

START-UP INITIATIVES IN THE DIGITAL AGE: EXAMINING ONLINE GROCERY RETAILING FROM A SAUDI ARABIAN ANGLE

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Abstract:

The surge in online grocery shopping is intricately linked with the expansion of broadband services and internet accessibility, as indicated by a Data Monitor Report in 2010. This transformation represents a significant opportunity, particularly for emerging nations like Saudi Arabia, where information technology plays a pivotal role in fostering growth and progress, as highlighted by AlGhamdi, Nguyen, Nguyen, and Drew in 2011.

Saudi Arabia is currently witnessing a remarkable trend characterized by the widespread adoption of the internet and the rapid proliferation of social media applications. With global rankings of third in smartphone penetration and 64th in internet access, Saudi Arabia possesses advanced ICT infrastructure. However, the embrace of e-commerce has been relatively gradual among its citizens, as observed by Al Ghamdi, Nguyen, Nguyen, and Drew in 2011. This contrasts with Western countries, where online grocery shopping has gained enthusiastic acceptance, as underscored by Kim and Forsythe in 2010.

This paper delves into the unique landscape of e-commerce in Saudi Arabia, shedding light on the factors influencing its adoption. While the internet has seamlessly integrated into grocery shopping routines in Western societies, its adoption in the Arab world remains a relatively uncharted territory, as noted by Al Balushi and Al Lawati in 2012.

Keywords: Online grocery shopping, e-commerce adoption, Saudi Arabia, internet penetration, ICT infrastructure.

I. Introduction

Growth in online grocery shopping appears to be related to broadband expansion and internet penetration (Data monitor Report 2010). The greatest benefit that information technology offers emerging nations, like Saudi Arabia, is opportunity

(AlGhamdi, Nguyen, Nguyen, and Drew, 2011).

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One of the most significant trends in the Saudi Arabia is the rapid spread of the internet and growth of social media applications. (Ahmed and Bahaziq, 2013). Globally, Saudi Arabia ranks third in terms of smart phone penetration and

64th for internet penetration (Zaki 2013). Although the country is home to advanced ICT infrastructure, its citizens have adopted e-commerce at a relatively slow pace (Al Ghamdi, Nguyen, Nguyen, and Drew 2011). While in the West, use of the internet has been enthusiastically accepted for grocery shopping, (Kim and Forsythe, 2010), the idea remains essentially foreign for most Arab countries (Al Balushi and Al Lawati (2012).

According to Zaki (2013), demand for online food delivery in Saudi Arabia is expected to grow at a rapid pace in the near future – due to continued urbanization, changing lifestyles and an emerging online culture of a young and tech-savvy population. Therefore, the time seems right for supermarkets to introduce OGS as an alternate to traditional grocery shopping. Given that Saudi cities do not have a public transportation and women - the prime grocery shoppers - are not allowed to drive, OGS seems like a great option.

Our report presents the finding of a timely and unique empirical investigation of the views and perceptions of potential customers of online grocery store (OGS) in Saudi Arabia.

Specifically, our study will assess whether an OGS meets the five conditions for successful adoption of a new innovation laid out by Rogers (1961), and explores the relationship between the features of a grocery store and the shopper's computer orientation, search proneness and innovativeness.

We start with a brief look at the peculiarities of the Saudi marketplace, followed by a review of relevant literature - leading to a set of hypotheses and research questions. This is followed by a statement of research design and methodological procedures, followed by a discussion of managerial/public policy implications and conclusions.

II. Context: Saudi Arabia

Typically, OGSs offer an electronic transaction interface where the retailer picks and delivers the goods to customers (Raijas, 2002). Grocery shopping has been regarded as stressful and as a chore (Geuens et al., 2003).

A survey conducted by the founders of the online grocer Peapod.com found that grocery shopping is more disliked than a visit to the dentist (Corral, 1999). Similarly, a study by the University of Michigan found that among 22 household tasks, grocery shopping was at the bottom of the list, just ahead of cleaning (Richards, 1996). This fact, together with the increasing levels of internet penetration and faster paced consumption habits (ONS, 2002), consumers are eager to embrace the "convenience" of online grocery shopping. Home delivery is an important feature of OGS and this feature adds a new meaning to the concept of "convenience" in shopping.

Prior to the start of large-scale commercial exploitation of oil in 1941, Saudi Arabia was one of the poorest countries in the world. Today, Saudi Arabia aspires to build physical infrastructure as a major driver of its economic development (Al Rasheed 2010). This process of economic development was accelerated in 1973 when the world oil crisis resulted in large increases in oil revenue.

Saudi Arabia is one of the most sparsely populated countries in the world with a population estimated to be 26 million including 6 million non-nationals, covering 2,149,690 square kilometers, with a per capita income of \$24,200. It has 10 million internet users. The rate of literacy is about 85 percent among males and 70 percent among females (C.I.A. 2012). It is a conservative and deeply religious country, having centuries-old attitudes and traditions, often derived from the Arab tribal culture Al Rasheed (2010).

III. Literature Review

A. Online Shopping

Shopping using the internet is one of the most rapidly growing forms of retailing (Levy and Weitz, 2001. Sindhav and Balazs (1999) characterize consumers by their desire and ability to engage in internet

shopping. Desire, in turn, is split up into preference for home-based shopping and technological orientation. Internet shopping can be regarded as one form of home-based shopping, and some consumers may be more prone to home-based shopping than others, for frequently due to lack of time or physical inability. Bellman et al. (1999), using data from a web panel of 10,180 web users, found that a "wired lifestyle" (i.e. the length of time one has been online), was closely related to online shopping.

Positive attitude towards information and communication technologies has also been closely associated with online shopping (Siddiqui 2008). Online shoppers expect more product information, more product variety, and more personalized products compared to the traditional shoppers (Szymanski and Hise 2000). Krishnamurthy and Singh (2005) stated although that online shopping has grown almost five-fold since the year 2000, it continues to account for only three per cent of total retail sales. Perceived usefulness, perceived ease of the use, perceived risk of the product/service failure, and perceived risk to the security of the transactions are some of the characteristics that influence online shopping (Lee, Park, and Ahn, 2000). Bhatnagar, Misra, and Rao, (2000) argue that the likelihood of purchasing online decreases with increases in perceived product risk. Lower search costs, traditionally associated with the online shopping, are thought to result in consumers buying better quality items (Bakos and Yanis 1997). Based on an online survey of 1007 shoppers, Szymanski and Hiss (2,000) found that satisfaction with online shopping is related to convenience, information, site design, and financial security. Credit cards are the most widely used method of payment for online purchases (Hawk, 2004). Trusting their e-payments has a strong impact on the consumer's acceptance of e-business, and on the success of e-business (Ho and SeeTo, 2010). Lack of trust is an obstacle to accepting online shopping (Laroche, Zhiyong, McDougall; Bergeron 2004).

According to Europe Economics (2007), online consumers tend to be younger, better off and better educated than their offline counterparts. Consumers are most attracted to the internet for products like books, CDs and PCs where the attributes of the product can be clearly identified online. For low priced products such as CDs the convenience offered by the internet is an important factor. For products requiring direct contact – 'high touch products' – or for which service and delivery are important factors the internet is a less attractive shopping channel.

Specifically, Lohse, Bellman, and Johnson (2000), using a panel data, find that the percentage of panelists making a purchase online increases as a function of the time spent online. Similar findings have been reported by the research carried out by Citrin, Sprott, Silverman and Stem (2000) on the role of internet usage in the acceptance of online shopping.

Sindhav and Balazs (1999) characterize consumers by their desire and ability to engage in internet shopping. Desire, in turn, is split up into preference for homebased shopping and technological orientation. Internet shopping can be regarded as one form of home-based shopping, and some consumers may be more prone to home-based shopping than others, for example because of lack of time or physical inability. Several studies have addressed the risk perceived by consumers as a major determinant of the acceptance of buying over the internet. Donthu and Garcia (1999), in a profiling study, found US internet shoppers to be less risk averse and de Ruyter et al. (2001) confirmed the importance of perceived risk when buying travel-related products on the net. Liebermann and Stashevsky (2002) identified internet credit card stealing and misuse of personal information as the major risk elements associated with internet shopping by a sample of Israeli consumers, and that the degree of perceived risk was in turn related to usage experience with the internet.

B. Online Grocery Shopping

Although many companies in Arab countries have adopted e-commerce, the idea of adopting OGS involving home delivery is new. Research indicates that OGS is not common even in mature markets like Holland – where 5% of internet users did so in 2010 (GfK, 2010).

For experienced online shopping consumers, online privacy and security is less of an issue (Forsythe and Shi, 2003) than for the inexperienced consumers (Miyazaki and Fernandez, 2001). Many consumers who do not shop for groceries online do shop online for other products (Forsythe and Shi, 2003).

C. Characteristics and of Potential Adopters

Rogers (1961) pointed to five factors that accelerate the rate of adoption of innovations: relative advantage, compatibility, complexity, divisibility (trial ability), and communicability (observe ability). Robertson (1971) and Rogers and Shoemaker (1971) find that the adoption process is positively related to a product's relative advantage, compatibility, divisibility, and communicability, and negatively related to its complexity and its cost. These characteristics have also been linked to the OGS shopping experience. According to Verhoef and Langerake (2001), the perceived relative advantage refers to the degree to which consumers perceive OGS shopping superior to in-store shopping.

The perceived compatibility refers to the degree to which consumers perceive OGS shopping meeting their shopping needs. The perceived complexity refers to the degree to which consumers find OGS shopping difficult to understand. The perceived divisibility refers to the degree to which OGS shopping can be tried on a limited basis. The perceived communicability refers to the degree to which the benefits of use of OGS shopping are observable or describable to others.

Henderson and Divett (2003) found that the technology acceptance model (Taylor and Todd, 1995) accounted for up to 15% of the explained variance associated with adoption behaviour. They found that the relationship between perceived ease and adoption behaviour is mediated by perceived usefulness. This proposition is supported by Davis' (1993) who explored the relationship between ease of use and usefulness. Davis argued that ease of use has an impact upon usefulness, yet usefulness does have an impact upon ease of use.

Al Balushi and Al Lawati (2012) carried out a study of 224 respondents in Oman. As OGS was not available in Oman at the time of their research, their study focused on three characteristics that consumers were able to evaluate prior to using an OGS. They found that respondents who felt time pressure and wanted to reduce physical effort were most willing to adopt an online grocery. They found a strong positive correlation between perceived relative advantage, relative compatibility and online adoption and negative relationship with complexity.

In a study conducted in the United States, Degeratu, Rangaswamy, and Wu (2000) found that online grocery shoppers are more search conscious, and price sensitive than offline shoppers. Online shoppers like the ease of browsing for deals. According to Kantar Retail (2012), educated customers shop online to save time and low income customers to save money.

Online and offline grocery shoppers also vary in price sensitivity and brand preferences. Convenience is a major motivator of online grocery shopping as it requires less physical effort and more organized shopping (Andrews and Currim, 2004).

IV. Hypotheses

Discussion of the literature above leads us to propose following six specific hypotheses:

Ho. 1a: OGSA is positively related to perceived relative advantage. The greater the perceived advantage of an online grocery store, the more likely one is to accept an OGS.

Ho.1b: OGSA is positively related to perceived compatibility. The greater the perceived compatibility of an OGS, the more likely one is to accept the OGS. **Ho.1c:** OGSA is negatively related to perceived complexity. The lower the perceived complexity of an OGS, the more likely one is to accept the OGS.

Ho.1d: OGSA is positively related to its perceived trialability. The greater the trialability of an OGS, the more likely one is to accept the OGS.

Ho.1e: OGSA is positively related to its perceived results demonstrability. The more demonstrable the perceived advantage of an OGS, the more likely one is to accept the OGS.

Ho. 2: Online involvement will be positively related to acceptance of an OGS. The greater one's involvement with internet, the more likely one is to accept the OGS. **Ho. 3:** Online shopping frequency will be positively related to the OGSA. The more frequently one shops online, the more likely one is to accept an OGS.

Ho.4. Online shopping attitude will be positively related to the OGSA. The more favourable one's attitude towards an OGS, the more likely one is to accept the OGS. **Ho.5.** Innovativeness will be positively related to the acceptance of an online grocery store. The more innovative a person is, the more likely s/he is to accept an OGS. **Ho.6.** Search Proneness will be positively related to the OGSA. The greater one's tendency to engage in consumer search activities, the more likely one is to accept an OGS.

V. Research Questions

In the following paragraphs, we present our discussion of relevant literature and present our research questions.

Based on a sample of 808 Croatian online shoppers, Bosnjak, Galesic and Tuten, (2007) found that personality traits of neuroticism, openness to experiences and agreeableness are related to willingness to buy products online. Similarly Tsao and Chang (2010), using a sample of 439 Taiwanese online shoppers, found that the above three traits were also related to online purchasing.

Childers, Carr Peck and Carr (2010) found that motivations to engage in retail shopping included both utilitarian and hedonic dimensions. Delafrooz, Haron, Sidin, and Khatibi, (2009), using a sample of 370 students in Malaysia, found that utilitarian orientation and hedonic orientation are positively correlated with the attitude towards online shopping.

Schiffman, Kanuk and Das (2005) delineated the importance of the role played by personality traits the decision-making process of consumers. Specifically, Schewe (1973) provided a detailed account of the role that the of achievement motivation has played in shaping in consumer behavior. Gardner (1972) studied 100 U.S. students and found that students with a high need for achievement are more apt to buy high quality clothing products. According to Yankelovich and Meer (2006), an important segment of consumers is motivated by the need for achievement in their shopping behavior. They favour products and services that show off their success to their peers.

Jackson, Ahmed and Heapy (1976) have shown that achievement is not a one-dimensional but multidimensional need. They uncovered six dimensions, namely, concern for excellence, acquisitiveness, status with peers, achievement via independence, status with experts and competitiveness. Subsequent research (i.e. Ahmed and Litvack 1998) has shown the usefulness of this approach to achievement need in the international setting.

This discussion of the literature leads us to ask the following question.

RQ 1: Are Jackson, Ahmed and Heapy (1976) Achievement dimensions related to the acceptance of an OGS?

Mangaraj, and Benjamin (2002) conducted a study based on the responses from a sample of 1,000 shoppers. They found that in the selection of supermarket, there are four top characteristics: a clean/neat

store, high quality produce, high quality meats and courteous, friendly employees. Mukiibi, and, Bukenya, (2008), using survey responses from over 500 shoppers, conducted a market segmentation of grocery shoppers in Alabama. By employing a cluster analysis technique, Alabama grocery shoppers were segmented into three different groups, based on the relative importance of preferences for store features and lifestyles.

They identified three segments, namely, back to nature (health and quality product conscious), convenience (conscious of quality of shopping experience) and typical shoppers (concerned solely with convenience, price and quality). Briesch, Chintagunta, and Fox (2009) using household-level market basket data, found that, in general, assortments are more important than retail prices in store choice decisions. Dunne, Lusch and Carver (2014) pointed out that stores must satisfy the attributes important to consumers in order to be successful. These include features like quality and variety of products, service in store, layout of the store, atmosphere in the store, location, and discount and promotions.

Anckar, Walden and Jelassi, (2002), based on a longitudinal case study of an OGS in Finland, found the following four factors as sources of customer value: price level, product range, shopping convenience and customer service. Chu, Urriaza Cebollada- Calvo and Chintagunta (2010) found that households are more brand loyal, more size loyal but less price sensitive in the online channel than in the offline channel. The online-offline differences in brand loyalty, size loyalty and price sensitivity are larger for food products and for sensory products.

This discussion of the literature leads us to ask the following question.

RQ 2: Is the importance of features of a grocery store related to the acceptance of an OGS?

VI. Methodology

A. Sample Selection

Data for this research were collected through an internet and personal interview survey of Saudi Arabian users from May to August 2013. The target population for this study was potential Saudi OGS shoppers. For the internet survey, we posted a link to our English or Arabic language questionnaire on a MonkeySurvey.com account. Through this link, our questionnaires were made available on the respondents' social media accounts on Facebook and Twitter. A total of 82 respondents filled out the online questionnaire.

Due to the very conservative nature of Saudi society, the personal interview data for this study was personally collected by the second author from female respondents and by male for male respondents. The potential respondents were approached in places such as their private homes, work places and institutions of higher education. They were requested to fill out the questionnaire in the presence of the interviewer. The response rate for this interview data was 40%. The interviewer ensured that the questionnaires were properly completed. This procedure resulted in 137 properly completed responses. All our respondents were Saudi residents, mostly from city of Jeddah, second largest and the most cosmopolitan port city located on the Red Sea in Saudi Arabia. In total, there were 207 usable personal interview and online responses.

B. Questionnaire

To generate items appropriate for testing our research hypotheses and to provide insight into the online shopping activities in Saudi Arabia, we created a bank of items, based on our survey of the literature on online shopping. We chose Jackson, Ahmed and Heapy (1976) Six Dimensional Achievement Scale (eighteen nine point

Likert items) to measure Achievement motivation. Finally, the research instrument in English was double translated into Arabic and extensively pre-tested and refined through personal interviews with students in Saudi Arabia.

C. Measures

1. **Six Dimensional Achievement Scale:** Eighteen nine point bipolar items are grouped into six achievement dimensions as prescribed by Jackson, Ahmed and Heapy (1976), namely, excellence, acquisitiveness, status with peers, independence, status with experts and competitiveness. The value of these scales range from a minimum of three to a maximum of twenty-seven.

2. **Frequency of online shopping transactions:** Four point Likert scale ranging from very often to never, to measure frequency of the use of internet to purchase of nine products and services namely, banking, making travel arrangements, buy music films and videos, buy electronic goods, buy computer items, buy books/stationary, buy clothes, buy household items and buy furniture.

3. **Acceptance of Online Grocery Store X:** A scale made up of four seven point items denoting acceptance of online grocery store described on a one page conceptual statement describing the online grocery store to be offered by a wellknown grocery chain X in the city of Jeddah, Saudi Arabia(See Appendix I)

4. **Perceived Characteristics of an Online Grocery Store:** Five point Likert items to measure respondents' perception of the following characteristics: relative advantage (a six item scale), compatibility (a 4 item scale), complexity (2 separate items), trialability (2 separate items) and communicability (2 separate items). These items were adapted from scales constructed to measure adoptability of social network sites by Lin, Chiu and Lim(2011) and online grocery store literature.

5. **Attitudes:** Five point Likert items to construct following attitude scales: a) innovativeness (a 4 item scale from Lin, Chiu and Lim,2011)b) involvement with computers (3 separate items),attitude towards online grocery shopping(a 4 item scale) and search proneness(a 3 item scale), all based on online grocery store literature.

D. Data Analysis

Our analysis started with the frequency analysis of all our data and mean score on socio-demographic, personality and value variables, frequency of the use of internet to purchase products and services. Then, we factor analysed the fourteen frequency items related to the use of internet to purchase products and services items using varimax rotation. This procedure resulted in three factors explaining 60% of the common variance. We named these factors: General Online Shopping (Factor 1), Foreign Social Media Shopping (Factor 2) and Financial and Traveling (Factor 3). Appendix II presents detailed factor analysis results. Lastly, we created the following scales using Cronbach reliability procedure: OGSA (alpha=.88) relative advantage (alpha=.92) compatibility (alpha=.89) acceptance of X online grocery store (alpha=.84), innovativeness (alpha=.86), search proneness (alpha=.84) and attitude towards online grocery shopping (alpha=.89). This was followed by Pearson correlation of the acceptance of our online grocery store with online involvement items, features of a grocery store, perceived characteristics of an online grocery store, online shopping factors, Jackson, Ahmed and Heapy (1976) achievement dimensions, innovativeness and search proneness. Finally, to assess the predictive power of our online involvement items, online shopping frequency, achievement dimensions, innovativeness and search proneness, we regressed them against the acceptance of XOGS using backward variable exclusion procedure. This analysis, not directly associated with an online or other grocery store, assessed their predictive power.

VII. Results and Discussion

Twenty percent of our respondents indicated that they were likely to shop through our OGS web site regularly, and nineteen percent indicated that they were very likely to do so. Thus, it appears that there is a fair potential for an OGS in the city of Jeddah.

As indicated on Table 1, the mean age of our participants is 30 years. The sample includes 50% married persons and 50% singles, 38% males and 62% females, 11% of the respondents have high school or less education, 21% have some postsecondary education, 48% have completed university, and 20% have post-graduate training. 64% of our respondents earn less than 150,000 Saudi Rials per annum and 36% over 150,000 Saudi Rials (Can \$ = 3.70 Saudi Rials). In terms of computer usage, 26% spend 1 to 2 hours a day on the internet, 26% 2 to 3 hours and 48% four or more hours. The average age of the respondents is 30 years and 48% spend four or more hours per day on the computer.

Our respondents scored highest on excellence and status with experts' dimensions of the achievement scale, followed equally by acquisitiveness and status with peers. Achievement via independence was the lowest scored dimension. Family Security was the most important Terminal value held by our respondents, followed by A Comfortable Life and Freedom. An Exiting Life was the least important value, followed by Equality and A Sense of Accomplishment. Ambitious was the most important Instrumental value, held by our respondents, followed by Capable, Independent. Imaginative was the least important value, followed by cheerful and Self-Controlled

Overall, our sample is biased towards, younger, well-educated, computer savvy, middle income females. In terms of personality and values, it is strongly motivated towards doing everything well, respecting expert advice for the purpose of providing family security, comfortable life and freedom. The respondents also strongly value ambition and competence but put less emphasis on being daring, self-disciplined and lightheartedness.

Also, 20% of our respondents indicated that they are likely to shop through X OGS web site regularly and 19% indicated that they are very likely to do so.

Thus, it appears that there is a fair acceptance of X OGS in the city of Jeddah, and that 39% of our respondents are quite favorably disposed towards adopting an OGS.

A. Correlation of AOGS with Achievement Dimensions

Out of the six achievement dimensions correlated, AOGS is found to be statistically significantly correlated with only two dimensions, namely, concern for excellence ($r=.20, p<.01$) and competitiveness ($r=.17, p<.05$). With a combined size of 0.18, the overall size of these correlations was small. Thus, our answer to our research question 1 is a weak yes.

This does, however, indicate that the potential adopters of OGS are likely to be both competitive and perfectionists. They are likely to be very meticulous in making their purchase decisions and would like to surpass others through their perceived ability to make the best purchase decisions.

Table I: Respondents Demographics, Achievement Motivation and Rokeach

Rank Terminal Values

Achievement Dimensions ¹			Time Spent on Internet	
	Mean	Rank	Hours spent per day:	Percent
Excellence	19.1	1		
Acquisitiveness	17.5	5	One to Two	26%
Status with Peers	17.3	4	Two to Three	26%

Independence	14.7	6	Four or More	48%
Status with Experts	19.1	1	Education	Percent
Competitiveness	17.0	3	High school or less	11%
Rank Terminal Values²			Some Post High School	21%
A comfortable life	3.8	2	University Degree	48%
An exciting life	6.0	8	Post Graduate Training	20%
A sense of accomplishment	5.1	5	Mean Age	30 Years
Equality	5.7	7	Gender:	Percent
Family security	3.3	1	Male	38%
Freedom	4.8	3	Female	62%
Pleasure	5.1	5	Marital Status:	Percent
Self-respect	4.8	3	Single	50%
Social recognition	6.4	9	Married	50%
Rank Instrumental Values²			Income	
V.138 Ambitious (Hard working, aspiring)	3.7	1	Total Income in Saudi Dinars	Percent
V.139 Broad-minded (Open-minded)	5.1	5	Less than 50,000	29%
V.140 Capable (Competent, effective)	4.4	2	Between 50,000 and 150,000	35%
V.141 Cheerful (Lighthearted, joyful)	5.7	7	Between 150,000 and 250,000	22%
V.142 Imaginative (Daring, creative)	6.0	9	More than 250,000	14%
V.143 Independent (Self-reliant, self-sufficient)	4.5	3	Response Method	
V.144 Intellectual (Intelligent, reflective)	5.3	6	Personal	60%
V.145 Responsible (Dependable, reliable)	4.7	4	Online	40%
V.146 Self-Controlled (Restrained, selfdisciplined)	5.7	7		

1 2

Mean scale values range from 3 (low) to 27 (high); Mean rank values range from 1 (high) to 9 (low);

B. Correlation of AOGS with Features of a Grocery Store

To answer our Research Question 2, that examines the relationship between the importance placed on various features of a grocery shop and acceptance of X grocery store, nine out of the fourteen features of a grocery store listed were significantly correlated with the acceptance of X grocery store. With an $r=.37$ and $p<.001$, the strongest relationship is with home delivery, followed closely by security of store website. This result is consistent with the one found by Lee, Park, and Ahn, (2000) for online shopping. The weakest

relationship was between freshness and discount and promotions ($r=.14$, $p<.05$ each). Relationships with service in store, service at check-out counter, discount and promotions, payment services, security service, and location are in the middle. Therefore, our answer to our Research Question 2 is a resounding yes.

It appears that the potential users of OGS in Saudi Arabia greatly value home delivery and security of store website. Although both freshness of products and price and discounts are important, they are less important than service at store and checkout counter, a finding earlier reported by Syzmanski and Hise (2000) for online shopping. An OGS that can generate confidence in the security of their website and assure quality home delivery of products is likely to attract potential users of OGS. It appears that an OGS that provides excellent service will be patronized as long as pricing is reasonable.

C. *Correlation of AOGS with Online Involvement*

As seen on Table 2, of the three alternatives provided for stating one's orientation towards computers, human, and both computers and humans, only the orientation towards both computers and human is statistically significantly related to acceptance of X grocery store ($r=.30$, $p<.01$). Of the six social networks listed, only possession of YouTube account is statistically significantly correlated with acceptance of X grocery store ($r=.21$, $p<.01$). Thus, we find that the support for our Ho.1 is rather weak. It appears that the potential users of online grocery shopping in Saudi Arabia are likely to be subscribed to YouTube services, oriented towards both computers and humans. Thus, for potential OGS, You Tube appears to be the social media outlet to promote their products.

Table II: Correlation of Online Grocery Shop Acceptance with Online Involvement, Online Shopping Factors and Features of a Grocery Store¹

INDEPENDENT VARIABLES	Correlation Coefficient
Achievement Motivation	
Concern for Excellence –	.20**
Competitiveness	.17*
Features of a Grocery Store	
Freshness	.14*
Service in store	.20**
Service at check-out counter	.22**
Discount and promotions	.14*
Payment Services	.18*
Security service (security of the personal information collected by the store)	.17*
Security of the store Website	.32**
Location	.19**
Home delivery	.37**
Online Involvement	
I find myself to be oriented equally towards humans and computers.	.30**
Not have an Account with YouTube	-.21**

Online Shopping Items and Factors	
Shop at Saudi Online Stores	.16*
General Online Shopping Factor	.16*
Foreign Social Media Shopping Factor	.19**
Financial and Traveling Factor	.20**
Mean Acceptance of Online Grocery Store	22.8
Sample Size	207

Statistical Significance Level: * $p < .05$; ** $p < .01$

D. Correlation of AOGS with Online Shopping Factors

Of the three online shopping factors and four individual items correlated with AOGS, only one item failed to attain a statistical significance level of $p < .05$. The size of these significant correlations is not very large, ranging from 0.20, and $p < .01$, with financial and travelling factor to 0.16 and $p < .05$ with shopping at Saudi online stores. Thus, we find that although our Ho.2 is confirmed, the correlations are not substantial.

Online shoppers are familiar with the mechanics of online shopping and have developed a trusting relationship with the payment and delivery system.

For experienced online shopping consumers, online privacy and security is less of an issue (Forsythe and Shi, 2003) than for the inexperienced consumers (Miyazaki and Fernandez, 2001). Given the relatively small size of the relationship of online shopping with AOGS, one has to conclude, however, that not all the present online shoppers can be converted to adopt OGS. Many consumers who are not shopping for groceries online do have online shopping experience with other products (Forsythe and Shi, 2003).

Table III: Correlation of Online Grocery Shop Acceptance with Perceived Characteristics of an Online Grocery Store, Achievement Motivation and Attitudes

INDEPENDENT VARIABLES	Correlation Coefficient
Perceived Characteristics of an Online Grocery Store	
Relative Advantage Scale	.68**
Relative Advantage Item 1: Using home delivery will help me when I need to carry large or heavy items	.52**
Relative Advantage Item 2: Using a home delivery online grocery shop allows me to expand my selection of available products.	.51**
Compatibility Scale	.56**
Compatibility Item 1: Using a home delivery online grocery shop is convenient for me because I am online most of the time.	.57**
Complexity Item 1: Learning to use a home delivery online grocery shop would be easy for me.	.43**
Complexity Item 2 It would be easy for me to become skillful at a home delivery online grocery shop.	.39**
Trialability Item 1: I know that I can take a site tour to see a home delivery online grocery shop works before I decide to shop there.	.39**

Trialability Item 2: know that I can place a small trial order with a home delivery online grocery shop works before I decide to do my main grocery shopping there.	.41**
Results Demonstrability Item 1: It is easy to communicate to others the consequences of using see a home delivery online grocery shop.	.44**
Results Demonstrability Item 2: It is obvious to me whether a home delivery online grocery shop is beneficial or not.	.41**
Scales Measuring Attitudes	
Attitude towards Online Grocery Shopping	.54**
Innovativeness	.22**
Search Proneness	.29**
Mean Acceptance of Online Grocery Stores Al Danoub	22.8
Sample Size	207

¹

Statistical Significance Level: * $p < .05$; ** $p < .01$

E. *Correlation of AOGS with Perceived Characteristics of an OGS*

Table 3 indicates that all of our scales and individual items, reflecting perceived characteristics of an OGS, are positively correlated with AOGS. The strongest correlations are with the relative advantage scale. Correlation of AOGS with our relative advantage scale is $r = .68$ ($p < .001$), and for two individual items also reflect relative advantage is $r = .52$ and $r = .51$ ($p < .001$) respectively. This is followed by correlation with compatibility. Correlation with compatibility scale is $r = .57$ and $p < .001$ and, for the individual item, reflect compatibility is $r = .57$ ($p < .001$). The size of correlation with complexity, trialability, and communicability is smaller than with relative advantage and compatibility. Therefore, hypotheses 6a, 6b, 6c, 6d and 6e are accepted. In other words, a favourable perception of the characteristics of an OGS is very closely associated with acceptance of X OGS. An X OGS store is clearly perceived as both providing relative advantage and compatibility. Given the nature of service being provided, a smaller size of correlation with complexity, trialability, and communicability items is understandable.

F. *Correlation AOGS with OGS Shopping Attitude, Innovativeness and Search Proneness*

Of the three attitude scales included in our study, the strongest relationship of AOGS is found with online grocery shopping attitude. With a correlation coefficient size of 0.54 and $p < .001$, this is a particularly robust relationship, soundly confirming our Ho. 4. The strength of this relationship should come as no surprise.

A statistically significant correlation of 0.22 and $p < .01$, with innovativeness, and 0.29 and $p < .01$ with search proneness with AOGS, confirms our Ho. 5 and Ho. 6. Thus, it appears that OGS is considered an innovative service in Saudi Arabia and appeals to innovators. Earlier (Eastlick and Lotz, 1999) suggested that online shopping itself appealed to innovators. Our results for search proneness are similar for for concern for excellence. This indicates that a thorough search for products, prices, product expiry dates etc. is very attractive to potential OGS customers in addition to the advantages associated with home delivery of grocery products. These results are consistent with results found earlier by Syzmanski and Hise (2000) for online shopping customers.

G. *Multiple Regression Results*

Table 4 presents the backward regression model of AOGS with achievement dimensions, features of a grocery store, online involvement, online shopping, innovativeness and search proneness to assess predictive validity of these independent variables. With adjusted $r^2=.17$, F Value of 5.3 and $p<.0001$, the regression model is statistically highly significant. An explanation of the reasonable amount of the common variance, permits us to describe the regression model components. With a beta value of 0.22 and $p<.01$ orientation towards both humans and computers variable explains greatest portion of common variance. This is followed by search proneness (beta=.19, $p<.05$), concern for excellence (beta=.18, $p<.01$), general online shopping factor (beta = .17, $p<.05$) and possession of an account in YouTube (Beta =-.16, $p<.05$).

Thus, the general picture that emerges from this analysis is that individuals who are both computer savvy and human-oriented, are presently shopping online, heavily involved with You Tube, perfectionists, meticulous and search extensively before shopping and are most likely to be potential adopters of OGS. These results show the predictive power of the variables previously found statistically significant in correlation analysis.

Table IV: Regression Model Explaining Online Grocery Shop Acceptance¹

VARIABLES	BetaWeight β
Not Have Account on YouTube	-.16*
Shop at Saudi Online Stores	-.02
I find myself to be oriented equally towards humans and computers.	.22**
General Online Shopping Factor	.17*
Foreign and Social Media Shopping Factor	.13
Financial And Traveling Factor	.06
Concern for Excellence	.18**
Competitiveness	-.03
Innovativeness	-.11
Search Proneness	.19*
Sample Size	207

$R^2=.212$, adjusted $R^2=.172$; $F = 5.3$, $p<.0001$; * $p<.05$; ** $p<.01$.

H. Conclusions and Implications

The major limitation of this research is that it was carried out with a convenient and limited sample of potential online grocery shoppers in Saudi Arabia.

Results of our study showed that there is reasonable acceptance of the OGS concept. The store described by us met the five conditions laid out in literature for successful adoption of new innovation, namely, relative advantage, compatibility, complexity, trialability and results demonstrability. In terms of the features of a grocery store, home delivery and security of website were found to be the most valuable features. Service-oriented features were valued more highly than low prices and discounts. As one would expect, it is also found that a positive attitude towards OGS and frequent online shopping were strong predictors of acceptance of OGS.

Based on our results, it would appear that the Saudi Arabian marketplace is ready for online shopping. Super markets should target individuals who are innovative, competitive, perfectionists and like to search extensively before making a purchase. Consumers' fundamental concerns regarding trust and security of online operations would need to be addressed. In terms of the specific shop features, home delivery, followed closely by security of the store website, check out service, payment service, security of the personal information collected by the store, competitive prices and discounts and represent key concerns of our respondents.

Our research conclusions could be confirmed with an in-depth and all-encompassing probabilistic sample of Saudi Arabian adult grocery store customers. Additional qualitative insights into the shopping behavior of Saudi men and women would also augment our findings.

Appendix I

Please read the following description of the new home delivery service to be provided by a grocery store in Saudi Arabia and answer questions regarding the store services.

(X) grocery store website provides a home delivery services for its products with two different delivery times: first in the morning between 7:00a.m. to 9:00a.m., and second one in the afternoon from 5:00p.m. to 7:00p.m. Delivery charge is 10 riyal.

The website has a store catalog which shows all the products available in the store along with their prices. A customer can select products and quantities they wish to purchase. An invoice of the total purchase is then prepared and the customer indicates delivery date and time of delivery (morning or afternoon) and how they wish to pay for the purchase. To use the service, the consumer has to create an account and provide personal information and their home address. (All the personal information will be secured in the Al Danoub website data base and will not be shared with other websites). There are two payment methods (Credit card or cash on delivery). There is also a special feature for loyal consumers, they can subscribe for a 6 months (3 deliveries) or 1 year period (7 deliveries) and pay a reasonable fee for the special deliveries (other than 7:00 a.m. to 9:00 a.m. and 5:00 p.m. to 7:00 p.m.). Subscribing to X web site will allow them to send you updated email about special deals and discounts and new store arrivals.

Listed below are a series of statements related to your attitude towards a home delivery online grocery shop. Could you please tell us, on a scale of 1 to 7 how likely the following statements are true. The scale values are:

- (1) Not likely at all
- (2) Not likely
- (3) Less likely
- (4) Neither not likely or likely
- (5) Somewhat likely
- (6) Likely
- (7) Very likely

I expect to visit home delivery web site of Al Danoub

I expect to shop through home delivery web site of Al Danoub regularly

I prefer to shop through home delivery web site of Al Danoub rather than at a regular grocery store.

I consider a home delivery web site of Al Danoub to be my first choice when I want to buy from a grocery shop.

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