Online Grocery Shopping: The Influence of Situational Factors

Dipali Jamdade[1], Ashwini Ghone[2], Pratiksha Shrirame[3], Prof.Rankhamb R. P.[4]
[1, 2] Dept of Computer Science Engineering
[1, 2] MIT College Of Railway Engineering & Research, Barshi

Abstract- *This paper seeks to understand the triggers which influence the adoption (and the discontinuation) of online grocery shopping. Specifically, the research aims to establish the role of situational factors in the process of adoption. Design/methodology/approach – A two-step research process is employed. First, exploratory qualitative research is carried out, with the purpose of gaining an in-depth understanding of consumers' online grocery shopping behaviour. This is followed by a large-scale quantitative survey extending the findings of the qualitative research and validating the role of situational factors in instigating the commencement (and discontinuation) of online grocery buying. Cluster analysis is used to segment consumers based on the importance of specific types of situations. Findings – Both qualitative and quantitative results establish the importance of situational factors, such as having a baby or developing health problems, as triggers for starting to buy groceries online. Many shoppers are found to discontinue online grocery shopping once the initial trigger has disappeared or they have experienced a problem with the service. Practical implications – While situational factors are beyond a marketer's control, they could be used as a basis for marketing communications content and target advertising, for instance, by using magazines directed at new parents. Originality/value – The importance of situational factors as triggers for the adoption of online grocery shopping suggests an erratic adoption process, driven by circumstances rather than by a cognitive elaboration and decision. The adoption of online shopping seems to be contingent and may be discontinued when the initiating circumstances change. Keywords Internet shopping, Consumer behaviour, Cluster analysis Paper type Research paper*

I. INTRODUCTION

According to Keynote (2007), "the UK is considered to have one of the world's most developed Internet grocery industries". Yet, while the online food and grocery market is reported to have grown by almost 34 per cent in 2006, online grocery purchases are estimated to still account for only 1.6 per cent of total UK grocery sales (Keynote, 2007). In contrast, overall internet sales in the same year accounted for as much as 10 per cent of all retail sales (BBC News, 2008). Mintel (2007) conclude that online shopping for food remains a niche market. The fast growth rate of the online grocery market presents a challenge for supermarket chains competing for share, in terms of balancing their online and offline investments. A better understanding of the triggers which influence the adoption (and the discontinuation) of online grocery shopping is vital for the strategic management of this sector, both in the "more developed" UK market and elsewhere. The current issue and full text archive of this journal is available at www.emeraldinsight.com/0309-0566.htm Online grocery shopping 1205 Received April 2007 Revised March 2008 Accepted August 2008 European Journal of Marketing Vol. 43 No. 9/10, 2009 pp. 1205-1219 q Emerald Group Publishing Limited 0309-0566 DOI 10.1108/03090560910976447 Shopping for groceries online is arguably a discontinuous innovation (Hansen, 2005), requiring a significant change in behaviour (see Robertson, 1967): online shoppers forfeit the social interaction of offline shopping and the potential to evaluate groceries prior to purchase. For online grocery shopping to develop beyond its current "niche" size, retailers need to understand not only what triggers consumers to change their purchase behaviour, but also the extent to which their online shopping experience reinforces the adoption process. Previous research pertaining to internet grocery shopping has focused on comparing online and offline purchase behaviour in terms, for instance, of brand loyalty (e.g. Danaher et al., 2004), shopping behaviour (e.g. Andrews and Currim, 2004), the importance of brand names (e.g. Degeratu et al., 2000); and consumers' perceptions of the advantages and disadvantages of shopping online for groceries (Ramus and Nielsen, 2005). Another important stream of research has examined the consumer traits of internet shoppers, either in terms of their general shopping orientation (e.g. Brown et al., 2003), their web-usage-related lifestyle (Brengman et al., 2005), or psychographic characteristics (Barnes et al., 2007). Additionally, Rohm and Swaminathan (2004) developed a typology of internet grocery shoppers based upon their motivations for shopping online. The aim of our research is to identify triggers for the adoption and discontinuation of online grocery shopping. Specifically, the objective of this study is to establish the role of situational factors in the process of adoption of online grocery shopping behaviour. This knowledge will assist online retailers in their customer recruitment and retention efforts. Our research makes asignificant contribution to the literature by extending knowledge of online purchase behaviour beyond the much researched influence of consumer traits, assessing the impact

of situational factors and their role as triggers for the adoption of online grocery shopping. Bandura (1977) highlighted the importance of contextual factors, including the social, situational, and temporal circumstances under which events occur in shaping the cognitive appraisal of the causes and consequences of one's behaviour. Yet, situational factors have often been ignored in research on consumer behaviour and the adoption of innovations, with rare exceptions (e.g. Dabholkar, 1996; Dabholkar and Bagozzi, 2002, in the general context of the adoption of technology based self-service). The framing of much of the existing literature implies that that the adoption of grocery shopping is a once-off process, but our findings suggest that this is a misconception. The importance of situational factors as triggers for the adoption of online grocery shopping suggests an erratic adoption process, driven by circumstances rather than by a cognitive elaboration and decision. The adoption of online shopping seems to be contingent and may be discontinued when the initiating circumstances change. From a managerial perspective, uncovering the importance of situational factors as triggers for consumers to start (or to stop) online grocery shopping enables e-retailers to target segments of consumers in relevant predicaments or life-states and will help them to take more appropriate, proactive steps to improve retention rates. The paper is structured as follows. First we review the literature relevant to the adoption process of online (grocery) shopping and theories relevant to our study, highlighting the gap pertaining to the study of situational factors. In the next section we discuss the sampling frame and data collection procedures for the first, qualitative, EJM 43,9/10 1206 stage of the research and present our analysis and findings. This is followed by the method and findings of the second, quantitative, stage. Finally, we discuss the implications of the overall findings for theory and practice.

II. SCOPE

Conceptual framework Our research aims to identify the triggers for the adoption and discontinuation of online grocery shopping relate to the literature on the adoption of innovations in general and of internet shopping in particular. Social cognitive theory informed the specific objective of uncovering the role of situational factors. The process of adoption Robertson (1967) classifies innovations as continuous, dynamically continuous and discontinuous. Crucially, discontinuous innovations not only involve the adoption of a new product, but also cause buyers to significantly alter their behaviour patterns. Using Robertson's typology, shopping online for groceries can be classified as a discontinuous innovation, because there is a significant change in behaviour: selecting grocery items from a list on a web page instead of choosing items on display on a supermarket shelf. This is particularly relevant for fresh produce such as meat, fish, fruit and vegetables, which are rich in sensory attributes (e.g. Morganosky and Cude, 2000; Geuens et al., 2003). The changes in behaviour patterns that mark discontinuous innovations suggest that the process of adoption for these innovations may be lengthier, and possibly more problematic, than for continuous or dynamically continuous innovations. Furthermore, consumers' perceptions of the characteristics of an innovation affect its rate of adoption (Mahajan et al., 1995; quoted in Verhoef and Langerak, 2001). According to Rogers (1983), the five characteristics of relative advantage, compatibility, complexity, divisibility and communicability influence the rate of adoption of an innovation. In the context of the adoption process of online grocery shopping, Verhoef and Langerak (2001) investigated the effects of perceived relative advantage, compatibility and complexity on consumers' intentions to purchase groceries online. Their research showed that consumer perceptions of the relative advantage and compatibility of electronic grocery shopping positively influenced the intention to adopt online grocery shopping. Perceived convenience emerged as a potentially decisive factor in determining consumers' perceived relative advantage and compatibility of electronic grocery shopping. Moreover, as expected, consumers' perceptions of the complexity of electronic grocery shopping had a negative influence on their online grocery intentions. The focus on intentions is a major limitation of Verhoef and Langerak's (2001) findings. In contrast, Hansen's (2005) research investigated both experienced and inexperienced online grocery consumers. Hansen's findings suggest that US adopters of online grocery shopping attached higher compatibility, higher relative advantage, more positive social norms and lower complexity to internet grocery shopping, not only compared with consumers who had never bought anything on the internet, but crucially, also compared with consumers who had purchased other goods/services on the internet, but not groceries. Hansen's findings are significant for several reasons. Firstly, they indicate that online shopping is not adopted per se, but in connection with specific product Online grocery shopping 1207 categories. This is consistent with Brown et al.'s (2003) findings that the product category, rather than the shopping orientation of the individual, was a significant determinant of online shopping. Therefore, acceptance of and familiarity with internet technology do not appear to be sufficient antecedents of the adoption of online shopping; other factors instigate the behaviour changes involved in online shopping in particular consumption categories. For example, Davis et al. (1989, p. 987) note that self-efficacy "is one of the major factors theorised to underlie intrinsic motivation". Putting together Hansen's (2005) and Davis et al.'s (1989) findings, we infer that consumers who have already purchased groceries online have an enhanced

assessment of their own self-efficacy or ability to perform this behaviour. This enhanced assessment affects the higher compatibility and relative advantage, the more positive social norms and the lower complexity that these consumers attribute to internet grocery shopping, compared with other internet shoppers. This inference is consistent with Bandura's (1977, p. 205) claim that "experiences based on performance accomplishments produce higher, more generalised and stronger efficacy expectations than [...] vicarious experience'. Furthermore, according to Bandura's (1977) Social Cognitive Theory, contextual factors, including the social, situational and temporal circumstances under which events occur, have an impact on how self-efficacy is cognitively appraised. The suggestion of a continuous reciprocal interaction between the environment in which an individual operates, his or her own cognitive perceptions (self-efficacy and outcome expectations) and behaviour, suggests that situational factors need to be investigated as prompts for the adoption of online grocery shopping. Situational factors and the adoption of online shopping Many studies have sought to identify the individual personality or psychographic traits which correlate with the adoption of new technologies in general and of internet shopping in particular. This has resulted in many typologies of internet shoppers (e.g. Brengman et al., 2005; Brown et al., 2003; Childers et al., 2001; Fenech and O'Cass, 2001; Se´ne´cal et al., 2002). Additionally, Rohm and Swaminathan (2004) developed a typology of online grocery shoppers based upon their motivations for shopping online. Shopping motivation was found to interact with the product category in affecting the online purchase frequency of various categories of internet shoppers (convenience shoppers, variety seekers, balanced buyers). However, many of these studies have evaluated the influence of personality traits on intentions to purchase online, rather than actual behaviour. Yet, as discussed in the previous section, experiences based on performance accomplishments produce higher, more generalised and stronger efficacy expectations (Bandura, 1977). Furthermore, situational factors are usually ignored in consumer behaviour research, both in general and in the specific contexts of the adoption of technology and of internet shopping. As noted, there has been an assumption that adoption is a rational and enduring decision. However, those authors who do acknowledge the role of situational factors suggest that these may be very important in the understanding of the process of adoption. Engell and Blackwell (1982) and Dabholkar and Bagozzi (2002) note that situational factors may prevent a consumer from adopting a new product (or technology), even if he/she possesses the "right" consumer trait. Hence Dabholkar and Bagozzi's (2002, EJM 43,9/10 1208 p. 197) suggestion that "researchers need to understand the consequences of various situational factors (and their interactions) so that managers can plan to avoid negative situational influences, whether in-store or online". Two studies have considered the influence of situational factors in the context of home and online shopping. Gillett (1976) found that in-home shopping was often motivated by specific needs or circumstances, such as avoiding an extra trip to pick up a needed item. More recently, Morganosky and Cude (2000) noted that convenience was a particularly relevant motive when there were situational constraints such as ill health or the presence of small children in the household. This suggests that situational factors may be important in shaping and reinforcing online shopping motivations

III. METHODOLOGY

The research was in two stages. First, we conducted exploratory qualitative research, (Study 1), with the purpose of gaining an in-depth understanding of what motivates consumers to start shopping online for groceries and the extent to which their online shopping experience encourages them to continue or to stop online grocery shopping. Following the qualitative research, we designed and implemented a large-scale quantitative survey (Study 2), in order to extend the findings of the qualitative research and to validate the role of situational factors in instigating the commencement or discontinuation of online grocery buying. Cluster analysis was used to uncover specific triggers for particular groups of consumers.

Study 1: Qualitative research Research design of Study 1 The qualitative research consisted of focus groups with both current and lapsed online grocery shoppers. Four 90-minute focus groups were held with eight people in each group. The 32 respondents had all bought groceries online regularly, although some had subsequently lapsed. All were heavy users of the internet and most had access to broadband either at home and/or work. All respondents lived in Greater London, were over 25 years old and represented a broad mix in terms of age, occupation and family life stage. They were recruited on the internet by a professional recruitment agency and received £35 as an incentive for attending the groups. The four groups were purposefully recruited to include consumers buying groceries online with different frequency: . female regular buyers; . female "mixed" light and regular buyers; . male "mixed" light and regular buyers; and . female light and lapsed buyers. Regular buyers were defined as those who shopped online for groceries once a month or more, with light buyers shopping less than once a month. The inclusion of a male group reflects their relative importance in the market; men account for one third of online grocery shopping (Verdict, 2004). The focus groups were led by an experienced moderator. All groups were tape-recorded; the tapes were transcribed by a professional audio-typist. Data analysis took

place in two stages. First, the group moderator analysed the transcripts using paper coding and a thematic approach, producing a Online grocery shopping 1209 report and presentation. In a further, supplementary analysis, the transcripts and tapes were analysed by an analyst who coded the research brief, transcripts and the research report using Qualrus software. The use of computer assisted qualitative data analysis software (CAQDAS) enabled a more comprehensive analysis of our data, providing additional and more detailed findings (for full details of the qualitative analysis, see Robinson et al., 2007).

Main findings of Study 1 Starting and stopping online grocery shopping. Situational factors appeared to be the key triggers for starting online grocery shopping. Many respondents described lifestyle changes that had led them to start online grocery shopping. These included moving house, breaking a limb, getting a job or changing jobs, having a baby, leaving work, working late, working at home, children leaving home, elderly parents dying, getting a dog, and getting a car: My sister has just had a baby and she shops online (female light/regular buyer). I broke my back four years ago, so it was then (female regular buyer). I broke my arm (female regular buyer). For some, moving house to an area where their usual supermarket brand did not have a physical presence had triggered shopping in the "virtual" store. Others had been influenced by advertising such as leaflets, coupons, TV ads, banners and air miles. Significantly, situational factors appeared to be important triggers not only for starting but also for diminishing the frequency of shopping online for groceries or for stopping altogether, particularly when the initiating situation had reverted back to normal. For example: I had elderly parents, and it saved me having to go to the supermarket all the time, I'd order on the Internet and it would get delivered to them but they have passed away now so I don't use it as often (female light/regular buyer). A friend of mine had a hip replacement ... and she did all her shopping online for a few months so it is very useful in that respect (female light/regular buyer). Another significant finding was that almost all respondents continued to shop in off-line stores for groceries, in tandem with their online purchases. Some enjoyed shopping in supermarkets and found the online browsing experience less satisfactory, as they did not come across interesting new items and offers in the same way as when shopping in the store. Whether groceries were bought more often online rather than offline depended on situational variables. The online grocery shopping experience. Overall, internet grocery shopping was regarded as a chore rather than a pleasure, much less interesting or fun than "surfing the web", gambling, or buying products such as CDs, books and holidays. A number of areas of concern were raised: many respondents felt that their online grocery providers could not be trusted to be reliable because products were regularly omitted from the delivery. Substitute items were often considered unsuitable and there was an awareness of differences in service quality between orders supplied from the warehouse or from a local store: EJM 43,9/10 1210 I have given up expecting to get what I've ordered (female regular buyer). If you are relying on a delivery coming and they don't deliver it, you have to go out anyway so that defeats the object of buying online (female light/regular buyer). Unsatisfactory deliveries and incorrect orders were the main cause of complaint and were given as the main reason for discontinuing online grocery shopping. Some respondents considered a two-hour delivery slot too long and many complained about late deliveries: I find delivery quite stressful because you are anticipating them coming and I find that quite stressful. The longer I have to wait the worse it gets, I just get more and more stressed (female light/regular buyer). Other worries raised by respondents included bad picking and packing of goods and there were concerns about perishables being too near to sell-by dates or not being kept properly chilled in delivery vans. Conclusions of Study 1 The results of the qualitative study indicate that situational factors are important triggers not only for starting but also for diminishing the frequency of shopping online for groceries or for stopping altogether. Overall the findings suggest that the online mode of shopping for groceries is discretionary: it may be abandoned when a particular trigger disappears or because consumers are unhappy with service, but equally, it may be restarted as changing life events create new triggers. Furthermore, online grocery shoppers continued to shop in traditional grocery stores. In the second stage of the research, a postal survey was used to quantify and amplify the findings from Study 1.

Study 2: Survey Research design of Study 2 The findings of Study 1 informed the construction of a questionnaire, which covered a wide range of issues such as the frequency of shopping online for groceries, the reasons for choosing a particular provider and attitudes towards grocery shopping in general and online. This paper focuses on the analysis of questions relating to the adoption process for online grocery shopping. In total, 20 statements describing situational variables believed to prompt online shopping and 18 reasons for stopping were derived from the qualitative research. Respondents were asked to evaluate each statement against a five-point scale where 1 denoted "not applicable/no influence", 2 ¼ "weak influence", 3 ¼ "moderate influence", 4 ¼ "strong influence" and 5 ¼ "very strong influence". A five-point scale was considered appropriate: using a seven- or nine-point scale could have made the question appear more difficult to answer and a larger number of categories would assume that the respondents are able to finely discriminate

between the levels of influence each of the 20 reasons given had on their behaviour. After a pilot study with 40 respondents, the final questionnaire was posted to a sample of 5,000 names, randomly extracted from a commercial list of online grocery shoppers[1]. Our decision to adopt a postal survey seems counter-intuitive as our study focuses on internet use. Even if a sampling frame of e-mail addresses were available, there would be reasons to prefer a postal survey. As Bryman and Bell (2007) note, Online grocery shopping 1211 response rates for online surveys tend to be lower than for comparable postal surveys (see also Grandcolas et al., 2003; Lozar Manfreda et al., 2008). An e-mail survey requires access to bulk-mailing facilities and risks introducing additional sampling error through e-mails inviting participation in the survey being blocked by spam filters (Malhotra and Birks, 2007). In our study, 1,327 questionnaires were returned (a response rate of 27 percent); of these, 1,128 were valid (had ever used the internet for grocery shopping). In order to assess our sample, we compared the MOSAIC groups represented in our sample to the national distribution (Table I). Our sample provides a reasonably good match to the UK population in terms of MOSAIC categories, although the two largest categories (Symbols of Success and Happy Families) are slightly over-represented, whilst those in the Municipal Dependency category are under-represented. Over 50 percent of respondents were relatively new to buying groceries online, having started within the last three years; 65 percent had last shopped online for groceries in the last month or more recently. Significantly, when asked to indicate the proportion of total spend on groceries allocated to online, supermarkets, and other stores, respondents allocated 46 percent to internet grocery shopping, 41 percent to supermarkets and 13 percent to others stores. This is in line with the findings of Study 1, i.e. that internet and supermarket shopping are not mutually exclusive. Main findings of Study 2 Triggers for starting to shop online. Of the 1,128 responses we received, 908 completed the question related to situational triggers for starting online shopping. The respondents were asked to indicate the level of influence that each particular situational variable (e.g. mobility problems) had on their decision to start buying groceries online (the 20 variables are shown in Table II). We subjected these 908 responses to hierarchical cluster analysis using Ward's method in SPSS to determine whether there were identifiable groups of grocery shoppers in terms of the decision to begin buying online. The increases in the agglomeration coefficient suggested that there were five clusters; however, these were found to overlap considerably. Results of

Mosaic group	Frequency	Sample Percentage	National (percent)
Missing (no ID number)	12	0.90	–
A. Symbols of success	166	12.51	9.62
B. Happy families	179	13.49	10.76
C. Suburban comfort	219	16.50	15.1
D. Ties of community	192	14.47	16.04
E. Urban intelligence	98	7.39	7.19
F. Welfare borderline	48	3.62	6.43
G. Municipal dependency	56	4.22	6.71
H. Blue-collar enterprise	116	8.74	11.01
I. Twilight subsistence	36	2.71	3.88
J. Grey perspectives	114	8.59	7.88
K. Rural isolation	90	6.78	5.39
Unclassified	1	0.08	–
Total	1,327	100	100

	Cluster 1 mean	Cluster 2 mean	Cluster 3 mean	η^2
Mobility problems	1.1659	*4.3806*	1.3000	0.730
Health problems	1.2749	*4.2839*	1.3750	0.620
Shopping too tiring	2.0774	*3.2387*	2.1333	0.090
Had a baby	1.1422	1.0774	*4.1750*	0.680
Changed family circumstances	1.5608	1.7355	*3.9917*	0.300
Avoid shopping with children	1.6193	1.3226	*3.8750*	0.320
No time to shop	*3.0727*	2.0000	*3.3917*	0.090
Wanted more convenience	*3.3365*	*3.1419*	*3.6750*	0.010
Wanted more flexibility	*3.0521*	*2.7871*	*3.3333*	0.010
Avoid shops	2.4123	2.2000	2.5667	0.005
No car	2.1722	2.4516	1.6000	0.020
Recommendation	1.8025	1.6968	1.6250	0.003
Got broadband	1.7441	1.6581	1.6083	0.002
Got internet connection	1.7235	1.9484	1.5167	0.009
Changed working hours	1.4787	1.1935	1.3250	0.010
Got PC for first time	1.4360	1.5484	1.2417	0.007
Started working	1.3223	1.1032	1.1833	0.010
Changed job	1.3191	1.0452	1.0583	0.020
Moved house	1.2433	1.2194	1.7917	0.040
Got a pet	1.0948	1.1935	1.0583	0.005

Notes: Cluster 1 ("no reason"), $n = 633$; cluster 2 ("health"), $n = 155$; cluster 3 ("kids"), $n = 120$; total, $n = 908$

the three-cluster solution are presented here as these give the clearest picture. To determine whether differences between the clusters were significant, we used an effect size measure, h 2 , which can be derived from ANOVA results as the ratio of the sum of squares between groups to the total sum of squares. We used this measure in preference to performing one-way ANOVAs as our large sample size rendered the ANOVA test too sensitive (differences in responses too small to be of practical use were found to be statistically significant). The larger the value of h 2 , the greater the difference between the clusters; as a rule of thumb, 0.01 is a small effect, 0.06 is a medium effect and 0.14 can be considered a large effect (Cohen, 1988). The mean scores for each of our 20 statements for each cluster are given in Table

Discussion Situational factors have usually been ignored in consumer behaviour research, both in general and in the specific contexts of the adoption of technology and of

internet shopping, despite strong suggestions from theory (Bandura, 1977) of a continuous

IV. CONCLUSION

The project entitled ' Online Grocery Management System ' is very convenient for the Computer Companies. This system is very convenient for customer or users to buy online computer products. It can be observed that the information can be obtained easily and accurately. The online grocery shopping Software is made more user friendly to the users, so that anyone can run the software. Then this software provide permission to enter to the system via the login password credentials to the user who use this system. This project manages all the details about Computer Products.

In Future users can buy their identical products using mobile phones. This organization is very beneficial for both users and companies. This product has great future scope. Online grocery project established using web-based technology and for Windows too future versions of environments. This project also delivers security by using a security credentials like user id as well as password, so that any illegal users cannot practice your account. The only Lawful person that will consume proper admittance authority can use the online grocery shopping software.

REFERENCES

[1] PHP MySQL Website Programming: Problem - Design – Solution byChris
Lea, Mike Buzzard, Dilip Thomas , Jessey White-Cinis
[2] Beginning PHP5, Apache, and MySQL Web Development (Programmer to
Programmer) by Elizabeth Naramore
[3] MySQL/PHP Database Applications, 2nd Edition by Brad Bulger
[4] How to Do Everything with PHP and MySQL by Vikram Vaswani
[5] Auby, J.-F. (1994): “Les eaux minérales”, Presses Universitaires de France, collection Que sais-je?
[6] Belot, L. (2000): “L'eau en bouteille, bataille des géants de l'agroalimentaire”, in Le Monde, 23 May 2000
[7] Bertier, V. (1999): “L’exploitation des eaux minérales naturelles est-elle durable au regard du droit communautaire?”, Faculty of Law and Economic Sciences, Limoges
[8] Council Directive 80/777/EEC of 15 July 1980 on the approximation of the laws of the Member States relating to the exploitation and marketing of natural mineral waters, OJ L 229, 30.08.1980
[9] Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption, OJ L 229 30.08.1980
[10] Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption, OJ L 330, 05.12.1998