

ADOPTION OF ONLINE PURCHASE BY CONSUMERS IN SAUDI ARABIA: AN EXPLORATORY STUDY¹

Dr. Alhassan G. Abdul-Muhmin
Dr. Obaid S. Al-Abdali
Management and Marketing Department
King Fahd University of Petroleum and Minerals
Dhahran, Saudi Arabia

Abstract

Consistent with the focus of descriptive studies of consumers' online purchase behavior in other national contexts, in this study, we examine how adoption of online purchasing varies across various demographic segments of the population in Saudi Arabia. We also investigate the effect of attitudes toward online shopping on consumers' pre-disposition to make online purchases. Data for the study are from a self-administered structured survey of 1,637 consumers in Saudi Arabia. The results show that a little over a quarter of the respondents have ever purchased a product online. Consistent with results of previous studies, we find online purchasers to have higher education, incomes, and attitudes toward online purchasing than non-purchasers. Expatriates are also more likely to have purchased than Saudis. Contrary to the previous studies, however, we find purchasers to be relatively older, and no differences between males and females in pre-disposition toward online purchasing.

Introduction

Research interest in consumers' Internet shopping behavior is currently substantial and growing. This is evidenced by the diversity of national contexts in which these studies have been conducted, and the evolution of specialized academic journals (e.g. *Internet Research*) with a focus on disseminating knowledge generated from these efforts. Much of this research has focused on describing the characteristics of Internet shoppers, comparing Internet shoppers with non-shoppers on demographic or psychographic variables, examining the role of consumer innovativeness on Internet shopping adoption, or identifying the factors that influence consumers' intention to make Internet purchases (e.g. George, 2002). Consistent with the focus of these previous studies, the purpose of our study was to examine the extent of online purchase adoption in Saudi Arabia, and how this differs across different demographic segments of the population.

Understanding these issues is important for the segmentation and marketing efforts of potential online retailers. It is also important to examine these issues in the context of Saudi Arabia because, even though Internet user penetration in the country is currently only around 6.8% of the population (compared with for example, 27.7% for the UAE and 22% for Bahrain), Saudi Arabia's 1.6 million Internet users is the single largest Internet user community in the Arab World (Madar Research Group, 2002). Thus, in volume terms, the potential for e-commerce is higher for Saudi Arabia than for any other country in the Arab world. Madar Research Group estimates that e-commerce volume for the Kingdom is currently around US\$1.5 billion for Business-to-Business (B2B) e-commerce, and US\$170 million for Business-to-Consumer (B2C) e-commerce. These figures are projected to rise to

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US\$8 billion and US\$470 million respectively by the end of 2005. Yet if current trends continue, a large share of this projected growth in B2C e-commerce is likely to be taken up by foreign online retailers, significantly edging out any Saudi e-retailers. This study will therefore be useful in providing potential Saudi online retailers with guidelines on what to focus on in order to both attract and keep local online shoppers. In addition, the study will contribute to the growing literature on online purchase behavior.

The rest of the paper is organized as follows. After this introduction, we review the literature on demographic differences between adopters and non-adopters of online purchasing. From this review, we develop hypotheses for the present study. Next, we present the study's methodology and results. A final section summarizes the findings, draws conclusions, and outline preliminary theoretical and managerial implications.

Literature Review

Purchasing products over the Internet has rightly been viewed as an innovation for most consumers, and thus is a phenomenon that has not yet been well understood. Therefore, as with most phenomena in their formative stages, there is a perceived need to understand what drives consumers' Internet purchases. Consequently, with a few exceptions, much of the extant empirical research on Internet shopping has been largely descriptive. Some of the studies have focused on identifying the characteristics of products and services that facilitate their adoption for Internet purchase by consumers (e.g. Phau and Poon, 2000), while others have examined the factors that influence consumers' decision to purchase from the Internet (e.g. George, 2002).

The majority of studies, however, have been concerned with identifying the characteristics of online buyers and how they differ from non-buyers. Factors investigated in this respect have included demographics (e.g. Eastlick and Lotz, 1999; Vrechopoulos, Siomkos, and Doukidis, 2001; Dholakia and Uusitalo, 2002; Lee and Johnson, 2002), psychographics (e.g. Sin and Tse, 2002), attitudes (e.g. Crisp, Jarvenpra and Todd, 1997; George, 2002), and innovativeness (e.g. Goldsmith, 2001). For example, Vrechopoulos, Siomkos, and Doukidis (2001) found that adopters of Internet shopping in Greece have generally been young, highly educated, high-income earning males who have previously used other "distance shopping" modes. Sin and Tse (2002) found that adopters in Hong Kong have similar demographic profiles, in addition to being more time-conscious, self-confident, and heavier users of the Internet and other in-home shopping alternatives. Goldsmith (2001) found Internet shoppers to be more innovative than their non-shopper counterparts.

Thus, a general picture of the consumer who makes purchases over the Internet has emerged from this research as a young, educated, male, consumer, with higher-than-average income, and scoring high on a general innovativeness scale. Thus, there is a basis for expecting demographic differences in adoption of online purchasing also in the Saudi context. Specifically, we expect adopters of online purchasing to be predominantly highly educated, high-income earning, young males. Based on the findings in George (2002), we also expect a positive relationship between adoption of online purchase and attitudes toward online purchasing.

In the case of Saudi Arabia, there is a large expatriate population, members of which are generally included in consumer studies conducted in the Kingdom. Although a large portion of this population consists of low-income earning manual laborers, a significant proportion consists of high-income earning professionals. This group of expatriates generally has a

higher need for products that are likely not to be available locally, thereby making them more likely to purchase products online than Saudis. Thus, we also expect by way of hypothesis, that adoption of online purchasing will be more prevalent among expatriates compared to Saudis.

Method

Data used for the study were collected as part of a larger survey to examine the incidence of online purchasing among consumers in Saudi Arabia. The data were collected using a self-administered questionnaire. Respondents were asked to indicate whether or not they had ever bought any products over the Internet since December 1998 when public access to the Internet was finally allowed by the Saudi authorities. Those who reported having ever bought were then asked to indicate the types of products bought, reasons for buying over the Internet rather than conventional channels, their experiences with Internet purchase and their likelihood of buying again in the future, while those who had never bought were asked to indicate their reasons for not buying. All respondents then completed a set of attitudinal statements about buying from the Internet and provided demographic information. This paper focuses only on the part of the data set relating to online purchase incidence, attitudes, and demographics.

Prior to designing the questionnaire, an exploratory study was conducted to identify possible factors to include. This involved a combination of literature review, focus group discussions, and depth interviews. The focus groups were conducted among students of a marketing research course taught by one of the authors, while the students conducted the depth interviews with their friends and relatives for course credit. The latter was especially geared toward obtaining information from female respondents since the university is an all-male institution. A large number of factors emerged from the exploratory study, and were discussed with the students in class as well as with the authors' colleagues before incorporation in the questionnaire design. The final questionnaire was also pre-tested before administration in the survey.

Sample

Proper sampling frames are virtually non-existent in Saudi Arabia, making it impossible to obtain adequate probability samples. Consequently, a non-probability sampling and data collection procedure was devised for the study. Research assistants distributed the questionnaires in coffee shops, doctors' offices, banks, Internet cafes, and shopping centers in the major cities of the Kingdom (specifically Dammam, Al-Khobar, Riyadh, and Jeddah). Both Arabic and English versions of the questionnaire were distributed. Respondents were encouraged to fill out the questionnaires on the spot, and in the majority of cases they did. A total of 1,637 completed questionnaires were collected in the process.

Table 1 about here

Demographic characteristics of the sample are shown in Table 1. There is a dominance of male respondents, a slight over-representation of expatriates, and a large over-representation of respondents in the 18-30 age groups in the sample. These should be taken into account in subsequent interpretation of the study results.

Results and Discussion

Online Purchase Adoption

Four hundred and thirty-six respondents (representing 26.6% of the sample) indicated that they had ever bought products over the Internet. Books, computer software, hotel reservations, and video/musical CDs were the dominant products that respondents reported having ever purchased. As expected, most purchases were made from companies in the U.S. and Europe.

Demographic Differences in Online Purchase Adoption

In the literature review section, we hypothesized that there are gender, age, income, education, and nationality differences among consumers in their tendency to adopt online purchase. Table 2 shows the results of a series of chi-square tests that were performed to test our specific hypotheses that online purchase adopters are mainly highly educated, high-income earning, young, expatriate males, with relatively higher attitudes toward online purchasing.

Table 2 about here

The results partially confirm our hypotheses, as there are statistically significant differences in online purchase adoption across age, income, education, and nationality groups. Specifically, adoption is higher among older, highly educated, high-income respondents. Adoption is also higher among expatriates than Saudis. However, it is equally likely between men and women. Overall, the results indicate mixed support for findings from studies conducted in other national context. Our findings for income and education difference confirm the results of previous studies. However, the lack of significant gender effects and the positive effect of age on adoption are not consistent with previous findings.

Effect of Attitudes toward Online Purchasing on Online Purchase Adoption

As indicated earlier, for this study we also hypothesized a positive relationship between online purchase adoption and attitudes toward online purchase. Essentially, we expected adopters of online purchase to have significantly higher attitudes toward online purchasing than non-adopters. In our questionnaire we measured attitudes toward online purchasing using a set of five Likert statements to which respondents expressed agreement or disagreement on a 5-point scale. We tested this hypothesis in a binary logistic regression analysis with online purchase adoption as the dependent variable and attitude toward online purchasing as the independent variable.

Prior to running the regression model, confirmatory factor analysis was performed on responses to the attitude statements to ascertain their unidimensionality and reliability. The analysis was done using LISREL 8.51 for Windows (Joreskog and Sorbom, 2001). Results of the analysis are shown in Appendix I along with the attitude statements. Cronbach's alpha is also reported for the scale. The LISREL results show a good fit of the measurement model, and the Cronbach's alpha reliability coefficient is comparable to values reported in the literature.

The regression results (Table 3) show a highly significant positive effect of attitude toward online purchasing on online purchase adoption.

Table 2 about here

Summary and Conclusion

Using a sample of 1,637 consumers, this study examined the nature of demographic differences between adopters and non-adopters of online purchasing in Saudi Arabia. Based on the results of previous studies, it was hypothesized that majority of adopters will be young, highly educated, high-income earning males. The results however, show mixed support for this hypothesis. Our results show adopters in Saudi Arabia to be highly educated and high income earning. However, they also tend to be older, and are not more likely to be males than females. Expatriates are also more likely to adopters. Our results also show that adopters of online purchase also tend to have higher attitudes toward online purchasing than non-adopters.

Table 1
Sample Characteristics

Variable	Frequency	%
Age		
< 18	61	3.7
18 – 25	899	55.1
26 – 30	274	16.8
31 – 35	150	9.2
36 – 40	91	5.6
41 – 45	80	4.9
46 – 50	48	2.9
Over 50	29	1.8
Gender		
Male	1403	86.0
Female	229	14.0
Education		
Elementary	25	1.5
Intermediate	107	6.6
High School	161	9.9
Diploma	120	7.4
Some college	440	27.0
College degree	774	47.5
No education	4	0.2
Monthly Income*		
< SR 1,000	540	33.6
SR 1,000 - 4,999	540	33.6
SR 5,000 - 9,999	238	14.8
SR 10,000-14,999	169	10.5
SR 15,000-20,000	71	4.4
Over SR 20,000	51	3.2
Nationality		
Saudi	1311	80.4
Expatriate	319	19.6

Table 2
Demographic Differences in Adoption of Online Purchasing

Demographic Variable	Number (Proportion) of:		Chi-square	p
	Adopters	Non-Adopters		
Gender			2.55 (1 d.f.)	.110
	Male	383 (27.3%)	1,020 (72.7%)	
	Female	51 (22.3%)	178 (77.7%)	
Age ¹			27.69 (3 d.f.)	.000
	Less than 18 years	9 (14.8%)	52 (85.2%)	
	18 – 25 years	203 (22.6%)	696 (77.4%)	
	26 – 40 years	164 (31.8%)	351 (68.2%)	
	Over 40 years	58 (36.9%)	99 (63.1%)	
Income			76.38 (3 d.f.)	.000
	Less than SR 1,000	98 (18.1%)	442 (81.9%)	
	SR 1,000 – 4,999	123 (22.8%)	417 (77.2%)	
	SR 5,000 – 9,999	72(30.3%)	166 (69.7%)	
	Over SR 10,000	131 (45.0%)	160 (55.0%)	
Education			7.99 (1 d.f.)	.005
	College	345 (28.4%)	869 (71.6%)	
	Others	88 (21.3%)	325 (78.7%)	
Nationality			10.61 (1 d.f.)	.001
	Saudi	326 (24.9%)	985 (75.1%)	
	Non-Saudi	108 (33.9%)	211 (66.1%)	

NOTES:

1. Age, income, and education categories in this Table are collapsed versions of those in Table 1. The fewer categories are designed to make the results more lucid
2. Totals may not add up to the sample size of 1,637 due to listwise deletion of missing data.

Table 3

Results of Logistic Regression Online Purchase Adoption on Attitude toward Online Purchasing

Independent Variable	B	Wald's Statistic (d.f.)	Exp (B)
Attitude Toward Online Purchasing	1.090	130.55 (1 d.f.) **	.336
Constant	-4.684	194.61 (1 d.f.) **	108.212

Notes:

1. Model Summary: -2 Log likelihood = 1709.96; Cox & Snell R-Square = 0.091
2. ** p < 0.001

Appendix I
Results of Confirmatory Analysis of Attitude Measure

	Loading (T-value)	Error	Item reliability	Cronbach's alpha
Attitude Toward Online Purchasing				0.65
It is a good thing that Saudi consumers can buy products through the Internet	0.58	0.87	0.28	
Buying products over the Internet is not a sensible thing to do (R)	0.74	0.68	0.45	
It is exciting to buy products over the Internet	0.52	0.89	0.23	
Saudi consumers should not buy products over the Internet	0.67	0.83	0.35	
Buying products over the Internet is a risky thing to do (R)	0.38	1.15	0.11	

Selected LISREL Model Fit Statistics: Chi-square = 25.34 (5 d.f.); $p < .00001$; RMSEA = 0.051; CFI = 0.98; IFI = 0.98; GFI = 0.99; AGFI = 0.98; RMR = 0.029

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