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Antecedents of the Mobile Shopping: A Scale Development and Validation

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Abstract

Mobile shopping behavior may differ from traditional online shopping, as it is connected to a mobile device. This study was conducted to research the antecedents of mobile shopping. In this study, an inductive scale development study was conducted for mobile shopping. Thirty-nine items obtained after interviews with 17 consumers were presented to the opinion of 8 experts and were reduced to 34 items. Then, the items were turned into questions during the scale design phase. At this stage, the readability of the questionnaire was evaluated by experts. Therefore, a pilot study was conducted with 30 people. Later, 987 mobile shopping users participated in the purification study, and 34 items were reduced to 19 items. The antecedents of the mobile shopping scale, which comprise price advantage, ease, place advantage, enjoyment, and privacy dimensions, were validated with a new data set of 390 participants. A scale has been developed about mobile shopping, which has become a daily habit of consumers in the age of digitalized marketing through rapidly advancing technology and developments. The scale includes elements that direct consumers to mobile shopping and can be defined as mobile shopping's antecedents.

Keywords: Digital Marketing, Mobile Commerce, Mobile Consumer Behavior, Mobile Shopping, Scale Development

JEL Codes: M31, M39, L81

1. Introduction

Consumers can learn about businesses online, research, view products, and do so with their mobile devices. Social media, virtual communities, personal blogs and web pages, forums, and e-mail groups are among the main channels consumers

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share their ideas. Businesses get ideas other than their web pages and social media accounts (Kozinets, 2002). Every person connected online is a netizen now (Hauben and Hauben, 1997).

Mobile devices have five properties: portability, individuality, network loyalty, written / visual content, and convergence (Lariviére et al., 2013). These devices have become cultural objects rather than useful tools due to their portability and unique structure. These features can be an effective marketing tool (Wang et al., 2015). Increasing the capabilities of devices and technological integration boosts mobile devices' dependence day by day.

According to the Digital 2020 report, there are 5.19 billion mobile phone users, 4.54 billion Internet users, and 3.84 billion active social media users globally, and 99% of these users use their mobile phones to access their social media accounts (Wearesocial, 2020). 4.18 billion mobile internet users spend an average of 3 hours and 22 minutes a day on the Internet with their mobile devices. As a result, 53.3% of the total web traffic is comprised via mobile phones and 2.7% via tablets (Wearesocial, 2020).

According to Ericsson Mobility Report (2019), there are 8.04 billion mobile-connected devices worldwide, and 3.6% of these connections are to mobile PC, tablet, and mobile routers; 69% belong to smartphones. The average data usage of smartphones was 7.2 GB per month. The PPRO Payments and E-commerce Report (2020) shows that the size of global e-commerce is 3.43 trillion dollars, and 50% of this trade is made from mobile devices.

Considering all these data, mobile devices are substantial for individuals connected to the network. Besides their needs like entertainment and communication, they started to carry out their shopping activities via their mobile devices. This study is carried out because mobile devices have started to take an important place in shopping. It is thought to investigate the factors that affect consumers' mobile shopping. First, the mobile shopping literature was reviewed for this reason.

2. Mobile Shopping

It was thought that mobile commerce would be the next wave in the business world due to developments in portable devices and communication technologies (Wu and Wang, 2006). In 2003, the mobile shopping market size in digital content was only USD 2.182 billion in Japan and USD 2 billion in Western Europe. (Funk, 2007). When the mobile shopping market size in 2003 is compared with today's approximately 1.7 trillion dollars that mentioned in the introduction, the market size's significant increase draws attention.

The increase in market size has also attracted the attention of researchers. Ko et al. (2009) found that usefulness, pleasure, and ease of use dimensions positively correlated with mobile shopping's perceived value while the immediate

connectivity dimension was negative. Lu and Su (2009) concluded that while increasing the mobile skill level positively affects the pleasure and usefulness dimensions; it decreases anxiety. San-Martín et al. (2013) divided mobile shoppers into motivated, reflective, and unwilling groups. They examined the differences in dimensions that affect mobile shopping intentions between groups.

As customers get used to mobile shopping, they place more frequent and larger orders. They tend to use their mobile devices to repurchase products they have already ordered and previously experienced (Wang et al., 2015). Perceived ease of use, usefulness, and compliance factors had positive and significant effects on the intention to adopt mobile shopping. However, perceived pleasure and entertainment factors were not related (Wong et al., 2015). The shopping experience accomplished through mobile applications, and mobile promotions affect the smart customer feeling. Thus, smart customer feeling also affects price commitment and unplanned shopping (Park et al., 2015). Participants find mobile shopping, which they see as a new experience, as fast, easy, time and money-saving, personalized offers proposing, and ease of delivery. Besides, consumers' trust increases as they do mobile shopping (Pantano and Priporas, 2016). Natarajan et al. (2017) found that personal innovativeness and perceived risk are essential factors in using mobile shopping apps. Knežević and Delić (2017) state that young people have positive attitudes towards the usefulness of mobile applications. Gupta and Arora (2017) found that price savings are the main determinants of mobile shopping adoption. The self-efficacy factor is the primary determinant of mobile shopping refusal. Kim, et al.'s (2017) study is about having mobile shopping applications and explaining the consumers' purchasing decisions using the application with digital experience.

Chau et al. (2018) divided consumers into three as rare, average, and heavy mobile shopping users. In the study by Chen (2018), consumers' use of the mobile shopping site/application is related to their personal preferences and habits. Mobile shopping site/application satisfaction is related to marketing quality regarding the product, promotion, and price. Both factors were related to the intention to continue using the mobile shopping site/application. Chen et al. (2018) integrated the pleasure and concentration sub-dimensions and flow into the technology acceptance model and concluded that flow is associated with perceived usefulness, perceived ease of use, purchasing intention, and attitude while acting as a mediator between perceived usefulness and attitude. Chi (2018) conducted a study on the intention of using mobile shopping in readymade garments. Brand value and website quality have been added to the technology acceptance model as the determinants of perceived usefulness and ease of use. Faulds et al. (2018) argue that consumer-retailer engagement, consumer empowerment, proximity-based consumer participation, and web-based consumer participation are the four pillars. They represent the basic ways and tools for interacting with consumers. According to Ghazali et al. (2018), trust, perceived ease of use, perceived usefulness, attitudes, personal innovativeness, and perceived behavioral control affect customers' intention to adopt mobile shopping.

Groß (2018a) discussed the normative and functional compatibility of mobile consumers. While utilitarian and hedonic shopping values are essential for consumers with high compliance, social value and seller trust are important for consumers with low compatibility. In another study, Groß (2018b) divided mobile consumers into three clusters: motivated, benefit-oriented thoughtful, and convenience-aware. Perceived pleasure, perceived usefulness, satisfaction, and intention to use differ in age and screen size subgroups (Natarajan et al., 2018). Newman et al. (2018) claim that mobile applications are easy to use; they concluded that the mobile application was preferred over store shopping. Thongpapanl et al. (2018) classified consumers' perceptions. Compatibility, complexity, and relative advantage directly; power distance, collectivism, and uncertainty avoidance indirectly affect mobile shopping intention (Chung, 2019). San-Martín et al. (2019) found that reputation, site design, and security effectively increase mobile customer satisfaction and previous satisfied experiences in increasing repeat shopping intention.

3. Research Motivation

It is not always possible for researchers to measure with available measurement tools since they are not practical or inadequate, especially in social sciences (DeVellis, 2016). The scales that have been prepared previously may be insufficient in newly developing and rapidly changing subjects. For example, although online and mobile shopping may seem very similar, they differ in one fundamental element, such as portability. This situation concludes that a scale developed for online shopping may be insufficient for mobile shopping. The period and geography in which the scale was developed may require adaptation or renewal. Sometimes adapting may not be helpful enough. Even if the correct statistical techniques are used and statistically significant results are obtained, the wrong measurement tool will result in incorrect results. Thus, it would not fully meet the purpose of the study (Jacoby, 1978).

In the studies mentioned above, mobile-specific scales were not used while examining the factors leading to mobile shopping. Models such as TAM and UTAUT and the factors used in these models were preferred as measurement tools. Moreover, scales related to consumer behavior and online shopping were preferred. It is thought that mobile shopping may be different from traditional online shopping.

Mobile shopping, unlike online shopping, is a type of shopping based on device type. Due to mobile devices' portability and dimensions, mobile shopping's structure and dynamics differ from online shopping. As seen from the literature review, there is no established theoretical model for mobile shopping yet. Studies in Turkey are also very limited in this subject. Scale adaptation has approximately the exact research cost of scale development. It was decided to develop scale measuring antecedents of mobile shopping intention for the reasons listed.

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3. Method, Analysis and, Findings

The importance of scale development in marketing started to come to the fore in the late 1970s. Several recommendations have been made to develop a reliable and valid marketing scale. Valid measurement is the sine qua non of science, and if the scales used in a discipline are not highly valid, that discipline cannot be science (Peter, 1979). The primary purpose of scale development studies is to develop measurement tools with the desired level of reliability and validity (Churchill, 1979). Scale development studies consist of several steps to ensure validity and reliability.

There are three main strategies in scale development: extrinsic, inductive, and deductive, which do not have any superiority over each other and can sometimes be used in combination (Burisch, 1984). The structure is determined based on theory, and scale items are developed according to this structure in the deductive strategy. However, the inductive strategy can be applied in areas where the structure is not completely clear. The deductive strategy can be said to be more economical in the beginning because the structure is clear and contains fewer items in the first item pool (Hinton and Platt, 2019). The inductive strategy is more appropriate for relatively new subjects that do not have enough theories (Hinkin, 1995). It would be correct to use the inductive strategy in contemporary issues that arise in marketing and need to be measured with changing consumer behavior and developing technology.

Therefore, an inductive approach was followed because the mobile shopping and mobile commerce literature, technology, and experience are new. In this approach, the studies mentioned earlier, observations and mobile shopping experiences have made substantial contributions in determining the structure and drawing the roadmap. In this study, the steps were adapted and followed within the framework of the scale development paradigm proposed by Churchill (1979), which has been used as a sequence of generally valid stages in marketing science, and are shown in Figure 1.

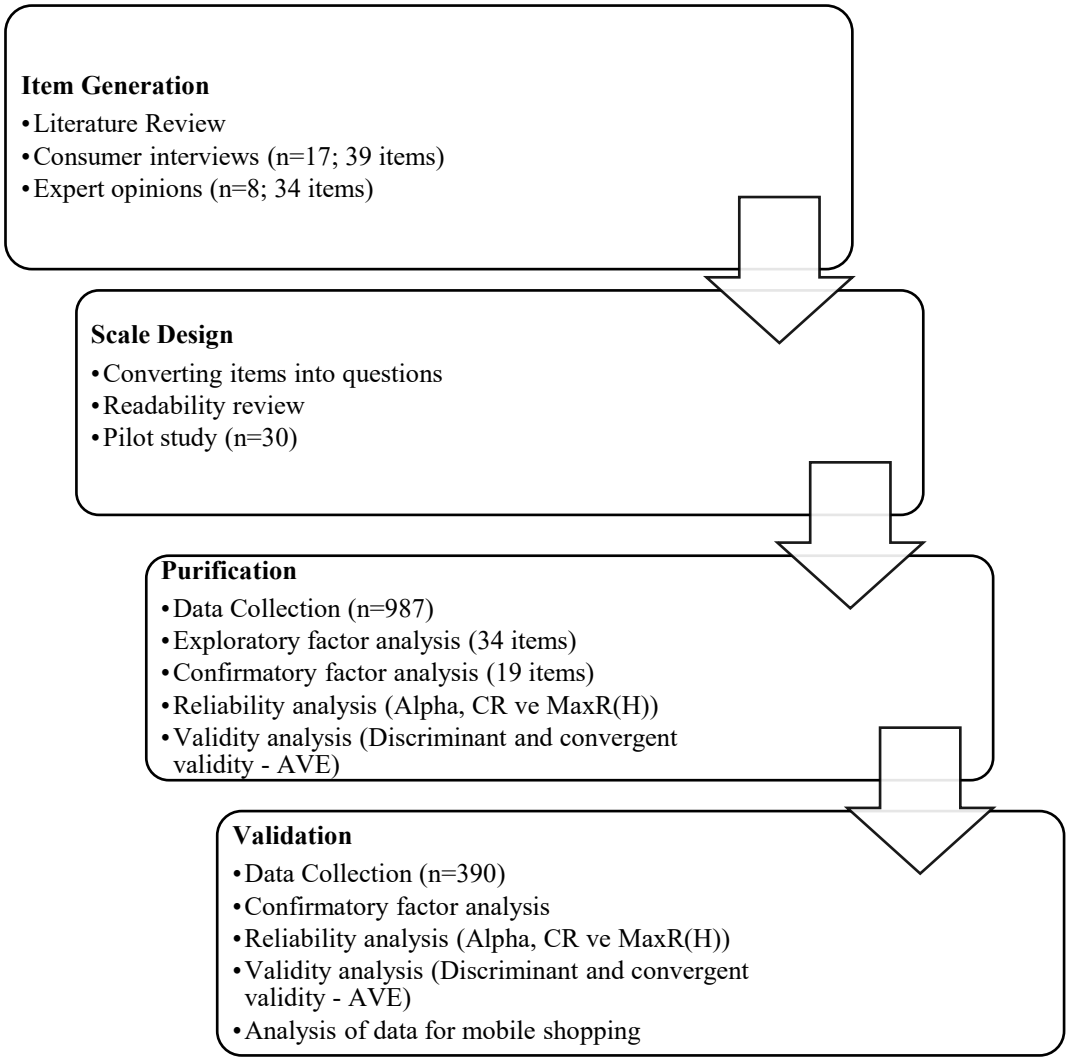

Figure 1. Research Steps

4.1. Item Generation

In this step, an item pool was created. Conceptually defined research enables the newly created structure to differentiate from other structures, and produce potential scale items and ensure that these items are inclusive (Wymer and Alves, 2013). Since a severe deficiency in the scale items pool may cause results that cannot be eliminated in the later stages of the research, the main goal is to create items that cover the potential structure entirely (Clark and Watson, 1995). For this reason, it was decided to conduct consumer interviews in the first step.

4.1.1. Consumer Interviews

In this step, a semi-structured qualitative interview technique was used. Interviews were held in the third quarter of 2019. Through interviews, consumers from different demographic groups were asked about their monthly mobile shopping volumes, the reasons that push them to do mobile shopping, and the

reasons that prevent them from doing mobile shopping. Afterward, what needs to change and develop in mobile shopping and other elements they want to add about mobile shopping are examined.

The number of interviews may differ in the literature. Although Richins and Dawson (1992) interviewed 11 consumers in their study, Arnold and Reynolds (2003) interviewed 98 people. In this study, the interviews were terminated due to participants' repetition of elements about mobile shopping. Thus, a total of 17 people were interviewed. It was concluded that the item pool started to form within the research framework.

Keywords were obtained from the participants' responses. The elements that directed them to mobile shopping were transferred into the scale item pool. After analyzing the interviews, 39 items were obtained, which generated the item. The items have not been turned into questions yet. They are just included in the study as key elements. In the next stage, expert opinions were consulted to evaluate the items obtained from the interviews.

4.1.2. Expert Evaluation

In this step, a scale item evaluation form was given to eight experts, consisting of four academicians and four professionals involved in mobile shopping and work about marketing. Each item in the form was asked to experts to evaluate. Each item has three options as keep, undecided, and remove. Therefore, after evaluating the items in the form, experts were asked to add any items they deemed missing and should be in the scale. This phase was carried out in the fourth quarter of 2019.

First, 19 items that all experts said should remain on the scale were left in the pool. Then, 15 items that at least six experts stated to remain were left. Thus, five items were eliminated, and 34 remained. The items suggested by the experts individually were not included in the scale as they did not comply with another participating expert.

4.2. Scale Design

After the expert's evaluation, the remaining 34 items on the scale were converted into question forms. This step made efforts to make the items as comprehensible as possible. It is also necessary to determine the type of response format at this stage. It was decided to use a five-point Likert scale in the study to reduce the participant's choices. Moreover, items scored in at least five quantitative response categories are less exposed to correlation distortions and contain sufficient information (Comrey, 1988).

4.2.1 Question Formation, Readability, and Face Validity

The questions should be in a way that meets the abstract structure's purpose to perform a significant measurement. Reasons such as complex expressions, complex language structure, questions that require guesswork, uncertainties in the question-and-answer category, biased or guiding questions may cause measurement errors (Carpenter, 2018). In this step, expert opinions were consulted to examine the scale for readability and structure. Academicians who evaluated the draft questionnaire have expertise in educational sciences, language, and interested in mobile shopping. This step was carried out in December 2019.

During the evaluation, changes and corrections were formed within the scope of the suggestions made on the informed consent of the questionnaire, the introduction part of questions, the linguistic structure, and the general form of the items that lead to mobile shopping. After the arrangements were made in line with the experts' recommendations, the pilot study phase has started.

4.2.2. Pilot Study

The questionnaire should be designed in a way that is easy to understand. The survey questions should be apparent to make less effort by considering the respondents' cognitive comfort (Shkoler, 2019). As a result of the literature research and analysis conducted by Johanson and Brooks (2010), it was concluded that a pilot study consisting of 30 participants in the research universe was sufficient for scale development studies. Therefore, a pilot study was conducted with 30 people non-randomly selected from the consumers. The pilot study is based on the complexities of the survey design; it was carried out to evaluate the questionnaire form, questions, concepts, and response time in general by the selected participant.

The draft questionnaire form was presented to the pilot study participants in January 2020. They were asked to evaluate each question within understandability and mark them if they saw any errors. Moreover, a post-questionnaire evaluation form was given along with the questionnaire form. The post-questionnaire evaluation form includes four two-option and three open-ended evaluation questions.

All pilot study participants find the questionnaire form legible and the questionnaire's concepts plain. A participant who found the questionnaire questions complicated was asked to the reason, and the relevant section was improved. Naturally, there are many questions in the purification stage in scale development studies, and the questionnaires are long in duration. Still, 80% of the participants did not find the survey long. All these answers conclude that the survey design is created in a way that the participants can easily answer. Participants were asked to write down questions that were not understood and other situations they wanted to state about the questionnaire. According to the responses, some changes were made in the form design. Then the purification phase of the research was started.

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4.3. Purification Study

Purification can be applied from the first to the last step of scale development. For example, after creating the item pool, item elimination can be performed when expert opinions are consulted. In the pilot study, items that are considered unreliable can also be removed to keep the questionnaire form shorter. Although all these processes are simplification steps, the main purification stage of the scale development studies is the part that is performed using factor analysis by collecting data from the population after the scale design and the first questionnaire form are obtained. At this stage, the pool items are reduced and grouped by statistical analysis by collecting data from the sample groups to finalize the mobile shopping scale.

4.3.1. Data Collection and Sample Group

First, data was collected from mobile shoppers through an online questionnaire. The online survey method was preferred because the subject is mobile shopping. It concerns the digital world, the participants of the survey are already mobile shoppers, and they are connected to the network. There is the possibility of reaching a wider audience online. For this reason, a questionnaire was shared in various non-shopping social media channels and online communities in Turkey in the first quarter of 2020.

As a result of these, 1020 participants participated in the survey. Thirty-three participants were excluded from the assessment because they stated that they do not do mobile shopping or spend on mobile shopping. As a result, 987 participants formed the sample group. Distributions are given in Table 1.

Table 1. Frequencies of Purification Study Participants (n = 987)

Sex	*Female* 564 (57.14%)			*Male* 423 (42.86%)	
Marital Status	*Married* 474 (48.02%)			*Single* 513 (51.98%)	
Child	*Yes* 374 (37.89%)			*No* 613 (62.11%)	
Year of Birth	*1964 and earlier* 68 (6.89%)	*1965-79* 149 (15.10%)	*1980-89* 402 (40.73%)	*1990-95* 223 (22.59%)	*1996 and later* 145 (14.69%)
Education	*Associate degree and lower* 210 (21.28%)		*Bachelor's degree* 502 (50.86%)		*Postgraduate* 275 (27.86%)
Working Status	*Paid* 516 (52.28%)	*Own Business-Freelance* 140 (14.18%)		*Retired* 47 (4.76%)	*Housewife-Not Working* 284 (28.77%)
Household Income (monthly ₺)	*0-2500* 61 (6.18%)	*2501-4000* 118 (11.96%)	*4001-6000* 157 (15.91%)	*6001-8000* 220 (22.29%)	*8001 and above* 431 (43.67%)
Mobile Device Usage	*Less than 1 hour* 14 (1.42%)	*1 hour to 2 hours* 177 (17.93%)	*2 hours to 3 hours* 254 (25.73%)	*3 hours to 4 hours* 232 (23.51%)	*4 hours and more* 310 (31.41%)
M-Shopping Freq. (monthly)	*1-2 times* 547 (55.42%)	*3-4 times* 237 (24.01%)		*5-6 times* 109 (11.04%)	*7 times and more* 94 (9.52%)
M-Shopping Amount (monthly ₺)	*100 and less* 222 (22.49%)	*101-250* 317 (32.12%)		*251-500* 251 (25.43%)	*501 and more* 197 (19.96%)

4.3.2. Exploratory Factor Analysis and Confirmatory Factor Analysis of The Purification Stage

At this step, Exploratory Factor Analysis (EFA) is performed. Although researchers can use factor analysis for similar purposes, one of the most common uses of factor analysis is to support and analyze the validity of newly developed tests or scales (Worthington and Whittaker, 2006). As a result of the exploratory factor analysis, the researcher can obtain information about the dimensionality of the structure, which the items belong to, and how much they are loaded (Netemeyer et al., 2003). Principal Axis Factoring (PAF) was used for factor extraction, and Promax was used for factor rotation. As a result of the first iteration, the KMO value was obtained as 0.962 and Bartlett test value as 0.000. These results show that sampling adequacy is perfect (Sharma, 1996). The 987 participation is another value that indicates good sampling adequacy (Hair et al., 2014), with 29 observations per item for 34-item factor analysis.

In the first step of EFA, it was observed that four items remained under a factor load of 0.40, and one item was an overlapping item that loaded onto two factors similarly. Then, the item with the lowest factor loading was excluded from the analysis, and the factor analysis was repeated with the remaining 33 items. In the second step of EFA, one item was eliminated by applying the same procedure again. The factor analysis was repeated with the remaining 32 items. In the following steps, items with low factor loadings or overlapping items were excluded from the analysis one by one. The analysis was repeated by increasing and decreasing the number of factors according to the obtained eigenvalue and scree plot results. As a result, a structure consisting of 19 items and five factors was obtained, and the explained variance was found as 75.792%.

After the exploratory factor analysis, the Confirmatory Factor Analysis (CFA) was performed. This step of scale development is considered appropriate to confirm the items with confirmatory factor analysis after elimination (Osborne, 2014). As a result of the CFA, $\chi 2$ / df = 4.681 and p-value 0.000; GFI = 0.936; AGFI = 0.912; CFI = 0.963; RMSEA = 0.061 and SRMR = 0.038 values were obtained. Fit indices demonstrate that the model is acceptable (Marsh and Hocevar, 1985; Thompson, 2000; Hair et al., 2014). Table 2 shows the factor loadings obtained because of the EFA and the standardized regression weights obtained from the CFA.

After the satisfactory factor results are obtained, the factors are given meaning (Hair et al., 2014). In this study, factor labels formed by the familiar narratives of the items were created. As can be seen in Table 2, the five items under the first factor are related to mobile shopping price advantage. The common point of quick shopping, timesaving, comfort, convenience, and delivery variables are evaluated as ease. When the third factor is examined, it is seen that all are related to place utility. The joy, stress and excitement of mobile shopping are classified as enjoyment. The fact that the products that are reluctant to buy from the store can be

purchased through mobile shopping and that mobile shopping offers the chance to shop confidently indicate the privacy factor of mobile shopping.

Table 2. Factor Loadings and Standardized Regressions from EFA and CFA

Factor	*Code*	*Item*	*Factor Loading*	*Std. Estimates*
Price	*F1*	I can compare alternative products during mobile shopping.	0.921	0.816
	F2	I have a chance to compare prices while mobile shopping.	0.862	0.750
	F3	Thanks to mobile shopping, I can reach the cheapest product.	0.740	0.774
	F4	I can get a price advantage thanks to special mobile discounts.	0.691	0.810
	F5	Prices in mobile shopping are more affordable than store shopping.	0.678	0.674
Ease	*K1*	My mobile device allows me to shop quickly.	0.915	0.900
	K2	Mobile shopping saves me time.	0.904	0.810
	K3	Mobile shopping is comfortable.	0.838	0.862
	K4	Mobile shopping is convenient.	0.697	0.893
	K5	Thanks to mobile shopping, products are delivered to my door.	0.621	0.808
Place	*Y1*	Thanks to mobile shopping, I have the chance to buy products that are not sold in my place.	0.961	0.818
	Y2	I can access hard-to-find products thanks to mobile shopping.	0.646	0.829
	Y3	I can shop wherever I want with my mobile device.	0.669	0.892
	Y4	Thanks to my mobile device, I can access stores abroad.	0.618	0.683
Enjoyment	*H1*	Mobile shopping is a joy	0.866	0.879
	H2	I can shop stress-free with my mobile device.	0.778	0.695
	H3	Mobile shopping is exciting.	0.678	0.864
Privacy	*G1*	I can easily buy products that I would hesitate to buy from the store with my mobile device.	0.809	0.752
	G2	I can shop confidentially with my mobile device.	0.730	0.839

4.3.3. Reliability and Validity Values Obtained in the Purification Study

In Table 3, the Average Variance Extracted (AVE), Maximum Shared Variance (MSV), the square roots of AVE (where each factor intersects with itself in the correlation table), and inter-factor correlations are given. Cronbach's Alpha (Alpha), Composite Reliability (CR), and MaxR (H) values are also given.

Table 3. Reliability, Validity and Correlation Values (Purification Step)

	Alpha	*CR*	*MaxR(H)*	*AVE*	*MSV*	*Price*	*Ease*	*Place*	*Enjoyment*	*Privacy*
Price	0.885	0.876	0.883	0.588	0.533	*0.767*				
Ease	0.924	0.932	0.937	0.732	0.557	0.730	*0.856*			
Place	0.867	0.883	0.900	0.655	0.557	0.709	0.746	*0.809*		
Enjoyment	0.853	0.856	0.879	0.667	0.473	0.568	0.688	0.680	*0.817*	
Privacy	0.773	0.776	0.786	0.635	0.387	0.452	0.573	0.443	0.622	*0.797*

As can be seen from the table, all AVE values are above 0.5. These values show us that the scale has convergent validity (Netemeyer et al., 2003). Also, the AVE values' square roots are higher than the correlations (Fornell and Larcker, 1981); and that all AVE values are higher than the MSV values indicate that the scale has discriminant validity. Reliability values are also above acceptable levels (Netemeyer et al., 2003; Hair et al., 2014).

4.4. Validation Study

In this step, data is collected from a new sample group in order to verify the mobile shopping scale and to make applications. For this purpose, a new questionnaire was created with 19 items on the scale, the descriptive variables of the questionnaire used in the purification section, and four new variables adapted from the literature to measure the intention to continue using mobile shopping.

4.4.1. Data Collection and Sample Group

In this section, data were collected from online mobile shoppers, again in Turkey, in the second quarter of 2020, through surveys. For the reasons mentioned in the purification section, the online survey method was preferred. While conducting the surveys, the consumers who participated in the purification phase were warned not to participate in the research. Consequently, there were 410 participants in the survey. Twenty participants were excluded from the assessment because they stated that they do not do mobile shopping nor spend on mobile shopping. As a result, 390 participants formed the sample group. Distributions are given in Table 4.

Table 4. Frequencies of Purification Study Participants (n = 987)

Sex	*Female* 202 (51.79%)			*Male* 188 (48.21%)	
Marital Status	*Married* 107 (27.44%)			*Single* 283 (72.56%)	
Child	*Yes* 91 (23.33%)			*No* 299 (76.67%)	
Year of Birth	*1964 and earlier* 10 (2.56%)	*1965-79* 36 (9.23%)	*1980-89* 62 (15.90%)	*1990-95* 92 (23.59%)	*1964 and earlier* 10 (2.56%)
Education	*Associate degree and lower* 260 (66.67%)		*Bachelor's degree* 105 (26.92%)	*Postgraduate* 25 (6.41%)	
Working Status	*Paid* 134 (34.36%)	*Own Business-Freelance* 42 (10.77%)		*Retired* 11 (2.82%)	*Housewife-Not Working* 203 (52.05%)
Household Income (monthly ₺)	*0-2500* 47 (12.05%)	*2501-4000* 113 (28.97%)	*4001-6000* 101 (25.90%)	*6001-8000* 62 (15.90%)	*0-2500* 47 (12.05%)
Mobile Device Usage	*Less than 1 hour* 14 (3.59%)	*1 hour to 2 hours* 37 (9.49%)	*2 hours to 3 hours* 72 (18.46%)	*3 hours to 4 hours* 74 (18.97%)	*Less than 1 hour* 14 (3.59%)
M-Shopping Freq. (monthly)	*1-2 times* 241 (61.79%)	*3-4 times* 89 (22.82%)		*5-6 times* 28 (7.18%)	*7 times and more* 32 (8.21%)
M-Shopping Amount (monthly ₺)	*100 and less* 142 (36.41%)	*101-250* 132 (33.84%)		*251-500* 59 (15.13%)	*501 and more* 57 (14.62%)

IJCEAS

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4.4.2. Confirmatory Factor Analysis of Validation Study

At this step, the Confirmatory Factor Analysis (CFA) was performed to validate the scale. As a result of the CFA, $\chi 2$ / df = 2.389 and p-value 0.000; GFI = 0.923; AGFI = 0.893; CFI = 0.969; RMSEA = 0.060 and SRMR = 0.031 values were obtained. Fit indices demonstrate that the model is acceptable again. Table 5 shows the factor loadings obtained because of the EFA and the standardized regression weights obtained from the CFA.

Table 5. Standardized Regression Weights from CFA

Factor	*Code*	*Standardized Estimates*
Price	*F1*	0.825
	F2	0.795
	F3	0.784
	F4	0.841
	F5	0.771
Ease	*K1*	0.865
	K2	0.781
	K3	0.885
	K4	0.868
	K5	0.889
Place	*Y1*	0.860
	Y2	0,906
	Y3	0.872
	Y4	0.726
Enjoyment	*H1*	0.911
	H2	0.719
	H3	0,901
Privacy	*G1*	0.823
	G2	0.733

4.4.3. Reliability and Validity Values Obtained in the Validation Stage

In Table 6, the Average Variance Extracted (AVE), Maximum Shared Variance (MSV), AVE's square roots, and inter-factor correlations are given. In addition to the validity, reliability analyzes were made. The values of Cronbach's Alpha (Alpha), Composite Reliability (CR), and MaxR (H) are given in Table 6.

Table 6. Reliability, Validity and Correlation Values (Validation Step)

	Alpha	*CR*	*MaxR(H)*	*AVE*	*MSV*	*Price*	*Ease*	*Place*	*Enjoyment*	*Privacy*
Price	0,906	0,904	0,903	0.646	0.632	*0.804*				
Ease	0.935	0.933	0.937	0.737	0.663	0.757	*0.859*			
Place	0.896	0.908	0.922	0.712	0.663	0.795	0.814	*0.844*		
Enjoyment	0.880	0.884	0.911	0.719	0.599	0.631	0.744	0.753	*0.848*	
Privacy	0.752	0.755	0.765	0.607	0.566	0.670	0.752	0.683	0.693	*0.779*

As can be seen from the table, all AVE values are above 0.5. These values show us that the scale has convergent validity. Besides, the AVE values' square roots are higher than the correlations; all AVE values are higher than the MSV values, indicating that the scale has discriminant validity. Reliability values are also above acceptable levels.

4.4.4. Application

In this step, it was analyzed whether the antecedents of mobile shopping affected shopping intention. For this reason, four items were added to the questionnaire at the verification stage to measure the intention to continue mobile shopping. The expressions, Cronbach's alpha values, and factor loadings of the adapted items are given in Table 7.

Table 7. Item Loads and Reliability Value of the Intention Factor

Factor	*Code*	*Item*	*Adapted From*	*Value*	*Alpha*
Intention to Continue Using Mobile Shopping	*S1*	I will continue to do mobile shopping in the future.	Zeithaml et al. (1996); Evanschitzky et al. (2012); Rose et al. (2012)	0.906	0.938
	S2	I recommend my friends and family to do mobile shopping.		0.913	
	S3	I will probably use my mobile device for shopping soon.		0.849	
	S4	I think I will be shopping more in the future with my mobile device.		0.885	

It is expected that consumers with high benefit/advantage perception will highly intend to continue using mobile shopping. Based on this, the following hypotheses have been developed.

H_1: Perceived price advantage of mobile shopping increase the intention to continue using mobile shopping.
H_2: Perceived ease of mobile shopping increases the intention to continue using mobile shopping.
H_3: Perceived place advantage of mobile shopping increases the intention to continue using mobile shopping.
H_4: Perceived enjoyment of mobile shopping increases the intention to continue using mobile shopping.
H_5: Perceived privacy of mobile shopping increases the intention to continue using mobile.

Structural Equation Model (SEM) analysis was performed for testing the hypotheses. As a result of the SEM, $\chi 2$ / df= 2.457 and p-value 0.000; GFI = 0.898; AGFI = 0.865; CFI = 0.963; RMSEA = 0.061 and SRMR = 0.031 values were obtained. The standardized regression weights for the effect to continue using mobile shopping are 0.237 for the price advantage factor and 0.479 for the enjoyment factor, and both are significant at $p < 0.001$. Values are 0.160 for the ease factor and 0.158 for the place advantage factor, and there is a significant

relationship at the $p < 0.05$ level. There was no statistically significant relationship between privacy and the intention to continue using mobile shopping. R^2 (squared multiple correlation) of Intention to Continue Using Mobile Shopping was 0.859. Consequently, H_1, H_2, H_3, and H_4 hypotheses were accepted as SEM results were accepted, and the H_5 hypothesis was rejected.

5. Conclusion

The number of businesses and consumers that tend to mobile shopping is increasing. Mobile devices will take a more important place in trade in the upcoming periods. Therefore, the findings obtained within the scope of this study are essential. If the findings are evaluated, a scale has been developed about mobile shopping, which has become a daily habit of consumers in the age of digitalized marketing through rapidly advancing technology and developments. This study differs from the literature (Chi, 2018; Natarajan et al., 2018; Groß, 2018b) because the five-dimensional structure does not include the factor of ease of use or effort expectancy. Because mobile devices occupy much space in our daily lives and using these devices for shopping is not difficult for most consumers. The scale includes elements that direct consumers to mobile shopping and can be defined as mobile shopping's antecedents.

5.1. Discussion

The first factor of the scale is perceived price advantage. This dimension, consisting of five items, has been obtained as one of the main factors in consumers' tendency to mobile shopping. This factor has not been addressed in this way in previous studies. Today, mobile shopping offers a price advantage as a differentiation. In addition, it provides the opportunity to quickly compare prices and reach the cheapest product at any time and place. There are the variables of comparing alternative products, comparing prices, accessing the cheapest product, mobile special discounts, and affordable prices compared to store shopping. Comparing alternative products and mobile-specific discount items had the relatively highest regression weights both in the purification step and the validation step. These findings can be associated with two situations in physical merchandising. First, comparing alternative products from different brands in the brick-and-mortar store is impossible. Secondly, businesses that want to spread mobile shopping and avoid retailing costs make some campaigns and offer discounts for mobile shopping.

The ease factor is closely related to usefulness in the mobile shopping literature (Natarajan et al., 2017; Groß, 2018b; Chi, 2018; Ghazali, 2018). However, the scale developed in this study included not only usefulness but also convenience/comfort. Consumers can quickly compare prices with their mobile devices and alternative products and quickly order the product they decide to buy. Thus, mobile shopping's ease emerges as a second factor in addition to mobile shopping's perceived price advantage. The ease factor includes quick shopping,

timesaving, comfort, convenience, and delivery of products right to the door. Consumers who get price benefits can shop quickly, comfortably, and save time thanks to user interfaces and developing technologies without even going to the store. The products they buy are delivered to the address.

Although the place is one of the essential marketing elements, it has not found much space in mobile shopping studies. In traditional internet shopping, purchases could be made at any time. With mobile shopping, the opportunity to make purchases anywhere has been added. Mobile shopping users, who can perform transactions wherever they want, can access products that are not sold or challenging to find in their residence with mobile devices. It also can access stores abroad in favor of mobile devices. The combination of these variables also creates the place benefit of mobile shopping. Furthermore, consumers find mobile shopping enjoyable and exciting, like many other digital media. Consumers who do not have to go to the store do not experience shopping stress. These items reveal the enjoyment aspect of mobile shopping. Enjoyment is similar in content to other factors with the same name in the literature (Lu and Su, 2009; Natarajan et al., 2017; Chen et al., 2018).

Privacy and security are evaluated under risk or trust factors in the literature (Pantano and Priporas, 2016; Groß, 2018b; Chung, 2019). The privacy factor makes mobile shopping different from store shopping and even differentiates from online shopping. Although it was defined with only two variables in the study, the privacy factor that was decided to be included in the scale resulting from the qualitative part of the research includes purchasing products refining from buying to the store and shopping in privacy. Shopping in privacy means that the person can evaluate the products on the mobile device screen and not share or show with another person and order. For example, it is possible to evaluate that the consumer will receive a surprise gift for a person and try to do this without revealing it to anyone within the privacy.

5.2. Implications

The increase in perceived advantages affects the intention to use mobile shopping. For this reason, businesses involved in mobile commerce should try to increase consumers' advantage/benefit perceptions. Consumers who want to gain a price advantage and can compare products will naturally switch between brands. For this reason, the prices of the products offered for sale on mobile sites should be in favor of the consumer or should be supported by promotions that attract customers. The offering of the mobile site and in-app product comparison options will also be a factor that attracts the consumer. Secondly, businesses should attach importance to factors that increase consumers' comfort. Businesses cannot affect the general benefits related to mobile use. Also, improvements in cargo and delivery, which are in the domain of businesses, and increases in mobile sites and applications' usage speed will increase consumer comfort. Third, there are opportunities in the niche products industry. The advantage of purchasing products that are not easily accessible physically, locally, or even in the country of residence

can be purchased from consumers' mobile devices with one click. Fourth, making mobile shopping more enjoyable will increase customer satisfaction and benefit. Businesses can develop various applications and gamification for this. Finally, the importance of customer privacy is undeniable. Guarantees should be offered to customers regarding privacy. Simultaneously, taboo products that can be considered within the privacy scope are open to new business opportunities.

Mobile shopping has advantages for both consumers and businesses and should be evaluated. Consumers get many unique benefits mentioned in the study through technological advances. On the other hand, businesses get rid of physical store expenses, can do better inventory management, and can easily reach consumers who are far away from them. Thus, a two-sided advantage is provided by increasing the number of products offered for sale.

5.3. Limitations and Future Research

The study was conducted in Turkey, which is an emerging economy country. We believe that the scale is generalizable due to its development methodology. However, it should be noted that there may be differences between cultures. Differences in perception of mobile shopping among demographic structures are one of the issues that can be addressed in the future.

Since mobile shopping is a relatively new subject, the research has been designed with an induction strategy. For this reason, a large number of data collection steps have occurred. It can be considered that the scope of consumer interviews is kept narrow and detailed information about mobile shopping can be obtained through in-depth interviews. Thus, different dimensions can be revealed. Besides, it is possible to add new factors to the scale due to the developing technology and changing consumer perceptions in the future.

In this study, interviews, evaluation of items by experts, expert evaluation of the questionnaire, pilot study, collecting consumer data for simplification, and collecting consumer data for verification stages were carried out consecutively. Due to the spread of these successive stages over time, the last stage, the verification section, coincided with the Covid-19 pandemic period. The increased tendency towards mobile shopping due to the pandemic cannot be ignored. The effect of the pandemic and the post-pandemic process on mobile shopping is an issue that can be examined.

The research is limited to the factors that direct mobile shopping. In fact, in the interviews in the first step of the study, the factors that prevent shopping were asked. However, the time that will increase with the increasing number of questions in the questionnaires affects the participants' answers. For this reason, the scope has been limited. Future studies can examine the factors preventing mobile shopping and perceived risk factors. Also, a comparative study can be made between perceived advantages and perceived risk factors. Extending the theoretical

framework of mobile shopping by using the dimensions obtained in the scale with different theoretical models is among the topics that can be addressed in the future.

In the research, mobile shopping was considered. However, there may be sectoral differences in mobile shopping behavior. In future studies, the perceived advantages, and the intention to use mobile shopping can be examined on a sectoral basis. In particular, the issue of privacy, which remains a factor of two items in this study, may vary according to product categories. We believe that the privacy factor in mobile shopping is an issue that needs to be studied separately.

Rapidly developing mobile technologies, increasing interest of researchers, recent studies, and their suggestions have led to the rapid expansion of the mobile shopping area. Consumer adaptation, consumer confidence, and even the Covid-19 pandemic seem to increase the intention to use mobile shopping. We think that considering the above suggestions will contribute to the development of mobile shopping literature.

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REFERENCES

Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing,* 79(2), 77-95. https://doi.org/10.1016/S0022-4359(03)00007-1

Burisch, M. (1984). Approaches to personality inventory construction: a comparison of merits. *American Psychologist*, 39(3), 214-227. https://doi.org/10.1037/0003-066X.39.3.214

Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communication Methods and Measures*, 12(1), 25-44. https://doi.org/10.1080/19312458.2017.1396583

Chau, N. N., Seshadri, S., Broekemier, G., & Pamornpathomkul, S. (2018). An exploratory study of mobile shopping behaviors of young adults in Thailand. *Journal of Internet Commerce*, 17(4), 339-355. https://doi.org/10.1080/15332861.2018.1463802

Chen, H. J. (2018). What drives consumers' mobile shopping? 4Ps or shopping preferences?. *Asia Pacific Journal of Marketing and Logistics*, 30(4), 797-815. https://doi.org/10.1108/APJML-08-2017-0167

Chen, Y. M., Hsu, T. H., & Lu, Y. J. (2018). Impact of flow on mobile shopping intention. *Journal of Retailing and Consumer Services*, 41, 281-287. https://doi.org/10.1016/j.jretconser.2017.04.004

Chi, T. (2018). Understanding Chinese consumer adoption of apparel mobile commerce: An extended TAM approach. *Journal of Retailing and Consumer Services*, 44, 274-284. https://doi.org/10.1016/j.jretconser.2018.07.019

Chung, K. C. (2019). Mobile (shopping) commerce intention in central Asia: The impact of culture, innovation characteristics and concerns about order fulfilment. *Asia-Pacific Journal of Business Administration*, 11(3), 251-266. https://doi.org/10.1108/APJBA-11-2018-0215

Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73. https://doi.org/10.2307/3150876

Clark, L., & Watson, D. (1995). Constructing Validity: Basic Issues in Objective Scale Development. *Psychological Assessment*, 7(3), 309-319. https://doi.org/10.1037/1040-3590.7.3.309

Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, 56(5), 754-761. https://doi.org/10.1037/0022-006X.56.5.754

DeVellis, R. F. (2016). *Scale development: Theory and applications,* 4th ed., Sage publications.

Ericsson. (2019). *Ericsson mobility report*. https://www.ericsson.com/en/mobility-report/reports/november-2019

Evanschitzky, H., Ramaseshan, B., Woisetschläger, D. M., Richelsen, V., Blut, M., & Backhaus, C. (2012). Consequences of customer loyalty to the loyalty program and to the company. *Journal of the Academy of Marketing Science,* 40(5), 625-638. https://doi.org/10.1007/s11747-011-0272-3

Faulds, D. J., Mangold, W. G., Raju, P. S., & Valsalan, S. (2018). The mobile shopping revolution: Redefining the consumer decision process. *Business Horizons*, 61(2), 323-338. https://doi.org/10.1016/j.bushor.2017.11.012

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research,* 18(1), 39-50. https://doi.org/10.1177/002224378101800104

Funk, J. L. (2007). The future of mobile shopping: The interaction between lead users and technological trajectories in the Japanese market. *Technological Forecasting and Social Change,* 74(3), 341-356. https://doi.org/10.1016/j.techfore.2005.11.007

Ghazali, E. M., Mutum, D. S., Chong, J. H., & Nguyen, B. (2018). Do consumers want mobile commerce? A closer look at M-shopping and technology adoption in Malaysia. *Asia Pacific Journal of Marketing and Logistics*, 30(4), 1064-1086. https://doi.org/10.1108/APJML-05-2017-0093

Groß, M. (2018a). Mobile shopping loyalty: the salient moderating role of normative and functional compatibility beliefs. *Technology in Society*, 55, 146-159. https://doi.org/10.1016/j.techsoc.2018.07.005

Groß, M. (2018b). Heterogeneity in consumers' mobile shopping acceptance: A finite mixture partial least squares modelling approach for exploring and characterising different shopper segments. *Journal of Retailing and Consumer Services*, 40, 8-18. https://doi.org/10.1016/j.jretconser.2017.09.002

Gupta, A., & Arora, N. (2017). Understanding determinants and barriers of mobile shopping adoption using behavioral reasoning theory. *Journal of Retailing and Consumer Services*, 36, 1-7. https://doi.org/10.1016/j.jretconser.2016.12.012

Hair, J. F. Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis,* 7th ed., Pearson.

Hauben, M., & Hauben, R. (1997). *Netizens: On the History and Impact of Usenet and the Internet,* Wiley.

Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967-988. https://doi.org/10.1016/0149-2063(95)90050-0

Hinton, D. P., & Platt, T. (2019). Measurement Theory and Psychological Scaling", Hackett, P. M. W. (Ed.), *Quantitative Research Methods in Consumer Psychology,* Routledge, pp. 59-87.

Jacoby, J. (1978). Consumer Research: How valid and useful are all our consumer behavior research findings? A State of the Art Review1. *Journal of Marketing*, 42(2), 87-96. https://doi.org/10.1177/002224297804200213

Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394-400. https://doi.org/10.1177/0013164409355692

Kim, M., Kim, J., Choi, J., & Trivedi, M. (2017). Mobile shopping through applications: Understanding application possession and mobile purchase. *Journal of Interactive Marketing*, 39, 55-68. https://doi.org/10.1016/j.intmar.2017.02.001

Knežević, B., & Delić, M. (2017). Young Consumers' Perception of Problems and Usefulness of Mobile Shopping Applications. *Entrepreneurial Business and Economics Review*, 5(1), 43-58. https://doi.org/10.15678/EBER.2017.050103

Ko, E., Kim, E. Y., & Lee, E. K. (2009). Modeling consumer adoption of mobile shopping for fashion products in Korea. *Psychology & Marketing*, 26(7), 669-687. https://doi.org/10.1002/mar.20294

Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research*, 39(1), 61-72. https://doi.org/10.1509/jmkr.39.1.61.18935

Larivière, B., Joosten, H., Malthouse, E. C., Birgelen, M. V., Aksoy, P., Kunz, W. H., & Huang, M. H. (2013). Value fusion: The blending of consumer and firm value in the distinct context of mobile technologies and social media. *Journal of Service Management*, 24(3), 268-293. https://doi.org/10.1108/09564231311326996

Lu, H. P., & Su, P. Y. J. (2009). Factors affecting purchase intention on mobile shopping web sites. *Internet Research*, 19(4), 442-458. https://doi.org/10.1108/10662240910981399

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological Bulletin*, 97(3), 562-582. https://doi.org/10.1037/0033-2909.97.3.562

Natarajan, T., Balasubramanian, S. A., & Kasilingam, D. L. (2018). The moderating role of device type and age of users on the intention to use mobile shopping applications. *Technology in Society*, 53, 79-90. https://doi.org/10.1016/j.techsoc.2018.01.003

Natarajan, T., Balasubramanian, S. A., & Kasilingam, D. L. (2017). Understanding the intention to use mobile shopping applications and its influence on price sensitivity. *Journal of Retailing and Consumer Services*, 37, 8-22. https://doi.org/10.1016/j.jretconser.2017.02.010

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*, Sage publications.

Newman, C. L., Wachter, K., & White, A. (2018). Bricks or clicks? Understanding consumer usage of retail mobile apps. *Journal of Services Marketing*, 32(2), 211-222. https://doi.org/10.1108/JSM-08-2016-0289

Osborne, J. W. (2014). *Best Practices in Exploratory Factor Analysis*, CreateSpace Independent Publishing.

Pantano, E., & Priporas, C. V. (2016). 1The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective. *Computers in Human Behavior*, 61, 548-555. https://doi.org/10.1016/j.chb.2016.03.071

Park, C., Jun, J. K., & Lee, T. M. (2015). Do mobile shoppers feel smart in the smartphone age?. *International Journal of Mobile Communications*, 13(2), 157-171. https://doi.org/10.1504/IJMC.2015.067961

Peter, J. P. (1981). Construct validity: A review of basic issues and marketing practices. *Journal of Marketing Research*, 18(2), 133-145. https://doi.org/10.1177/002224378101800201

Ppro (2020). *2019-2020 payments and e-commerce report: Western and Central Europe*. https://www.ppro.com/download/western-and-central-europe-e-commerce-report/

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, 19(3), 303-316. https://doi.org/10.1086/209304

Rose, S., Clark, M., Samouel, P., & Hair, N. (2012). Online customer experience in e-retailing: an empirical model of antecedents and outcomes. *Journal of Retailing*, 88(2), 308-322. https://doi.org/10.1016/j.jretai.2012.03.001

San-Martín, S., Jiménez, N., & Puente, N. (2019). Bridging the gap between customer experience management and mobile shopping. *Review of Business Management*, 21(2), 213-234. https://doi.org/10.7819/rbgn.v21i2.3971

San-Martín, S., López-Catalán, B., & Ramón-Jerónimo, M. A. (2013). Mobile shoppers: Types, drivers, and impediments. *Journal of Organizational Computing and Electronic Commerce*, 23(4), 350-371. https://doi.org/10.1080/10919392.2013.837793

Sharma, S. (1996). *Applied Multivariate Techniques*, John Wiley & Sons.

Shkoler, O. (2019). Using Contemporary Quantitative Techniques. Hackett, P. M. W. (Ed.), *Quantitative Research Methods in Consumer Psychology,* Routledge, pp. 22-58.

Thompson, B. (2000). Ten Commandments of Structural Equation Modeling. Grimm, L. & Yarnold Y. (Eds.), *Reading and Understanding More Multivariate Statistics*, American Psychological Association, pp. 261-284.

Thongpapanl, N., Ashraf, A. R., Lapa, L., & Venkatesh, V. (2018). Differential effects of customers' regulatory fit on trust, perceived value, and m-commerce use among developing and developed countries. *Journal of International Marketing*, 26(3), 22-44. https://doi.org/10.1509/jim.17.0129

Wang, R. J. H., Malthouse, E. C., & Krishnamurthi, L. (2015). On the go: How mobile shopping affects customer purchase behavior. *Journal of Retailing*, 91(2), 217-234. https://doi.org/10.1016/j.jretai.2015.01.002

Wearesocial (2020). *Digital 2020: Global digital overview*. https://wearesocial.com/digital-2020

Wong, C. H., Tan, G. W. H., Ooi, K. B., & Lin, B. (2015). Mobile shopping: the next frontier of the shopping industry? An emerging market perspective. *International Journal of Mobile Communications*, 13(1), 92-112. https://doi.org/10.1504/IJMC.2015.065892

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806-838. https://doi.org/10.1177/0011000006288127

Wu, J. H., & Wang, Y. M. (2006). Development of a tool for selecting mobile shopping site: A customer perspective. *Electronic Commerce Research and Applications*, 5(3), 192-200. https://doi.org/10.1016/j.elerap.2005.09.004

Wymer, W., & Alves, H. M. B. (2013). Scale development research in nonprofit management & marketing: a content analysis and recommendation for best practices. *International Review on Public and Nonprofit Marketing*, 10(1), 65-86. https://doi.org/10.1007/s12208-012-0093-1

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60(2), 31-46. https://doi.org/10.2307/1251929