An Investigation into the Factors Influencing Ecommerce Transactions on the Web

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Abstract  

The Internet, which is a relatively new technology, has been ever changing society since its creation. The way people live their lives has changed and made a big adjustment to the Internet’s features and capabilities. People use the Internet for finding information, conducting research, communication, and most importantly for the study of consumption. In this study, we will look at Internet consumers and their differences, with regards to gender, race, education, and income.

We believe that these important factors have something to do with who purchases products and services from the Internet. The implications and results of these findings will help
to provide a better understanding of online consumer behavior and assist designers and
developers in their quest to create more advanced systems and services to better accommodate
the different types of people who are potential Internet consumers.

Introduction

Online consumer behavior is a phenomenon that may vary from time to time with
different demographic groups of people. The availability of and access to the Internet along with
its conveniences in purchasing products and services is growing more and more everyday.
(Hoffman, 2000)

However, only certain groups of people have been noticed for taking full advantage of
the Internet’s capabilities for ecommerce. With all the new advancements and technology we
have in the Internet, it is hard to think that everyone and all groups would not be eager to join in
the convenience of purchasing items from home. So, the question of why things are the way they
are comes into play. Income, age, gender, race, and ethnicity might have something to do with
the differences in e-commerce usage, and that is the focus of this research. It should help to gain
a better understanding for how and why different types of people use the Internet differently for
e-commerce.

This in turn will help to create better websites and interfaces that are more sensitive to the
needs of not only the general public, but minorities and people of less affluent backgrounds.
People need to feel comfortable and safe with this relatively new technology of ecommerce.
They also need to be knowledgeable of the Internet’s attributes that are available to them. The
research conducted in this paper should help to raise more awareness and precedence to the
issues at hand.
Literature Review

The similarities and correlations between most of the articles that were studied are strong enough to give assurance of the hypothesis and research methods used in conducting this research. They range from topics about education, access, race, gender, and trust. Plus they tie all these things into the effects they have on e-commerce and Internet use in general.

Education and Trust

Kang, Bagchi-Sen, Rao, and Banerjee, explored Internet user dropouts. The article discussed the reasons why people decide not to use the Internet, and explained some differences between people that do or do not decide to use it again. It said that “those people with a higher disposition to trust others have a higher possibility of returning to the Internet.” Also, “The proportion of Internet users with higher education is greater than those of Internet dropouts, and this gap increases with higher levels of education.” (Pg. 29) They also said that there is no gender divide when it comes to intermittent users or dropouts. (Kang, Bagchi-Sen, Rao and Banerjee, 2005) According to the Prescription Drugs Online packet, not many people trust the online drug market, but good research by consumers might change that. However, drug purchases are increasing. (Fox, 2004)

A survey from iProspect Search Engine User Attitudes, found that 81.7% of people will abandon a search query if they do not find what they are looking for within the first 3 pages. What this means, is that if a company providing a product or service can’t get their Website to come up in a search query within the first 3 pages, they basically do not have a Website in the eyes of 80% of online users. Search engines can help people find Websites for products and services they wish to buy. If they give up searching after only looking at the first 3 pages of
results, then they would be less likely to consume a product being that they didn’t view the Website. (iProspect, 2004)

**Race, Gender and Access**

An article on the “Mainstreaming of Online Life” says in its early stages, the Internet used to be dominated by young white men who had high incomes and plenty of education. In 1999 and 2000, the Internet went mainstream. Women and minorities joined the party along with more people of lower levels of income and education. (Trends, 2005)

Hoffman and Novak explored the differences of Internet usage and access between African Americans and Whites. “They concluded that access translates into usage, and that whites are more likely than African Americans to use the Web because they are more likely to have access.” However, they found no differences in usage when both parties owned a computer at home. (Hoffman and Novak, 2000) The US Department of Commerce states that people without Internet access in their homes, in general are less likely to be Internet users and frequent users. Between 2001 and 2003, online purchases of goods and services were experiencing the greatest growth.

E-commerce has grown 8% within that 2001-2003 period, and there are substantial differences with people’s use of e-commerce having to do with whether there is a dial-up or broadband connection in the home. (US Dept of Commerce, 2004) The figure below shows the percentage of people who have broadband, dial-up, or no Internet connection at home.
This figure below shows the online activities of individuals based on the type of internet connections they have at home. 64.3% of people who have broadband purchase items from the Internet. 49.2% of people who have dial-up use the Internet for ecommerce and only 33.5% of people who do not have an Internet connection at home, make transactions online as shown below.
A data memo from Pew/Internet, about online banking says that men are more likely than women to perform online banking activities. 49% of men with Internet connections compared to 39% of online women. They also say that people with higher socio-economic status (households bringing in over $75,000 in income) are more likely to partake in online banking. They also mentioned two major trends. As Internet users gain more experience online, they are more likely to participate in online activities dealing with money such as banking and purchasing goods online. Banks themselves are gaining more confidence in their online systems and are continuing to improve them to make them more favorable to the consumer. (Fox, 2005)
Methodology

The approach used in conducting this research consists of a meta-type analysis of three data sets. We are using data from the Pew Internet and American Life Project, U.S. Census, and Wharton Research. With these data sets, we will conduct a meta-analysis and draw some inferences about the results. We will also conduct an ANOVA statistical test in which we will try to determine statistical relevance. This investigatory statistical analysis will help to uncover consumption patterns based on demographic characteristics and give some scientific backing to our research findings. In a meta-analysis, all relevant sources of literature on the topic must be retrieved. Statistics are used, as well as many independent sources, which are combined and studied as one for the purpose of having as much statistical power as possible. There are 3 approaches to meta-analysis: Hedges and Olkin, Rosenthal and Rubin, and Hunter and Schimdt. (Ankem, 2005)

Results

The Pew Internet and American life Project conducts surveys in which they ask Americans questions that examine the use and social impact of our relatively new technology, the Internet. Participants that took the survey had representation from all races and all backgrounds whether it be low or high income, education, and etc. There were a total of 2,200 people that participated in this survey (Trends, 2005).

The research question is: “Does gender, race, education, or income level affect the use of the Web as an e-commerce tool?” Looking at data from the time period of May and June of 2004; this is the information we were able to retrieve. In the question of what the differences are between genders and their use of the Internet, we found that out of 1,022 men in the survey, 507 of them have used the Internet to find travel information, 265 of them have used it for job
searching, 129 of them have used it for finding a place to live, and 114 have used the Internet to do all three. For the females, we found that out of 1,178, 511 have used the Internet for finding travel information, 266 for job searching, 133 for finding a place to live and 113 that have done all three. The graph below illustrates the figures above. (Princeton Survey Research Associates)

Figure 3. Graph of male and female differences dealing with Internet use.

We were able to retrieve these results concerning Internet consumers and their levels of education. Of the 2,200 people that were surveyed, 786 of them used the Internet to make purchases. 919 of them had high school as the highest level of education completed and below. Of this 919 people, 166 of them used the internet to purchase products or services. 1,189 people had a college education and above, and 596 of them used the internet for e-commerce. Figure 2 below illustrates these figures. (Princeton Survey Research Associates)
In a survey concerning the race of Internet consumers and job searchers, we found that of the 2,200 people surveyed, 786 of them were Internet consumers. Of the 786, 681 of them were White, 51 of them were Black, 15 of them were Asian, and 13 of them were of a mixed race, while 5 of them were Native American. Of the 531, that used the Internet for job searching, 430 were White, 59 were Black, 13 were Asian, 7 were a mixed race, and 6 were Native American. The figure below illustrates these numbers. (Princeton Survey Research Associates)
In the survey concerning income and Internet consumption, we found that 17 people out of 786 Internet consumers made less than $10,000 a year. 29 people were between $10 and $20,000, 56 were between $20 and $30,000, 76 were between $30 and $40,000, 76 were between $40 and $50,000, 160 were between $50 and $75,000, 123 were between $75 and $100,000, and 147 Internet consumers made above $100,000 a year. The figure below illustrates these numbers (Princeton Survey Research Associates).
Discussion

“Does gender, race, education, or income level affect the use of the Web as an e-commerce tool?” Before this data analysis was conducted, we had four hypotheses about what we thought the trends were going to be. 1. Gender has no differences concerning Internet use. 2. The higher the level of education, the more money a person will spend on the Web. 3. Race has no effect on how people use the Web for e-commerce. 4. The higher the income, the more money a person will spend on the Web.

First of all, when looking at the graph for the gender differences, we can see that it shows no difference with Internet usage when it comes to gender. The male and female ratios were just
about even for all the categories such as searching for information on travel, jobs, and places to live.

In the education graph, the highest proportion of Internet consumers came from those who had a college education and above. It can be observed that the number of people who used the internet for consumption, that completed high school and below were considerably lower than that of who had a college education. Therefore we can say that the second hypothesis is correct by saying that the higher the level of education the higher the likelihood of Internet consumption. In the graph dealing with race and Internet consumption it appears as though more whites are likely to buy Internet products than any other race. This can be because of other socio-economic issues that effect people of minority races that go beyond the scope of this research. Based on the information from the graph about income and Internet consumption, we see that the more money you make, the more you will use the Internet for your shopping convenience. The number of Internet consumers rose with proportion as the income level got higher. It makes sense because those with low income levels would not be able to even shop as much as those who are making more money.

Also, see that the categories of race, income and education are very closely correlated. The higher the level of education you have, the more likely you are to have a high income. Also, Whites have the advantage when it comes to having access to good public education. This makes them more likely to attain high levels of education, and therefore make more money, which can lead to more Internet consumption.

What this means for the other various classes of users and ecommerce is that more effort should be put into making the Internet accessible for everybody. The knowledge and
accessibility of the Internet is key when wanting people to start buying products and services from the Web.

Future Work

In the future, further research will go more in depth about the factor of race, bringing out more information about the differences between ethnicities that can cause such gaps in ecommerce use to be evident. A 5th factor of age is also being considered since it is thought to affect ecommerce along with the others. More and more factors may be added to further investigate underlying patterns of conditions and situations for the use of ecommerce. The research can also go on to investigate the changes being made for ecommerce Websites and interfaces to get more people involved.

Another issue that should be explored is trust. Great deals of people are concerned and have fear when it comes to putting their credit card information online. Things like credit card abuse and missed delivery are what hold some people back from engaging in ecommerce activities. Access to private information and hacking is becoming a big issue on the web. Therefore, a deeper look into how much people really do trust the internet could be helpful in this research. (Kang, Bagchi-Sen, Rao and Banerjee, 2005)
Reference


Trends. Internet: The Mainstreaming of Online Life. 2005

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