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## Older consumers' views on online grocery shopping

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### Abstract

The population is aging fast in many developed countries worldwide, which makes older consumers important to study. This study investigates older consumers' (>55 years) views on online grocery shopping (OGS) by comparing them to younger consumers and by clustering them into different segments. The study is conducted as a survey with 1025 older Finnish consumers. The findings indicate a statistical difference between older and younger consumers' views on OGS but also that the difference is not substantial. Three tentative clusters are also identified: the uninterested, the indecisive and the open-minded. The open-minded had clearly gained awareness about OGS and shopped online during the Covid-19 crisis. Some of them also intend to continue to shop groceries online in the future. Limitations and further research are also discussed.

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**Keywords:** e-Commerce; older consumers; grocery retail; segmentation.

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### 1. Introduction

Older consumers, defined in this study as those over 55 years, are an important segment for marketers and developers of digital services [17]. Many countries, especially developed countries worldwide, are increasingly facing aging populations. According to the UN [19] the global population aged 60 years or older reached 962 million in 2017,

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just shy of a billion, which is more than twice the size of this age group in 1980. In Finland, where the present study was conducted, the population is aging fast, and the share of persons aged 65 years or older is estimated to rise to 28% of the population by 2060 [2]. Among older consumers, work life engagement is declining gradually and retiring will decrease their regular income. However, the income per household member will not decrease much as the children have usually moved out at that time [17]. Thus, this segment is not only growing but has significant purchasing power, which makes it interesting to study from a retailer and technology use perspective.

Aging brings about changes in consumers' needs, desires and capacity [21]. Food again is a basic human need and important at any age, but it becomes even more important among older adults to ensure healthy aging [11]. The Covid-19 pandemic has overall increased online grocery shopping (OGS) in all age groups and in many countries, such as Finland [8]. According to Statistics Finland [1] 14% of the adult population (ages 16-89 years) in Finland had ordered groceries from stores online over the previous 3 months in 2022, up from 8% in 2020. OGS has often been shown to best suit busy families with children [4, 24]. However, according to Kvalsvik [11] OGS can reduce food access barriers for older adults (62+ years) and, thus, it would be reasonable to assume that some older adults would eagerly embrace OGS. In fact, due to the pandemic many older consumers have spent more time online than before and discovered options they did not know existed. Previous research has also suggested that there is a need for grocers to target different segments, such as the elderly segment, to create value in OGS [22]. Furthermore, a better understanding of consumer OGS patterns during and past Covid-19 is needed [12].

In this study, based on data from a large-scale survey conducted in Finland in autumn 2022, we investigate how the older consumers' (>55 years) views on OGS compare to those of younger consumers on the Finnish market. We also seek to identify differences among older consumers by clustering them into three segments according to their views on OGS.

## 2. Older consumers and OGS

There is some evidence that older consumers (>55 years) are more risk averse, and less confident, than younger consumers when it comes to adoption of new technological solutions, such as digital solutions for banking [17] and digital health solutions [18]. However, the study by Niemelä-Nyrhinen [23] established that the elderly (baby boomers) in Finland have, generally speaking, a low level of technology anxiety. Therefore, we should be very careful not to over-generalize the stereotypical perception of 'digital fumlbers' to all older consumers. Sell & Walden [7] portrayed the young elderly (60-75 years) in Finland as diverse technology users and identified five distinct segments among them varying from 'pioneers' to 'hesitators'. Also, Pesonen et al. [15] concluded that seniors in Finland are quite heterogenous regarding information technology use for digital travel services and distinguished three types of them: the adventurous experimenters, the meticulous researchers and the fumbling observers. Likewise, Fabricius & Eriksson [16] identified heterogeneous use of social media services for travel purposes among young elderly (60-75 years) consumers. They tentatively named them Disinclined, Opportunistic and 2.0 social media users. Seitz et al. [3] again named older adults (65+ years) in Germany with interest in online shopping as SilverSurfers. However, there seems to be few attempts to segment older consumers within OGS.

According to Seitz et al. [3] interest in OGS among older persons (65+ years) is affected by two contradictory motives: (1) OGS is perceived as an effective way to overcome the physical burden of grocery shopping, especially for elderly suffering from reduced mobility and physical impairment, (2) older consumers perceive traditional grocery shopping to be a spare-time activity and an opportunity to be in the midst of other people. Kvalsvik [11] found in Norway that health, mobility issues, and the distance to a store are the main situational factors driving older adults (62+ years) to buy groceries online. A Canadian study also supports that physical and motorized mobility loss are important drivers for future OGS among older consumers (60+ years) [13]. However, they also conclude that the attitudes and subjective norms of these consumers are important drivers of future OGS. Eriksson & Stenius [8] again identified in Finland that women more than men (45+ years) had adopted OGS during Covid-19 and those who worried about own health and/or that of a loved one may have been more likely adopters. Among younger consumers they did not find gender differences and therefore concluded that gender may be differently predictive in different age groups. More research is clearly needed to understand OGS for different demographics. The present study contributes to this by comparing younger and older consumers' views on OGS and by seeking to identify differences among older consumers.

### 3. Method

The survey data was collected during 15.11. - 30.11.2022 from a consumer panel (18-79 years), by the Finnish retail research foundation and the marketing research company Taloustutkimus (Data: [5]). In total 2697 Finnish consumers were surveyed. The sample is representative of a Finnish adult population according to age, gender and sub-regional quotas, and is therefore ideal for the present study. Representativeness of a population is very important when conducting explorative cluster-research [6]. Out of the total sample 1025 (38.2%) were older consumers (>55 years). However, as there were 136 missing value or “can’t say” answers, 889 respondents were included in the cluster analysis. The share of women in the total sample was 51.2%.

The questionnaire included a large set of questions on consumers’ perceptions of different retail topics. For the purposes of this study we focused on the five variables regarding OGS and background variables for older consumers. The five questions on OGS are presented in Table 1. They were measured on a Likert-type scale from 1 (=completely disagree) to 7 (=completely agree), anchored with a label only at the end points. The demographic and household characteristics for older consumers ( $n=889$ ) are presented in Table 3. The original variable for occupation included several options, but for this study it was recoded into two groups “Retired” and “Other”. The rationale behind this was that for older consumers being retired or active in working life could make a difference, for example, in purchasing power. With similar rationale we divided the settlement type into “Larger city (+50.000 residents)” and “Smaller city or municipality”, household size into “Single household” and “Two or more”, age into “65+ years” and “56-65 years”, and household income into “Higher income” and “Lower income”. The cut-off for higher annual income was set at more than EUR 50.000.

### 4. Results

Table 1 displays descriptive statistics for the five OGS related variables for older and younger consumers. Mann Whitney U Test suggests that the differences evident in the sample statistics between the two groups are statistically significant but small to moderate in effect size ( $r=.1$  to  $.3$  according to Cohen [25]) for all five variables. The smallest difference was found for ‘The corona crisis increased my awareness of the possibilities of OGS’,  $U=724740$ ,  $Z=-4.51$ ,  $p<.001$ ,  $r=.09$  whereas the largest difference was for ‘I plan to buy groceries online in the future’,  $U=452311$ ,  $Z=-16.29$ ,  $p=.000$ ,  $r=.33$ . In other words, the older consumers are less positive about OGS, they have learned and shopped less online during Covid-19 and they intend also to shop less online in the future. Furthermore, they are more into buying their groceries from a conventional store.

Table 1. Older and younger consumers’ views on OGS

Variables	Group	<i>n</i>	Median	Mean	SD	% Agree*	CI 95% for %Agree
1. Corona crisis increased my awareness of the possibilities of OGS	Older	991	5	4.4	1.95	33.4	[30.5 - 36.3]
	Younger	1631	5	4.7	1.85	38.5	[36.1 - 40.9]
2. During the corona crisis, I have used an online grocery store	Older	1018	1	2.1	2.06	13.2	[11.1 - 15.3]
	Younger	1647	3	3.5	2.45	28.8	[26.6 - 31.0]
3. I have a positive attitude towards OGS	Older	975	5	4.4	1.96	35.0	[32.0 - 38.0]
	Younger	1625	5	5.1	1.52	45.6	[43.2 - 48.0]
4. I plan to buy groceries online in the future	Older	936	2	2.4	1.76	7.7	[6.0 - 9.4]
	Younger	1560	4	3.7	2.05	21.9	[19.8 - 24.0]
5. I prefer to buy groceries in a store rather than online (reverse scale)	Older	1019	7	6.4	1.11	84.3	[82.1 - 86.5]
	Younger	1645	6	5.8	1.52	65.1	[62.8 - 67.4]

\* Answered 6 or 7 on the scale: 1, totally disagree – 7, totally agree. All variables have a minimum value of 1 and a maximum value of 7.

We performed a hierarchical cluster analysis in IBM SPSS™ 28 with the five variables in Table 1, using Ward’s method and Squared Euclidean distance as measure. A hierarchical procedure is good when an exact optimal solution for a given number of clusters is not practical and the Ward’s method creates relatively even-sized clusters [6]. The results were analysed in the range of 2-5 clusters. Based on the cluster sizes, distances in the dendrogram and by the

logic of differences in median values for the clusters (see Figure 1.) we decided upon a three-cluster solution. As the five variables are not composite scores or normally distributed, we used a non-parametric test (Kruskal-Wallis) and the median scores to test differences between the three clusters in the five OGS related variables. The cluster differences were all significantly different (See Table 2).

Based on the differences between the clusters, we label and describe them as follows:

- The uninterested: For them OGS is irrelevant. The pandemic has not increased their awareness of OGS and they are not positive about OGS, neither have they shopped for groceries online during the pandemic and they do not intend to.
- The indecisive: They have gained awareness about OGS during the pandemic and are quite positive about it, but they have not transformed their quite positive attitude into action (buying groceries online).
- The open-minded: They have clearly gained more awareness about OGS and shopped online during the pandemic. Some of them (not all) also intend to continue to shop groceries online in the future.

All groups have a high preference for shopping in conventional grocery stores, albeit some of the open-minded also intend to continue, at least partially, with OGS. The biggest cluster is the uninterested 51% (454), followed by the indecisive 26.5% (236) and the open-minded 22.5% (199).

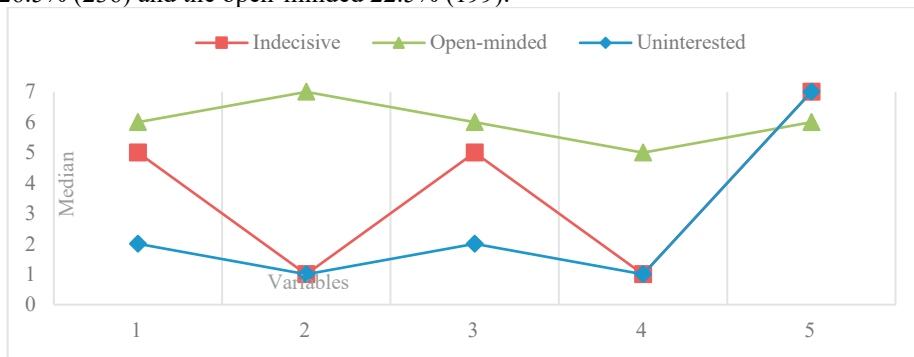


Fig. 1. Median values for the three clusters and the five variables.

Table 2. Differences between the three clusters in the OGS related variables

Variables	Uninterested n=454 Median	Indecisive n=236 Median	Open-minded n=199 Median	$\chi^2$ / df	P
1. The corona crisis increased my awareness of the possibilities of OGS	2	5	6	513.7 / 2	<.001
2. During the corona crisis, I have used an online grocery store	1	1	7	739.8 / 2	<.001
3. I have a positive attitude towards OGS	2	5	6	314.1 / 2	<.001
4. I plan to buy groceries online in the future	1	1	5	389.4 / 2	<.001
5. I prefer to buy groceries in a store rather than online (reverse scale)	7	7	6	144.5 / 2	<.001

Next, we profiled the clusters according to background variables. Statistically significant differences between clusters were established for gender  $\chi^2$  (2, n = 889) = 11.590,  $p < 0.01$ ,  $\phi = .114$ , for age  $\chi^2$  (2, n = 889) = 7.716,  $p < 0.05$ ,  $\phi = .093$  and for settlement type  $\chi^2$  (2, n = 889) = 10.651,  $p < 0.01$ ,  $\phi = .109$ . It should be noted that the  $\phi$ -values are on a small to medium level (.07 - .21), which indicates moderate effect sizes for these background variables. The results suggest that women and consumers living in larger cities are overrepresented in the open-minded group. The indecisive group is slightly overrepresented by older (65+) consumers. See Table 3. The differences in household size, household income and occupation were not statistically significant in the crosstabs-analysis.

Table 3. Demographic and household characteristics of the clusters. Bolded numbers are contrasts.

Cluster	Gender: Female %	Household size: Single %	Income: 50.000+ %	Age: Older 65+ %	Settlement: Larger city %	Occupation: Retired %
The uninterested n=454	50.2	33.5	44.4	41.0	61.9	59.7
The indecisive n=236	41.9	32.6	37.2	<b>51.7</b>	57.6	64.4
The open-minded n=199	<b>58.3</b>	26.6	49.1	42.2	<b>72.4</b>	57.8
Total n=889	49.8	31.7	43.6	44.1	63.1	59.7

## 5. Discussion and conclusion

The aim of this explorative study was to gain a better understanding of older consumers' views on OGS. The results showed, not surprisingly, that older consumers overall are less positive about OGS, purchase less groceries online, and prefer conventional grocery stores more often than younger consumers. However, the results also indicated that the difference is not very large (small to moderate effect size  $r=.09$  to  $.33$  for all five variables) and that there is a segment of older consumers who are positive about OGS and some of them intend to shop, at least partially, their groceries online going forward. We referred to them as open-minded, as they had clearly gained more awareness of OGS during the pandemic and they had also shopped for groceries online during the pandemic. Interesting is that these open-minded are slightly more often women than men. Generally, older women have been portrayed as more sceptic and hesitant regarding new technological solutions in Finland [7] and in the EU older women (55-74 years) are, generally speaking, less active online than men [14]. It is possible that these older women, clustered as open-minded may have picked up OGS during the pandemic for health concerns. In fact, Eriksson & Stenius [8] identified that older women and those who worried about health issues were the ones most likely to have adopted OGS during the pandemic. In this case it could mean that these women felt a stronger need to protect themselves from an external health threat and that this concern overweighed their personal hesitancy regarding online shopping. Our results suggest that not all open-minded intend to shop online going forward (not as many as during Covid-19), which may reflect a perception that the pandemic has ebbed out and, thus, the triggering condition, the health concern, no longer exists in the same way. This is also in line with previous research showing that when the triggering condition disappears the consumers might discontinue OGS [2]. An alternative explanation aligns with Brüggeman and Olbrich [12], who suggest that online grocers may have to some degree failed to convince consumers of the benefits of OGS during the pandemic and that they may now have a hard time retaining their online customers. It could, however, also simply be that many older consumers, especially those who have stayed at home extensively during the pandemic, long to be among other people and going to a grocery store is an easy way to accomplish this. Going to a grocery store as a spare-time activity is according to Seitz et al. [3] reducing the use of OGS among older consumers. Over the long term the OGS market is, nevertheless, expected to grow [9, 10, 12]. The results in this study indicate that it is mostly in the urban centers that this growth may take place among older consumers, as living in a larger city was overrepresented in the open-minded cluster. This is not surprising as, for example, delivery and courier services are more available in larger cities. Besides that, older persons classified as technology pioneers in Finland have been shown to be predominantly city-dwellers [7].

We also identified two other clusters, namely the indecisive and the uninterested. The indecisive group was slightly overrepresented by older (65+) consumers and the group indicated awareness of and quite positive attitudes toward OGS, which, however, has not translated into action (buying online). For this group, factors such as mobility issues and physical impairment could push them to purchase groceries online [3, 11, 13]. Providing them with digital assistance could further help them adopt OGS. The uninterested, to which a majority of the older consumers belonged to, seem indifferent about OGS. No particular demographic and household characteristic could be connected to the uninterested cluster.

To sum up, our first conclusion is that there are differences between older and younger consumers' views on OGS but that these are not substantial. This aligns with recent research [7] suggesting that age as a predictor for digital technology use diminishes in importance in societies where the share of technologically experienced older consumers increases. Other drivers such as attitude and situational factors are likely to become more important. Our second conclusion is that we could identify three meaningful segments of older consumers regarding their views on OGS. There is clearly a segment that is positive about OGS and some of them intend to shop, at least partially, their groceries online going forward but the segment is at present rather small relative to the total older consumer population. Some nuances in background characteristics were identified for the segments. Women and big-city dwellers were overrepresented in the open-minded whereas older (65+) consumers overrepresented the indecisive segment. It is important for retailers to note that more and more digitally literate individuals enter the segment "older consumers", and to develop their online services with this in mind.

This study is not without limitations. In the data collection we relied on survey data from a study conducted by Taloustutkimus and the Finnish retail research foundation and could not influence the contents of the questionnaire. The five variables used to cluster the older consumers could have had a broader scope. For example, the questions

could have considered consumer motives for OGS more broadly. Therefore, the results from this cluster-analysis are tentative and the study could be replicated with a more nuanced set of questions related to attitudes toward and motives for OGS. It should also be noted that Finnish OGS is still in an early stage, although it has evolved a lot during the pandemic. In more mature OGS markets the segment characteristics may be different. Thus, cross-national segmentations could be applied.

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