What explains routinized online grocery shopping? A study of experienced shoppers

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Abstract:

Online grocery shopping (OGS) became increasingly widespread among consumers worldwide during the Covid-19 pandemic. A challenge for e-grocers is to understand how the market will develop post pandemic, and to what extent, and in what ways, continued capital expenditure into developing the online platform is justifiable. A key component to understand better is how to retain existing online customers, especially those who are likely to continue with OGS. This survey study (n=412) investigated the underlying beliefs associated with routinized OGS among experienced online grocery shoppers in Finland. The survey was developed on the basis of a qualitative pre-study (n=14). The results suggest that the flexibility to synchronize meal planning and shopping, together with convenience, and a high sense of efficacy and control, are key factors associated with OGS developing into a routinized practice. Implications for retailers, limitations and further directions for research are presented.

Keywords: grocery shopping, electronic commerce, consumer behavior

Track: Retailing & Omni-Channel Management

1. Introduction

In Europe online grocery revenues amounted to €63.5 billion in 2022 and are expected to rise to €127.7 billion by 2027 (Grocery Delivery - Europe., n.d.). This suggests that OGS has substantial growth potential in the coming years in Europe, even if we could see a temporary dip in growth as the immediate Covid-19 crisis subsides and macroeconomic uncertainty poses consumers to cut discretionary spending. Furthermore, the service offering is growing and a broad range of different types of grocery retailers operate on the market (McKinsey, 2022). These different types of online grocers are transforming the entire concept of grocery shopping thereby making the online grocery retail market important to study.

While prior studies have established a number of determinants of OGS, few studies specifically distinguish between new or infrequent shoppers from those who have accumulated experience over a longer time. As Ajzen (2020) posits, the underlying reasoning behind a behavior is likely to change some when a person has gathered actual experience of it. Several studies corroborate this by showing that prior experience is positively associated with OGS (e.g. Loketkrawee & Bhatiasevi, 2018; Piroth et al., 2020). Nevertheless, only a few studies, have specifically investigated the motivations of those who have become regular shoppers, and who have already developed routines around their OGS activities. These loyal shoppers are not presently well understood, yet they are plausibly the surest source of dependable revenue for retailers who contemplate expanding and developing their online service offering under a time of great uncertainty. The present study sheds light on this under-investigated group and their reasoning around OGS.

2. Grocery shopping as routinized behavior

It has been proposed in the past that grocery shopping is low-involvement, habitual behavior (Thomas & Garland, 2004), or a routine entailing a sequence of predefined actions (Beharrell & Denison, 1995). Taking a less individualistic approach, grocery shopping can also be understood as a practice, ritualized and systemized to a varying degree in a household, thereby connecting the material, social, and temporal dimensions of various daily activities (Dyen et al., 2018). Common to all these approaches is that grocery shopping is portrayed as a behavior, or more precisely a sequence of actions, that follow recurrent patterns. It is also an activity that most households must take care of, on a regular basis. In this study we use the concept of routine (see e.g. Clark, 2000) and argue that routines that emerge around OGS are practical as routines generate many benefits: they economize time usage, facilitate the daily life

in a household, conserve cognitive resources and add convenience. Therefore, they also hold the potential to sustain the activity (Ong, 2006, pp. 36-39). Once the routine is in place, there is little upside in changing it as switching always incurs costs. Therefore, the degree of routinization of activities relating to OGS is of interest. Those with routines in place for OGS are plausibly the least likely group of shoppers to revert back to regular in-store shopping. Other Covid-induced lifestyle changes, such as remote work, may further help sustain the new routines (Roggeveen & Sethuraman, 2020).

Conceptually, habits are thought to develop through repetition such that when a behavior is performed repeatedly in the same context, its initiation no longer requires active cognitive effort but is cued and prompted by the context, without awareness, control, or explicit intention (Gardner & Rebar, 2019). Similarly, to habits, routines are recurrent behavioral patterns, sometimes incorporating multiple actors (Cohen & Bacdayan, 1994). They can be understood as higher-order habits that entail a chain of steps required to reach an outcome (Clark, 2000). We argue that OGS involves several acts and activities, which together form a sequence that becomes routinized over time. The more routinized OGS becomes, the more likely it is that it is repeated and maintained. This study investigates what beliefs underlie routinized OGS.

3. Method

The study was carried out in two phases. First, an online qualitative belief elicitation study with open ended questions was conducted with 14 participants. This study took guidance from the procedures recommended by Fishbein and Ajzen (2010; see also the manual by Francis et al., 2004) and is published separately. Second, based on a thematic analysis of the qualitative data, belief items were created for the questionnaire and used in a survey study among Finnish online grocery shoppers, which this study is now based on.

The survey data was collected in February 2022 from an online panel of Suomen OnlineTutkimus (a Finnish research company) covering all major regions of Finland. The screening criteria for participation in the survey were (1) a minimum of six months regular online grocery shopping experience and (2) a purchase frequency of at least once monthly. The final sample (n=412) included both consumers, who started OGS before and those who started during the pandemic. Ca. 60% of them estimated that during the month of the survey more than 30% of their total grocery purchases were shopped online, confirming that the participants are experienced shoppers. There was a relatively even distribution between male and female respondents (48.1% male/50.5% female/0.4% other) in the sample. The age distribution was

even for 18-40 years (40.7%) and 41-60 years (41.8%), but smaller for the age group 60+ years (17.5%).

As there are no ready measures for routinized OGS, a measure was developed for the study using five items to capture the overall routinization (similar to habit formation scale by Van Drooogenbroeck and Van Hove, 2021) and typical steps in the process of buying groceries online, from meal planning to delivery. The respondents were asked to consider, to what degree these apply to themselves or their own household, on a scale of seven from completely disagree to completely agree. The items were: buying groceries online has become a routine; I/we use a ready grocery list as the basis for our online order; I/we have a regular routine for how to add items [to the basket] and make the next order; I/we have a regular routine for how to plan the meals and needs for the next order; I/we have a regular pick up/delivery time that we try to get. The internal consistency for this normally distributed variable was high (α=0.85).

The independent variables were created (taking guidance from Fishbein & Ajzen, 2010), as follows. The items for the survey were formulated based on the belief elicitation study, in which the respondents were asked open-ended questions about advantages and disadvantages with online grocery shopping (behavioral beliefs), whether there were any groups of people who approved or disapproved of buying groceries online (normative beliefs) and about factors that facilitate or impede online grocery shopping (control beliefs). The respondents were also asked about what they liked or disliked about shopping groceries online, and whether there was anything further they wanted to add to ensure that they could bring forward any ideas not captured earlier. Altogether 27 items pertaining to behavioral and control items were used in the survey. No groups, who approved or disapproved of OGS, were identified. See Table 1. An exploratory factor analysis (EFA) established that the items load on intended factors (KMO = 0.867; Bartlett's sphericity $p<0.001$). The factors were extracted using Principal axis factoring with Oblimin rotation. The EFA generated six factors, two pertaining to positive and two to negative behavioral beliefs, and further two to control beliefs. The two factors relating to positive behavioral beliefs were labelled *Convenience* and *Assistance*. The two factors relating to negative behavioral beliefs were labelled *Order Process* reflecting process related challenges, and *Service quality* reflecting concerns with product or service quality. Control beliefs were labelled *Sense of control* and *Loss of control*. Two items loading on two factors were reassessed using maximum likelihood extraction and by assessing their content. The composite scores for the six belief-factors were created in accordance with the EFA.

	Conve-nience	Assis -tance	Order process	Service quality	Sense of control	Loss of control	Comm unality	α
It makes my life easier	**0.77**						0.657	.75
It saves time	**0.72**						0.553	
I don't need to queue and can avoid in-store hassle	**0.68**						0.507	
I don't have to carry heavy bags	**0.49**						0.316	
I avoid getting corona	**0.30**						0.203	
I can look at the recipe and add items at the same time		**0.77**					0.666	.82
I get help planning the meals (ideas, suggestions)		**0.70**					0.566	
I can do better meal planning		**0.63**					0.646	
I avoid impulse purchases		**0.54**					0.391	
I can't figure out the user interface in the web shop			**0.76**				0.636	.85
I can't find the products easily or fast			**0.67**				0.518	
Something goes wrong in the process			**0.65**				0.668	
Less variation in the meals - we always order the same things			**0.58**				0.482	
Available delivery times are too long or inflexible			**0.43** **0.50***	0.45 0.32*			0.531	
Replacement goods leave much to hope for				**0.70**			0.637	.79
Vegetables and fruit do not meet my quality standards				**0.66**			0.629	
I can't get all the items I want				**0.64**			0.510	
I have to pay too much for the delivery/pick up				**0.46**			0.363	
I can shop for groceries online any time I want to					**0.73**		0.651	.82
Buying groceries online requires planning which is easy for me					**0.70**		0.516	
Buying food online is easy for me					**0.67**		0.594	
I feel that the shopping process can be controlled just as well when you buy online as opposed to in-store					**0.63**		0.485	
I feel that it adds control when I can place an order or make changes to it any time or place					**0.53**		0.431	
The online shopping process is affected primarily by things that I can influence					**0.51**		0.368	
I can order and add items to basket any time I like	0.39 0.29*				**0.28** **0.33***		0.412	
I am bothered by someone else selecting vegetables and fruit – or other perishables – for me						**0.76**	0.632	.63
You do lose some control over your grocery purchases when you shop online						**0.50**	0.337	

*) loadings when using maximum likelihood method

Table 1. EFA; total variance explained 51.5 %, loadings <0.30 not included

4. Results

Table 2 displays means and standard deviations of the variables used in the models and correlations between them. Since *Order process, Service quality* and *Loss of control* did not correlate statistically significantly with routinized OGS, they were not included in the regression model. Table 3 presents the multiple linear hierarchical regression analysis. The model explains 25.3% (R_a^2=.253, F(3,408)=47.488, p<.001) of the variance in routinized OGS. *Assistance* and *Sense of control* share independent variance with routinized OGS, with quite equal weights. There were no issues with multicollinearity, outliers, or residual statistics.

	Mean	SD	1.	2.	3.	4.	5.	6.
1. DV: Routinized OGS	4.2	1.5						
2. Convenience[a]	-	-	.22**					
3. Assistance	4.2	1.4	.44**	.27**				
4. Order process	3.8	1.4	.08	.07	.25**			
5. Service quality	4.6	1.3	-.08	.08	.10*	.58**		
6. Sense of control	5.3	1.0	.40**	.34**	.36**	-.09	-.04	
7. Loss of control	3.4	1.5	-.07	-.08	-.11*	-.38**	-.46**	.04

[a] dichotomous ** Pearson's r correlations significant at p<0.001 level; * significant at p<0.05 level (two-tailed)

Table 2. Means, SD, and correlations between model variables (n=412)

	β	p
Convenience	.05	.290
Assistance	.33	<.001
Sense of Control	.26	<.001

Table 3. Predictors regressed on Routinized online grocery shopping

5. Discussion and conclusion

Our results suggest that *Convenience*, *Assistance*, and *Sense of control* explain a reasonable amount (25%) of the variance in routinized OGS among experienced online grocery shoppers. More specifically, the results suggest that key factors underlying routinization of OGS with experienced buyers are the ability to coordinate meal planning and ordering phases smoothly, and get ideas and help in that process, combined with a high sense of control. This, in turn, refers to the respondent's ability to plan and freedom to shop and make changes to the order at any time, and the sense of ease and efficacy in the process. *Convenience* resulting from saving time and avoiding in-store discomfort is also associated with routinized OGS with experienced online shoppers, but its contribution to the shared variance was taken up by the other variables.

We consider the element of *Assistance* an important new finding as those who start shopping online might operate more on the basis of their perceptions or imagined ideas, or occasional experiences, whereas those who have accumulated experiences know the actual pros

and cons. This concurs with Van Droogenbroeck and Van Hove (2021) who established differences between non-adopters and adopters. For many experienced shoppers OGS may already be an element in a larger meal planning routine and they may be hoping for new features that assist them even more in the meal planning and order process.

Disadvantages identified initially in the elicitation study were confirmed in the survey as important factors, such as challenges with the user interface or making an order (*Order process*), or concerns relating to product quality, product range or incremental costs (*Service quality*). They did not, however, correlate with routinized OGS. They were considered as important negative outcomes for the participants in our sample, but they were not influential on routinized OGS. Also, the often-mentioned concern over vegetables and fruit quality, or that someone else picks them, had no impact on the degree to which online shopping had become routinized in our sample. The content analysis by Klepek and Bauerová (2020) listed it as a major obstacle for adopting OGS, but few studies have empirically tested it, apart from Singh and Söderlund (2020) who found a weak but significant correlation between product quality and customer experience, which in turn predicted repurchase intentions. This suggests that perceptions of experienced customers based on their real experiences differ from the "imagined" concerns of less experienced shoppers.

Sense of control was found to be important for explaining routinized OGS, in line with prior studies suggesting that perceived behavioral control was associated with OGS intentions or continuance intentions (e.g. Wu & Song, 2021). For those who have been shopping online for a while, a sense of competence and ease has evolved. In studies that use Technology Acceptance Model as a theoretical lens, perceived ease of use captures similar ideas as Sense of control, and is usually positively related to OGS or OGS intentions (e.g. Driediger & Bhatiasevi, 2019). Having control over one's life is a fundamental need of human beings, containing motivational potential (e.g. Deci & Ryan, 2000). For many working adults being able to manage the weekly meal planning in such a way that it saves time but also enables sustainable and healthy choices, can be very attractive. A strong sense of being in charge, facilitated by a well-functioning user interface, may well boost this.

Importantly, the present study conceptualizes OGS as a routinized behavior consisting of several interconnected actions (e.g. Beharrell & Denison 1995) and argues that the degree to which individuals/households have established routines around their OGS is a telltale measure of their present behavior, and a reasonable indicator of their future intentions. Routines are practical and generate many benefits, which is why they have the potential to sustain

themselves, in line with Van Droogenbroeck and Van Hove (2021), whose study showed that habits predicted intentions to continue to shop online. There is some evidence of stickiness in Covid-induced OGS (Salon et al., 2021) but not yet much research into the underlying reasons. The present study showed that assistance in meal planning, integration of planning and ordering, and a strong sense of behavioral control were more strongly associated with OGS becoming routinized than convenience or the frequently mentioned concern over product quality, or issues with website usability. It seems that for the "serious" shoppers, OGS is a step in a larger exercise of meal planning, which may include healthy diet planning, ecological choices, budgeting needs etc. OGS may be best understood as part of the larger household daily life, as suggested by other recent studies (e.g. Fuentes et al., 2022; Samsioe & Fuentes, 2022).

This study suggests that habits and routines built around OGS follow from perceived advantages, *Convenience* and *Assistance*, combined with a strong *Sense of control* in the process. This is an important aspect to understand better and therefore an important avenue for future research to explore further, and study in different markets and contexts.

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