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Gender Differences and E-commerce Behavior and Perceptions

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Abstract

This paper examines the existence of gender differences regarding the perceptions of the benefits and concerns of shopping on-line. A survey of 224 internet shoppers was conducted and the results indicate that there are only slight differences between the genders regarding on-line shopping behavior and no differences in actual shopping behavior.

Gender Differences and E-commerce Behavior and Perceptions

Previous studies have indicated that gender differences exist in consumer behavior. Areas where gender differences have been found include; media use (Stern 1988); information processing (Meyer's-Levy and Maheswaran 1991, Darley and Smith 1995); reactions to advertising message appeals (Widgery and McGaugh 1993); shopping habits and credit card use (Hayhoe, Leach, Turner, Bruin and Lawrence 2000). Similar differences have also been noted in on-line behavior. Prior research indicates that men are more likely to shop online than are women. Gummert (2000), using 1999 data, found that 43% of male internet users shop online while only 28 percent of female internet users shop online. The profile of the internet consumer has been a young, well educated, male consumer who has above average income. (GVU 1998). Has this changed? Recently published reports indicate that this may no longer be the case. Rainie (2002) found that during the 2001 Christmas holiday shopping season more women shopped online. This study extends the research regarding gender differences in e-commerce by looking at behavior and the possible reasons for the behavior, the perceptions of the benefits, concerns and important attributes of e-commerce.

Gender and Perceptual Differences Toward Technology

Gender differences exist in both technology acceptance and usage behavior (Knupfer and Rust 1997). Perceptual differences have been noted to impact the acceptance of new technologies in the workplace. The differences were in the perceptions of the technology, with women's perceptions being strongly influenced by subjective norms and ease of use. (Venketesh and Morris 2000; Venketesh, Morris and Ackerman 2000). Additionally, women's expectations of technology in the workplace have been found to be lower than males (Hackett, Mirvis and Sales 1991). Gefen and Straub (1997) found that while there

were no differences in usage patterns between genders regarding the use of email, there were differences in perceptions regarding email. Perceptual differences can lead to usage differences. For instance, females use the internet primarily for interpersonal assistance and education, while males use the internet for entertainment and leisure (Jackson, Ervin, Gardner and Schmitt 2001;Weiser 2000).

Benefits and Concerns of Internet Shopping

Concerns

That consumers believe a degree of risk exists when shopping on-line has been documented (Radin, 2001; Tan, 1999). The most prominently mentioned cause for this perception of risk is credit card (transaction) security (Jennings 1996; Rowley 1996; Swaminathan, Leproska-White & Rao 1999 Udo 2001 ; Bhatnagar, Misra, Rao,2000). Privacy issues are another area of concern for consumers (Bartel Sheehan& Grubbs-Hoy 1999;Grummert 2000; Luo, 2002; Swaminathan et.al., 1999; Badie & Higby, 2001). Trust has is also another area shoppers indicated was a concern (Hutchenson & Warren, 2002; Lou, 2002 Torkzadeh & Dhillon 2002).

Benefits

For many consumers the benefits obviously outweighed the concerns and they have plunged into the virtual world of e-commerce. The benefits noted by on-line consumers include better selections (Rowley, 1996; Simonson, 1999, Wyner, 2001); the convenience of access to the stores on a 24 hour a day seven day a week basis (Rowley 1996; Torkzadeh & Dhillon, 2002); the convenience of shopping from home and or work (Rowley, 1996; Modahl, 2000); and the avoidance of crowds (Rowley 1996). Other benefits to consumers include; social acceptance, personal gratification, and intellectual stimulation (Modahl, 2000) and domain specific innovativeness (Citrin, Sprott, Silverman & Stem 2000).

Study Methodology

This research project was funded and developed on behalf of an internet retail company. The purpose was to profile on-line consumers then identify concerns and perceived benefits of e-commerce in the minds of the on-line consumer and utilize the information to develop a better relationship with the on-line consumer through an understanding of their underlying motivations. The data was collected in March of 2000. A phone survey was conducted of 224 respondents in seven cities. These cities were chosen for the proportionally greater percentage of on-line consumers than other regions in the country. The data was collected over a three day period with a phone bank of professional interviewers using a computer assisted telephone interviewing system (CATI) that automatically coded the responses into a database. Data regarding shopping behavior was collected on a four-point scale as interval data with "frequently" and "never" as end points. The questions assessed past behavior. (How often do you shop on-line for birthday presents?) Concerns were assessed on a four-point scale anchored by one "A lot" and four "Not at all". These questions addressed the consumer's degree of concern. (How concerned are you about return policies when shopping online?) The benefits and attributes were assessed on a five point scale anchored by one "very important" and five "not at all important". They examined the importance of the attributes to the consumer. (example: How important is seeing a picture of an item before you purchase it?) The following are the results of this survey.

Results

Demographics

As Table One indicates, our respondents mirror the e-commerce literature regarding the profile of the consumer. They tend to be younger with over 50 percent between 25 and 44; better educated, 58 percent were college graduates and or had post graduate education; with a better income, 55 percent reported a household income of at least $50,000 dollars. The sample diverged from the literature in that

there is a 50/50 split based on gender. This 50/50 split was done purposefully at the client's request. The following table, Table One, presents the respondents demographics.

Table One

Demographics of Respondents					
Age	**#**	**%**	**Gender**	**#**	**%**
18-24	29	9%	Male	154	50%
25-34	82	27%	Female	154	50%
35-44	90	39%			
45-54	71	23%			
55-64	27	9%			
65 up	5	2%			
Na	4	1%			
Education					
Highest level				**attained #**	**%**
Less than high School				4	1%
High School Graduate				50	13%
Some College/Technical School				71	23%
College Graduate/Post Graduate				178	58%
Na				5	2%
Income					
(Household)				#	**%**
Under $30,000				24	8%
$30,000-$50,000				68	22%
$50,000-$100,000				107	35%
Over $100,000				60	20%
Dk/Na/Rf				49	13%

Table Two presents the chi Square statistics between gender and frequency of purchase and Table Three presents the chi square statistics between gender and the amount of money spent online. The tests indicate there are no significant differences.

Table Two
Cross Tab of Gender by Frequency of Purchase

SEX * FRQPURCH Crosstabulation Count
FRQPURCH Total
1.00 2.00 3.00 4.00
SEX 1.00 37 75 29 13 154
2.00 23 89 26 16 154
Total 60 164 55 29 308

Chi-Square Tests
Value df Asymp. Sig. (2-sided)
Pearson Chi-Square 4.936(a) 3 .177
Likelihood Ratio 4.968 3 .174

N of Valid Cases 308

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.50.

Table Three
Cross Tab of Gender by Dollar Amount

SEX * DOLLRAMT Crosstabulation Count
DOLLRAMT Total
1.00 2.00 3.00 4.00 5.00
SEX 1.00 8 45 22 36 1 112
2.00 19 46 23 24 112
Total 27 91 45 60 1 224

Chi-Square Tests
Value df Asymp. Sig. (2-sided)
Pearson Chi-Square 7.915(a) 4 .095
Likelihood Ratio 8.450 4 .076

N of Valid Cases 224

An examination of table four reveals only marginal gender differences exist with regard to the benefits and concerns of e-commerce shopping. With a significance level of .063 the discriminant function is very close to achieving significance, however it does fall just short. The classification table, table four, demonstrates that the canonical discriminant function predicts group membership slightly better than chance.

Table Four
Discriminant Analysis Results

Standardized
Item Mean Mean
Sig. of Cannonical
female male
F. Wilkes Coefficients

Seeing a picture prior to purchase * 1.964 1.964 .000 1.00 -.145
Free shipping * 2.366 2.152 2.638 .106 -.391
Direct shipping * 2.143 2.080 .258 .612 -.048
More efficient use of time * 2.277 2.321 .103 .749 .025
Ability to shop 24 hours a day * 2.295 2.393 .521 .471 .041
Sales or discounts available * 2.286 2.446 1.585 .209 .408
Wider variety to choose from * 2.116 2.411 5.663 .018 .603
Ability to Purchase items not found 2.214 2.463 3.833 .052 .245
locally * No interaction with salespeople * 3.268 3.330 .148 .701 .283
Free gift with purchase * 3.786 3.580 1.912 .168 -.431
Gift wrapping services * 4.009 3.987 .091 .763 -.279
Concern about using credit cards for 1.884 1.634 2.949 .087 -.404
purchases **
Inconvenience of returning items ** 1.866 1.946 .315 .575 .060
Delivery costs ** 1.768 1.786 .025 .874 .169
Wait time to receive items ordered ** 2.134 2.196 .169 .681 -.004
Inability to see feel touch or try items ** 2.250 2.563 4.390 .037 .411
May be required to pay extra taxes ** 2.411 2.429 .013 .911 .160
Need to write checks or money order 3.018 2.875 .678 .411 -.194
to send payment **

Function Statistics Wilkes Chi
Lambda Square DF Sig.
.872 29.201 19 .063

N=112 Males 112 Females

* five point scale
** four point scale

Table Five
Classification Results

Predicted Group Membership				Total
SEX		1.00	2.00	
Original Count	1.00	71	41	112
	2.00	38	74	112
%	1.00	63.4	36.6	100.0
	2.00	33.9	66.1	100.0
Cross-validated Count	1.00	61	51	112
	2.00	49	63	112
%	1.00	54.5	45.5	100.0
	2.00	43.8	56.3	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case. b 64.7% of original grouped cases correctly classified. c 55.4% of cross-validated grouped cases correctly classified.*

However, an examination of the univariate tests reveals significant differences on three of the items and another that falls just short of the .05 cutoff. The differences were found on; "Wider variety to choose from" (.018), "Inability to see feel touch or try items" (037), and " Ability to Purchase items not found locally" (.052). In all of these cases the females considered the items to be more important than the males.

Summary/Conclusion

The results of this research indicate that there are not aggregate significant differences between men and women regarding the perceptions of the benefits and concerns of e-commerce. There were also no differences found regarding the amount spent or the frequency of purchase. However, univariate differences were found on perceptions of variety (wider variety to choose from and ability to choose items not found locally) and tangibility (inability to touch or try items) with women indicating these items were more important. This study, combined with two reports published by the Pew Internet and American Life Project would indicate that gender differences no longer exist regarding e-commerce behavior and the perceptions of the benefits and concerns of internet shopping. In Horrigan' s 2000, report internet users were segmented based on how many years they have been online and whether or not they would miss the internet if they could no longer go online. The demographics of these segments in 1998 were compared with the demographics in 2000. Horrigan found that 48% of internet users were women in 1998 and 50% were women in 2000 an overall increase of 2%. He also found that in the two segments that would miss the internet if they could no longer go online women increased three percent from 1998 (55%) to 2000 (58%) among the "Internet Acolytes" (those who have been online less than one year and would miss the internet if they could no longer go online). Women increased six percent among the "Veteran Enthusiasts" (those who have been online two years or more and would miss the internet if they could no longer go online) from 42% in 1998 to 48% in 2000. During the 2001 Christmas holiday shopping season women surpassed men as the primary shoppers on the internet (Rainie 2002). Since our data was collected in March of 2000 and we found no statistical differences in online shopping and by 2001 women outnumbered men as shoppers it would indicate that women have embraced the technology of the internet. From a diffusion of innovations perspective women have caught up and surpassed men in the use of the internet for e-commerce.

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