

# Young consumers' tendency to use a smartphone as decision-support inside clothing stores

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## Abstract

This study explores young consumers' tendency to use a smartphone to support decisions in a clothing store. A cluster analysis is conducted based on results from a student survey. The findings generated three tentative clusters, namely the occasional users, the digitally assisted and the conventional shoppers. Comparing prices online with a smartphone while inside the store seems to be the main differentiator between the groups. These findings are important for retailers that strive to defend from showrooming effects and create new customer experiences from mobile technology solutions. Managerial and practical implication are discussed, together with future research.

**Keywords:** consumer behavior, smartphone, clothing retail, cluster analysis, omni-channel

## 1 INTRODUCTION

An increasing number of Nordic consumers are buying what they need online. More than eight out of ten consumers have, at some point during the year, bought products online (PostNord, 2016). According to the same survey, one out of three Nordic consumers buy products online at least every month. In another survey by Accenture (2016), global online consumers are increasingly purchasing apparel online, 76% in 2015 versus 80% in 2016. Apart from the online channel, the current trend points towards a technological transformation of the brick-and-mortar stores (Accenture, 2016). New technology will forever change the physical store as we know it, and will push towards a type of "smart store", where data is stored, used and utilized with different types of mobile devices and sensors to create customer value, and a new purchasing experience. The physical store,

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including its critical activities, e.g. window shopping, trying on clothes, comparing prices, getting information, payments, is likely to change dramatically (Piotrowicz and Cuthbertson, 2014). The retail landscape is rapidly evolving into future solutions (Grewal et al., 2017). The fashion retail sector is moving towards new in-store technology based shopping experiences (Blázquez, 2014), and the retail industry as a whole is evolving towards omni-channel experiences, where the distinction between physical and online experiences is being blurred (Piotrowicz and Cuthbertson, 2014; Brynjolfsson et al., 2013). Adoption of smartphones and the growth of mobile Internet penetration are two contributors to this change (Blázquez, 2014). According to Accenture (2016), global apparel shoppers are nowadays demanding more services through their smartphones while visiting the store. The younger cohorts are generally the frontrunners of Internet use with a mobile phone (Statistics Finland, 2016). In addition, the younger cohorts seem to value the retail experience and the in-store service less than older cohorts (Parment, 2013). Brick and mortar retailers also need to defend from showrooming effects, where products are tried in-store but purchased through other channels (Sourabh et al., 2017). A better understanding of young consumers' use of smartphone when shopping clothes would be beneficial for the retail industry. Therefore, the aim of this study is to explore young consumers' tendency to use a smartphone as decision support in a clothing store. This is conducted by tentatively clustering the survey respondents into groups according to their tendency to use a smartphone for decision support while visiting a clothing store.

## **2 SMARTPHONE AS DECISION-SUPPORT IN-STORE**

Mobile technology enables consumers to make more informed decisions, receive more personalized offers and gain faster service (Grewal et al., 2017). The smartphone is used in different ways to support decision-making in the store. According to a survey by Euclid Analytics (2017) consumers use smartphones for general use (phone calls, texting, emails, using apps), to compare prices, take picture of products, chat with friends or family regarding purchasing alternatives and look up email promotions. Especially the young generation seems to be, according to the same survey, the primary users of a smartphone in-store. According to another survey, 33.9% of Turkish respondents often used a mobile phone for in-store shopping activities and 28.1% sometimes (Nasir and Kurtulus, 2016). The same survey also investigated 16 different mobile phone activities in the store. The three most common activities for apparel in-store smartphone use were "Product information search", "Price search and comparison" and "Calling for advice". Also "sending product photos to take advice" scored high proportions in that study. In addition, in that particular study the same activities scored high usage proportions for all the other product categories investigated; consumer electronics, home improvement, groceries and Books/CDs/DVDs. The smartphone is likely to be used for product and price searches, especially in consumer electronics and home improvement stores. When studying multi-channel behavior for fashion shopping, Blázquez (2014) found that "search for information online" was the most common activity prior to shopping in store, "compare prices online" second, and, "look for inspiration in forums, blogs, social networks" third. According to the same research, among the older generation there seemed to be a gender gap in online activities, women use more blogs and social networks for inspiration than men, but no gender differences were found for younger shoppers.

In order to achieve the aim of this study, we will focus on three activities of smartphone use for consumer decision-support in a clothing store: 1) search for product information on the Internet, 2) compare prices on the Internet, and, 3) ask for advice (e.g. send picture of a product to friends for advice or comments). All three decision support activities scored high on online usage proportions in previous studies, as discussed above.

### **3 METHODOLOGY**

#### **3.1 Data collection**

A convenience sample of 154 (seven cases were taken out due to missing data) students in a business program at Arcada University of Applied Sciences in Helsinki (Finland) were targeted with a questionnaire during fall 2016. The questionnaire was divided into sections: background variables, shopping styles, tendency to online clothing shopping and tendency to use a smartphone while visiting a clothing store.

Eleven respondents did not respond to the gender question. However, we did not exclude them from the sample as the questionnaire was otherwise properly filled out. The final sample consisted of 76 males and 67 females. The average age was 21.5, with the youngest being 18 years old and two respondents over 30 years old. Of the respondents 128 (83.7%) were Finnish, and 25 (16.3%) were of other European or Asian nationality. Only a few (9.7%) reported that they never look at clothing online, and a distinct minority (16.9%) reported that they never use their smartphone to look at clothing online.

#### **3.2 Measures**

The tendency to use a smartphone as decision support while visiting a clothing store was measured based on three activities (as discussed earlier); search for product information on the Internet, compare prices on the Internet, and ask for advice (e.g. send picture of a product to friends for advice or comments). The frequency scores were based on the question “How frequently do you use your smartphone for the following activities while visiting a clothing store?”. The importance score were based on the question “How important is it for you to use your smartphone for the following activities while visiting a clothing store?”. These were measured on a 5-point scale, where frequency was measured from “Never” to “Always”, and importance from “Not at all important” to “Extremely important”. See Figure 1 and 2 for the exact scales.

## 4 RESULTS

### 4.1 Tendency to use smartphone in-side a store for decision-support

Figure 1 shows that we have a wide distribution of smartphone use frequency while visiting a clothing store for all three investigated decision-support activities. The most regular activity seems to be “Compare prices on the Internet” (11.7% answer always and 26.6% often). According to proportion, the decision-support activity “Ask for advice” seems to be the least used (19.5% never and 22.7% seldom). The mean values for use frequency follow a similar pattern, “Compare prices” with the highest mean value and “Ask for advice” with the lowest mean value (see Table 1). The symmetrical distribution of skewness is close to zero for all three activities. It should be noted that that also for “Search for product information on the Internet” only 13.6% answered never and for “Ask for advice” 19.5% answered never.

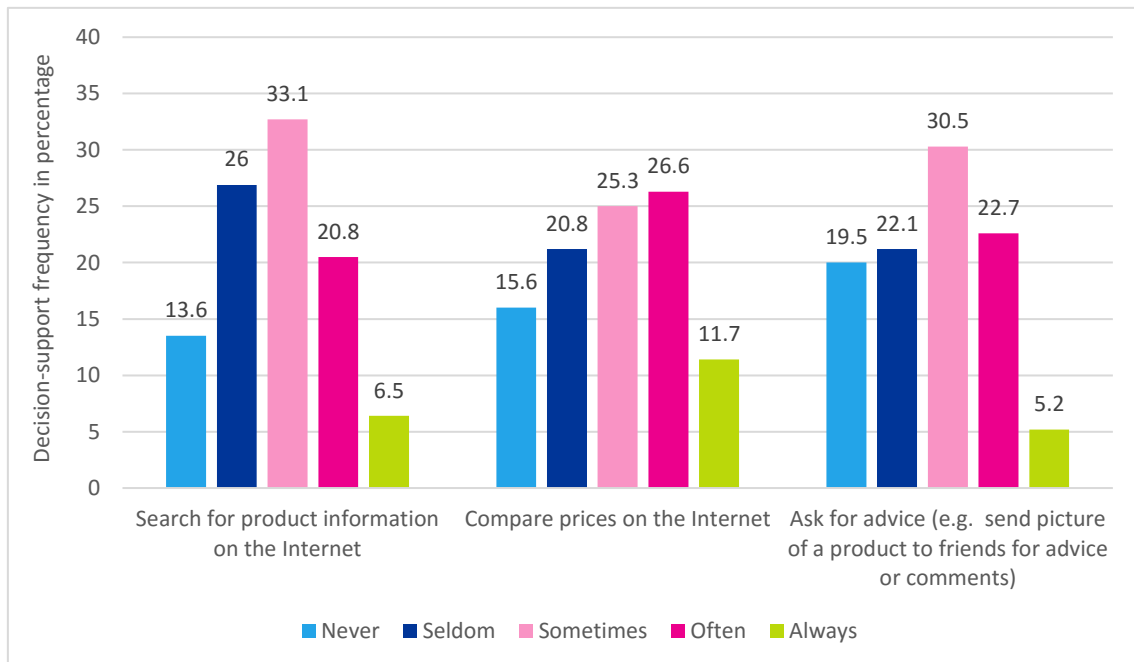


Figure 1. Frequency (“Never” to “Always”) of smartphone as decision support while visiting a clothing store. Percentage of 154 respondents.

Based on Figure 2 we can see that we also have a wide distribution of perceived importance of smartphone use while visiting a clothing store for all three investigated activities. However, the results seem to be slightly skewed towards “Not at all important” and “Slightly important” scores for all three investigated decision-support activities. Skewness scores in Table 1 are positive towards the left tail. “Compare prices on the Internet” scores the highest importance score (17.5% very important and 6.5% extremely important) and the mean value (2.59) is the highest of the three activities.

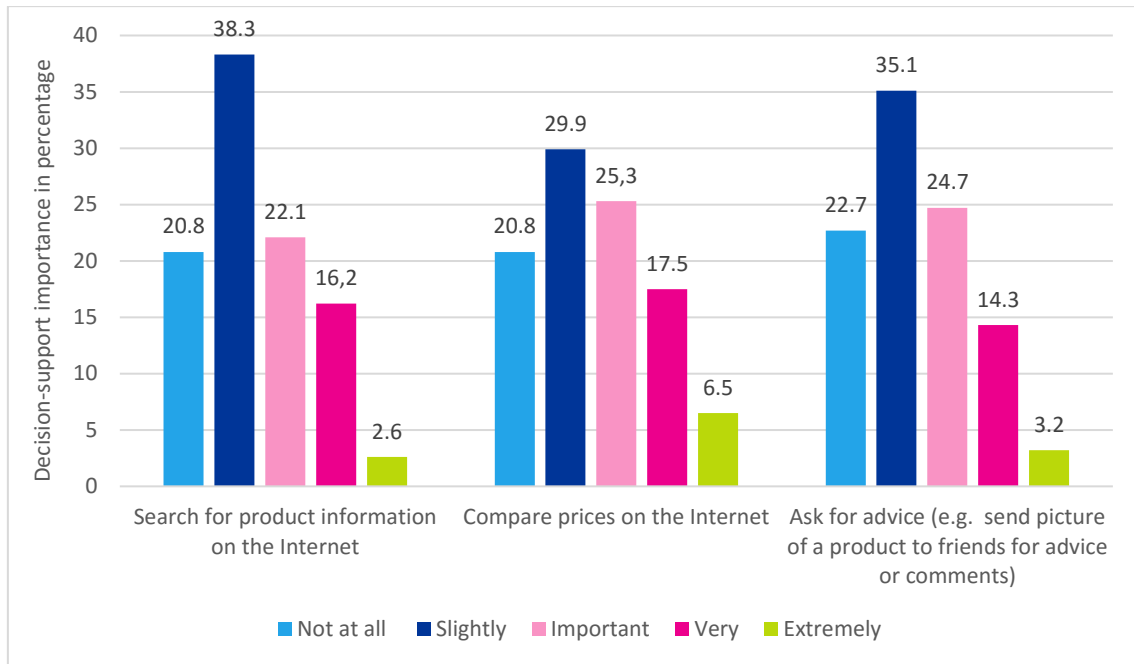


Figure 2. Importance (“Not at all” to “Extremely”) of smartphone as decision support while visiting a clothing store. Percentage of 154 respondents.

Table 1. Central tendency and distribution of frequency and importance scores of smartphone decision support while visiting a clothing store.

	Mean	Median	Std. Dev.	Skewness	Std. Error
<u>Frequency scores</u>					
- Search for product information on the Internet	2.81	3.00	1.115	0.078	0.195
- Compare prices on the Internet	2.98	3.00	1.255	-0.083	0.195
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	2.72	3.00	1.169	0.014	0.195
<u>Importance scores</u>					
- Search for product information on the Internet	2.42	2.00	1.071	0.433	0.195
- Compare prices on the Internet	2.59	2.00	1.186	0.316	0.195
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	2.40	2.00	1.088	0.439	0.195

## 4.2 Tentative clusters

Next we conducted a K-means cluster analysis to group the respondents into categories based on their tendency (reported frequency and perceived importance) to use a

smartphone as decision support in a clothing store. We run an analysis with different numbers of clusters, but the three-group cluster solution generated conceptually logical and statistically valid groups. It should, however, be noted that the cluster sizes are small as we have a quite small sample overall. Hence, clusters presented in Table 2 should primarily be seen as tentative.

Table 2. Tentative clusters with K-means analysis.

	Clusters		
	The occasional users n = 69 (45%)	The digitally assisted n = 40 (26%)	The conventional shoppers n = 45 (29%)
<u>Frequency scores</u>			
- Search for product information on the Internet	2.87	3.88	1.76
- Compare prices on the Internet	3.13	4.20	1.67
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	2.80	3.78	1.67
<u>Importance scores</u>			
- Search for product information on the Internet	2.36	3.58	1.47
- Compare prices on the Internet	2.62	3.93	1.36
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	2.41	3.45	1.47

Description of clusters in Table 2:

- The occasional users: They use a smartphone sporadically for decision support while visiting a clothing store and they perceive the smartphone as a quite important tool for in-store activities. It seems like the smartphone to them is an occasional stand-in clothing assistant that may be used, for example, if other options are not available.
- The digitally assisted: They regularly use a smartphone for decision support while visiting a clothing store and they consider the smartphone as an indubitable tool for in-store activities. For them the smartphone seems to have become a very important clothing assistant that is often used, especially for comparing prices.
- The conventional shoppers: They never or rarely use a smartphone for decision support while visiting a clothing store and they seem to believe that the smartphone is more or less an irrelevant tool for all three in-store activities. In other words they seem satisfied with conventional ways of shopping in-store.

The strongest difference between the clusters seems to be between frequency of conducting price comparisons on a smartphone and the perceived importance of price comparisons with a smartphone. The F-values, as shown in Table 3, are the highest for these two variables in the ANOVA-analysis of the cluster differences. Hence, it seems like finding a better price deal is a main trigger for the smartphone use as decision-support in a clothing store. Overall, the ANOVA-analysis also shows that all the variables are significantly different between the clusters, which confirms the validity of the K-mean cluster analysis.

Table 3. Differences between the clusters with ANOVA-analysis.

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
<u>Frequency scores</u>						
- Search for product information on the Internet	47.822	2	0.626	151	76.404	0.000
- Compare prices on the Internet	69.358	2	0.677	151	102.450	0.000
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	47.430	2	0.756	151	62.749	0.000
<u>Importance scores</u>						
- Search for product information on the Internet	47.243	2	0.536	151	88.160	0.000
- Compare prices on the Internet	69.969	2	0.499	151	140.330	0.000
- Ask for advice (e.g. send picture of a product to friends for advice or comments)	41.651	2	0.647	151	64.348	0.000

## 5 DISCUSSION AND CONCLUSION

The aim of this study was to explore young consumers' use of a smartphone as decision support in a clothing store. This was conducted by tentatively clustering survey respondents into groups according to their tendency to use a smartphone for decision support while visiting a clothing store.

The results suggest that there are many young consumers that have a clear tendency to use their smartphone as an assistant for making clothing shopping decisions while in the store. There are, however, clear differences between them regarding how frequently they use and how important they perceive the smartphone for in-store activities. The K-means cluster analysis proposes three groups, which we describe as the occasional users, the digitally assisted and the conventional shoppers. The digitally assisted believe strongly in the smartphone for decision support, while the conventional shoppers generally speaking are quite unconcerned about its potential to assist. The occasional users are somewhere in between the digitally assisted and the conventional shoppers. The largest cluster was

the occasional users (45% of the sample). Quite similar groups have also been found by Nasir and Kurtulus (2016), namely technology traditionalists, mobile addicts and technophobes. In their study the technological traditionalists and mobile addicts believe in the value of in-store technology, while the technophobes do not. They identified their clusters based on attitudes towards in-store technology usage.

Relative to searching for product information and asking for advice, the results also indicate that comparing prices online is a main trigger for the tendency to use a smartphone while inside a clothing store. This is in line with previous research that the in-store technology users are primarily distinguished by actions related to finding deals (Nasir and Kurtulus, 2016). These findings may also indicate showrooming effects, where products are tried in the store, but if a better price is found online then the clothing may be purchased from another retailer. Showrooming is indeed a challenge for brick and mortar store dependent retailers (Sourabh et al., 2017). According to Sourabh et al. (2017) price conscious customers that have access to multiple purchasing channels are more likely to conduct a showrooming behavior. The smartphone may nevertheless also be an opportunity for brick and mortar stores to promote deals e.g. based on customers' historical in-store information and behavior. Loyalty schemes, cross-selling, product bundling and different types of value deals may indeed be quite effective to defend showrooming effects (Sourabh et al., 2017). Retailer mobile apps may be especially suitable for deal-prone shoppers and hence discount retailers may benefit the most from mobile technology solutions (Grewal et al, 2017).

It should be noted that also product information search online and ask for advice showed quite high usage scores and importance scores among the occasional users and the digitally assisted. Hence, retailers should make it easy to find information about products with a smartphone e.g. by using QR codes or similar solutions (Nasir and Kurtulus, 2016). Furthermore, they should allow people to easily ask for advice from people not in the store, for example, by providing smartphone apps that innovatively support such functionality.

To summarize, this study has identified three tentative clusters regarding young consumers' tendency to use a smartphone as decision support in a clothing store, namely the occasional users, the digitally assisted and the conventional shoppers. Comparing prices online seems to be the main trigger to use a smartphone in-store. This study contributes to existing studies regarding omni-channel retailing and consumer behavior in-store. Nevertheless, the clusters are preliminary and thus the study is a work in progress. Further studies with larger and more representative samples could investigate more specific cluster solutions, than those identified here, and profile them according to different types of background variables, shopping styles etc.

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