auction-related fraud accounted for 57.3% of total fraud cases, with men reporting greater dollar losses than women, and complaints more prevalent among middle-age adults (NW3C, 2010). With the emergence of online

group-buying auctions, there was evidence to suggest consumers' risk propensity was increasing (Gavish & Tucci, 2008; Kauffman et al., 2010) and demographic differences in online shopping usage were declining (Cha, 2011). However, little is known about how males and females, of different ages, respond to the risk of electronic auctions (Chang, 2010; Chen & Weber, 2010). The specific problem is that unsubstantiated claims of age and gender differences can be substantially costly for online vendors (Hyde, 2005; Kiran, Sharma, & Mittal, 2008). Failure to ascertain these demographic differences of online shopping can result in wasteful allocation of advertising expenditure and loss of patronage (Kiran et al., 2008).

Scholars have argued for and against online gender differences (Cheong, 2007; Kwon & Noh, 2009). Earlier studies suggested that males and females are psychologically different across all behavioral constructs (Müller-Wille, 2007; Tannen, 2001). In contrast, gendered differences have been viewed as largely stereotypical and context dependent in other studies (Hyde, 2005; Trauth et al., 2009). Likewise, perceived risk and subjective norm are known to vary along transaction context and across different gender and ages (Featherman et al., 2010; He & Jiaqin, 2007; Lim & Beatty, 2011). Further examination of these behavioral and demographic constructs was a critical step towards improving the adoption of risk-prone and socially driven shopping innovations such as online group-buying auctions (Black, 2007; Boksberger et al., 2007; Chen, 2010; Cho & Jialin, 2008).

Purpose

The purpose of this quantitative, ex post facto study was to examine age differences, gender differences, and Age x Gender interactions in online group-buying

auction adoption in terms of consumers' self-reported perceived risk, subjective norm, and intention to participate. Age with two factors (young consumers, 18 – 35 years and older consumers, 36 years or older) and gender with two factors (male and female) were the predictor variables, while self-reported perceived risk, subjective norm, and intention to participate in online group-buying auction were the outcome variables. The study was nonexperimental, comparative, and cross-sectional in nature. A combination of three previously validated instruments from related studies was used to identify age and gender differences across the three outcome constructs (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé, & Sanz-Blas, 2009; Chin, Wafa, & Ooi, 2010; Stone & Grønhaug, 1993). The 2 x 2 posttest, only randomized between subjects design, involved the use of the multivariate analysis of variance (MANOVA) and follow-up analysis of variance (ANOVA) statistical procedures for data analysis, when applicable. In total, 330 participants completed questionnaires with usable data, for a completion rate of 86.6%, $1 - \beta = 1.00$. The population studied consisted of men and women who were 18-64-year old active Internet users, who confirmed that they were aware of online auctions, and were residents in any of the 50 United States.

Theoretical Framework

The theoretical framework for this study was primarily based on two existing theories. The theories were the TRA and the perceived risk theory. The two theories were selected to better understand the differences among male, female, young, and adult consumers, in their perception of risk and how the perceptions relate to their subjective norms and behavioral intention. The TRA is related to attitude, subjective norm, and behavioral intention (Fishbein & Ajzen, 1975). The perceived risk theory focuses on