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Segmentation of Customers Based on Behavioral Intention to Use Multi-Channel Banking and Experience

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Abstract

Purpose - This study aims to segment customers in an emerging economy based on behavioral intention to use multi-channel banking and experience. The study also profiles the customer segments in terms of perceived ease of use, perceived usefulness, perceived risk, and innovativeness.
Design/methodology/approach - An online survey was distributed by using convenience sampling in Turkey, and a total of 164 financial customers participated in the survey. A two-step cluster analysis was conducted to segment customers on behavioral intention to use multi-channel banking and experience scores. The profiles of the clusters were then examined according to perceived ease of use, perceived usefulness, perceived risk, and innovativeness.
Findings - As a result of clustering analysis, financial customers were divided into three segments including "enthusiastic experts", which had the share of nearly half of the sample, "reluctant experts" and "reluctant amateurs.
Limitations - A non-parametric one-way ANOVA on ranks revealed differences among the segments. Future studies should conduct parametric analysis to reveal the differences if the assumptions are satisfied.
Social/Economic/Sectoral value - The findings of this study can respond to international investors who would be interested in the banking industry in a developing country.
Originality - The current study offers unique insights to understand distinct consumer segments according to behavioral intention to use multi-channel banking and experience.

Keywords: Multi-channel banking, intention, experience, technology acceptance model, cluster analysis, emerging economy, developing country
Paper Type: Research Article

Introduction

With the development of new communication and information technologies like the internet and digitalization, companies have changed the way they operate. Many companies today use digital channels to provide better services to their customers. The financial sector also benefits from digitalization. Banks couldserve their customers through mobile and internet banking, thanks to digitalization. There is a considerable amount of literature on how to serve financial customersin digitalized banking platforms(Wessels and Drennan, 2010; Mann and Sahni, 2012; Shankar and Kumari, 2016; Chawla and Joshi, 2017; Manser Payne, Peltier and Barger, 2017; Sharma *et al.*, 2017; Mbama and Ezepue, 2018). Digitalization also contributed to the opportunity for companies to provide goods and services through more than one channel of distribution, which is called a multi-channel strategy (Coelho and Easingwood, 2008).

The multi-channel strategy refers to benefiting from physical and virtual stores in the distribution of merchandise(Swaminathan and Tayur, 2003), andthe multi-channelconsumeris described as a consumer who use two or more channels in their operations (Kumar and Venkatesan, 2005; Venkatesan, Kumar and Ravishanker, 2007; Cortiñas, Chocarro and Villanueva, 2010). A comprehensive understanding of multi-

channel consumer behavior and the characteristics of distinct segments utilizing multi-channel would be a key forproviding a holistic customer experience(Dalla Pozza *et al.*, 2018). Therefore, businesses should try to understand how and why consumers use different channels to understand consumer's multi-channel consumer behavior and adopt suitable multi-channel segmentation strategies(De Keyser, Schepers and Konuş, 2015). Previous research established that Technology Acceptance Model (TAM) would providea useful way to understand multi-channel consumer behavior (Kim and Lee, 2008; Heinhuis and De Vries, 2009; Frasquet, Ruiz-Molina and Molla-Descals, 2015; Arora and Sahney, 2018).

The multi-channel strategy has also been utilized in the financial sector for a long time (Pikkarainen *et al.*, 2004) and utilized in the banking sector as using more than one of the available banking channels (Patel and Brown, 2016). Namely, the banking sector involves many services such as money transfer, bill payment, credit card, information update, credit, deposit and demand deposit transactions trading via many channels. The mentioned channels could bea mobile application, internet banking, physical branch, ATM and call center. Alternative channels offered by banks are essential for customers to find the most appropriate channel for them and perform their transactions on this channel or channels. In particular, banks should understand the expectations of customers and the reasons behind their channel preferences so that they can serve their customers in the best possible way.TAMhasalso emerged as a key model in many studies in finance sector(e.g. Ramayah *et al.*, 2003; Deb and Lomo-David, 2014) and has been used to understand a user acceptance of the new technology.

According to TAM, behavioral intention is specified as a major determinant of performing a usage behavior. Perceived ease of use and perceived usefulness are the two component variables of TAM to explain the behavioral intention(Davis, 1989). Considering these, the conceptual framework of this study is based on the TAM since it suggests a forceful explanation for consumer acceptance and usage behavior of information technology. Moreover, TAM is one of the models that most suitable to enhance with many different variables. In a multi-channel context, behavioral intention to use multi-channel banking not only depends upon perceived usefulness and perceived ease of use but also depends on the risk involved in multi-channel usage.On the other hand, innovativeness is a crucial variable to understand why consumers adopt a new technology or not. Namely, it describes a user's choice to try new and different products. There is a considerable literature on TAM enhanced with perceived risk(Lee, 2009; Giovanis, Binioris and Polychronopoulos, 2012; Sanayei and Bahmani, 2012; Mutahar *et al.*, 2018)and innovativeness(Lassar, Manolis and Lassar, 2005; Joo, Lee and Ham, 2014; Alalwan *et al.*, 2018). Taking into account all of these, extended TAM enhanced with additional predictors of perceived risk and innovativeness was used in the current study to understand the behavioral intention to use multi-channel banking of financial customers.

As well as understandingwhythe financial customers behave in a particular wayin multi-channel banking context, it would also be critical to know who act similarly and who they are(Ennew and Waite, 2007). Segmentation is a practical approach to allow the banks for learning about their markets and tailoring their strategies for each market segment accordingly(Meidan, 1984). Existing segmentation studies have tried to identify financial customer clusters and profilethem by using psychographic variables like 'attitude'(Laukkanen, 2007), 'loyalty' (Sousa and Voss, 2012), and 'channel usage patterns'(De Keyser, Schepers and Konuş, 2015). Additionally, previous studies learned more about financial customer segments by using experience (Mattsson and Helmersson, 2005; Laukkanen, 2007) or behavioral intention (Chawla and Joshi, 2017)as describing variables.Since many studies have stated that usage experience is related to consumers' intention or adoption of behavior (Jaruwachirathanakul and Fink, 2005; Lee, Kwon and Schumann, 2005; Polasik and Wisniewski, 2009; Zhou, 2012; Patel and Brown, 2016), behavioral intention to use multi-channel banking and experience would be efficient in discriminating financial customers.After identifying financial customer segments, further description of segments is essential for respondingspecifically to the needs of financial customers(Ennew and Waite, 2007). Therefore,within the scope of extended TAM, describing the segments further with the variablesof perceived ease of use, perceived usefulness, perceived risk and innovativeness would provide a closer recognition of the customer segments and allow banks to develop specific marketing strategies for each segment.

While most researchers identified multi-channel consumer behavior in developed countries(Plé, 2006; Konuş, Verhoef and Neslin, 2008; Cortiñas, Chocarro and Villanueva, 2010), there is also a need to identify multi-channel consumer behavior in emerging economies(Dalla Pozza *et al.*, 2018). Turkey, as an emerging economy has many opportunities for international investors such as a strategic location with profitable export opportunities, a diversified economy, a young population and an entrepreneurial business ecosystem. Turkey is the 13th largest economy in the world, according to GDP at purchasing power parity in 2019(Trading Economics, 2020). The banking sector is an integral part of the financial system, is one of Turkey's fastest-growing sector.As of December 2019,

a total of 53 banks including 34 deposit banks, 13 development and investment banks and six participation banks operate in the Turkish banking sector and according to the ownership group distinction; public banks have a share of 41%, domestic private banks 33% and foreign banks 26%(Banking Regulation and Supervision Agency, 2019). Depending on the opportunities brought by digitalization and investments, bank customers can now perform their banking transactions through many different channel alternatives such as mobile application, internet banking, physical branch, ATM and call center in Turkey.According toThe Banks Association of Turkey (2020),the number of active digital banking customers in the period of January-March 2020 is 56 million 324 thousand Moreover, out of this figure, approximately 4 million people performed "internet banking only", while 44 million performed "mobile banking only". The number of users who make both mobile and internet banking transactions is 8 million 412 thousand.

In pursuit of identifying and describing financial customers segments in a multi-channel context in a developing economy, the objectives of this study were threefold. The first was to segment financial customers in Turkey based on behavioral intention to use multi-channel banking and their experience in multi-channel banking. The second was to describe the financial customer segments based on extended TAM by using perceived ease of use, perceived usefulness, perceived risk and innovativeness. The third was to offer insights to international investors interested in capitalizing in an emerging economy.This paper begins with a theoretical background, following by methodology and results.Then, the final sectionincludes a discussion of the significant findings along with implications, future research directions and limitations.

Theoretical background

Technology Acceptance Model And Experience

TAM is used widely in empirical studies (Mathieson, 1991; Adams, Nelson and Todd, 1992; Chin and Todd, 1995; Chau, 1996) and it is considered most effective model using to express a person's acceptance of the information systems (Lee, Kozar and Larsen, 2003). TAM was originally proposed byDavis, Bagozzi and Warshaw (1989)to determine the adoption of a new information system (IS) depending on the attitude of the user towards the IS and hence, the intention to use it (Natarajan, Balasubramanian and Kasilingam, 2017). The intention is determined by the individual's perceptions about his/her attitude and usefulness of IS, while attitudes are made up of a person's beliefs about IS (Szajna, 1996). Perceived ease of use (PEU) and perceived usefulness (PU) of any technology are two core variables to predict the attitude in TAM(Natarajan, Balasubramanian and Kasilingam, 2017). However, the attitude was eliminated by Venkatesh and Davis (1996) from the TAM because it has been revealed that attitude is not significantly related to the use of technology(Thompson, Higgins and Howell, 1991). There is a discussion (Nistor and Heymann, 2010; Teo, Faruk Ursavaş and Bahçekapili, 2011) about whether attitude is a mediator between these two variables. The non-attitude TAM proposed by (Venkatesh and Davis, 1996) was used in this research since the results of the attitude included model did not differ significantly from non-attitude models was not much(Nistor and Heymann, 2010).

Although the TAM is excellent in explaining the acceptance of the individual the IS technology, the influence of other variables on the acceptance of the IS should be examined as noted in the study of Davis (1989). Several studies extended TAM by integrating different variables such as trust and risk to explain the acceptance of e-commerce(Pavlou, 2003), perceived enjoyment to understand emotional and cognitive responses of consumers on the web (Koufaris, 2002), personal innovativeness and user interfaceto examine the adoption of mobile learning(Joo, Lee and Ham, 2014). Researchers also extended TAM by integrating new variables to explain consumer's intention or adoption of internet banking (Chau and Lai, 2003; Wang *et al.*, 2003; Guriting and Oly Ndubisi, 2006; Hua, 2008) or mobile banking (Amin *et al.*, 2008; Gu, Lee and Suh, 2009). Additionally, the behavioral intentionto use targeted technology may be affected by the consumers' experience level. When the experience of consumers with the targeted technology increases, they tend to adopt this technology more confidently (Wang, Lin and Luarn, 2006; Wessels and Drennan, 2010; Venkatesh, Thong and Xu, 2012).The predictive capability of TAM can easily be enhanced by integrating additional variables to the model. Thus, to examine behavioral intention to use multi-channel banking of financial customers, the TAM is expanded in this study involving the variables of perceived risk andinnovativeness.

Perceived Ease of Use

Perceived ease of use was described "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989: 320) and reflected an individual's status of complexity in using technology. According to TAM, perceived ease of use and perceived usefulnessare two variables affecting the intention to use. It was also found that there is a positive correlation between them (Davis, Bagozzi and Warshaw, 1989; Davis, 1993). Several studies investigated the role of perceived ease of use on the behavioral intention to use banking channels (e.g. Chau and Lai, 2003; Wang *et al.*, 2003; Guriting and Oly Ndubisi, 2006; Amin *et al.*, 2008; Hua, 2008; Gu, Lee and Suh, 2009). Additionally, users with less experience in IS have been shown to be more affected by perceived ease of use(Venkatesh *et al.*, 2003). Thus, perceived

ease of usewould be efficient in describing the segments with different levels of behavioral intention to use multi-channel banking and experience.

Perceived Usefulness

Perceived usefulness is one of the main external variable of TAM and was described by Davis (1989)as "the degree to which a person believes that using a particular system would enhance his or her job performance". Perceived usefulness also refers to the subjective evaluation of a user about the improvement in his or her performance as a result of using a certain application (Pikkarainen *et al.*, 2004). Previous research has established that perceived usefulness positively affected the intention to use mobile banking (Deb and Lomo-David, 2014; Wang *et al.*, 2014; Shankar and Kumari, 2016). Additionally, Rajaobelina, Brun and Ricard, (2019) segmented live chat service users in the banking industry and mentioned that the channel preferences of consumers are related to the perceived usefulness. Considering these studies and the multi-channel alternatives in the banking industry, the perceived usefulness of consumers become a significant predictor of behavioral intention to use multi-channel banking and experience in multi-channel banking. Thus, perceived usefulness could be a significant variable to describe the segments with different levels of multi-channel banking behavior and experience.

Perceived Risk

Risk is described as the results of behavior that a person views as negative and cannot predict(Bauer, 1960). Accordingly, perceived risk has been defined by many researchers. Bauer (1960) mentioned that the term 'perceived risk' referred to 'a combination of uncertainty plus the seriousness of outcome involved'. Additionally,Featherman and Pavlou (2003) defined as the potential for loss in the pursuit of the desired outcome of using an e-service.In the context of the technology acceptance, the perceived risk variable has an important impact on the intention to use different channels of banks(Brown *et al.*, 2003; Luo *et al.*, 2010; Alsheikh and Bojei, 2014). The negative influence of perceived risk on internet banking adoption or usage intention has been revealed in many studies(e.g. Abadi, Ranjbarian and Zade, 2012; Kesharwani and Singh Bisht, 2012).Moreover, perceived risk has been a major obstacle in the behavioral intention to use mobile banking (Abadi, Ranjbarian and Zade, 2012). A segmentation study conducted by Mann and Sahni (2012) showed that perceived risk was found to be a main factor in the adoption of internet banking. Thus, perceived riskmight characterizedistinct segments of financial customers with different levels of behavioral intention to use multi-channel banking and experience in the current study.

Innovativeness

Innovativeness was described as "the degree to which an individual is relatively earlier in adopting an innovation than other members of his system" (Rogers and Shoemaker, 1971). According to Midgley and Dowling (1978), innovativeness represents a person's preference to try new and different products and do intensive research for new products. Previous studies suggest that there is a positive and significant correlation between innovativeness and intention to use online banking or mobile banking(Aldás-Manzano *et al.*, 2009; Slade *et al.*, 2015; Abbas *et al.*, 2018). Namely, more innovative peopletend to have a greater sense of pleasure and ease of use of mobile applications(Natarajan, Balasubramanian and Kasilingam, 2017). Individuals who have a high level of innovativeness are also willing to use more channels like mobile, internet banking in the finance sector(Chaoqun Han and Shuiqing Yang, 2010; Siu and Chang, 2015). Thus, innovativeness could be helpful to describe the financial segments according to usage intention of multi-channel banking and experience

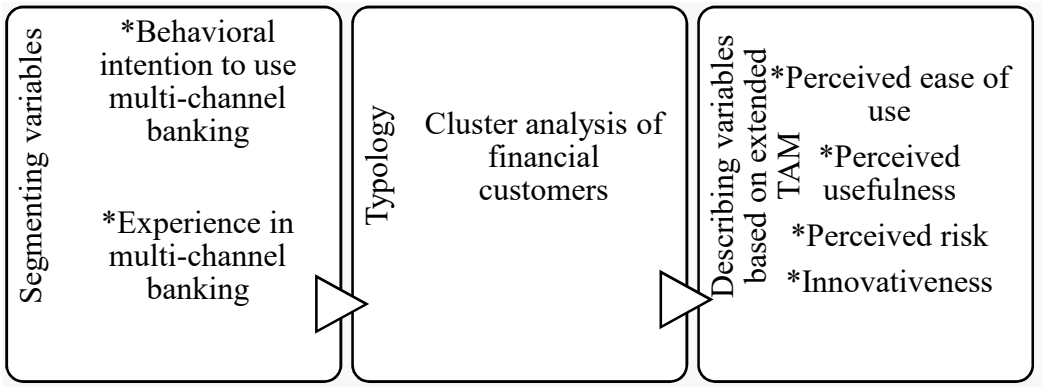

Figure 1: Conceptual framework

Methodology

Data Collection and Instrument Design

The questionnaire included validated measurement itemswith minor modifications from previous research to fit in with the context of multi-channel banking. The items were translated from English to Turkish and then, back-translated to provide functional equivalency with the help of a certified translator and an expert in consumer behavior discipline.

The questionnaire consisted of three main sections.

- The first section: A brief explanation was given aboutmulti-channel banking behavior of consumers. Multi-channel behavior was explained as the use of more than one different channels for transactions(Kumar and Venkatesan, 2005; Sousa and Voss, 2006). It was mentioned that financial customers might use mobile banking, internet banking, physical branch, ATM or call center for transactions (Cortiñas, Chocarro and Villanueva, 2010).
- The second section involves some psychographic variables:
  - Four items for perceived ease of use(Sharma *et al.*, 2017) measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - Three items for perceived usefulness (Venkatesh *et al.*, 2003) measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - Four items for perceived risk(Featherman and Pavlou, 2003; Chen, 2013; Alalwan *et al.*, 2016)measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - Four items for innovativeness (Lu, Yao and Yu, 2005) measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - Three items for behavioral intention to use multi-channel banking(Gu, Lee and Suh, 2009) measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - Multi-channel banking experience measured on a five-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5).
  - The frequency of carrying out banking transactions measured on a five-point scale ranging from "Never" (1) to "Always" (5). Please see the appendix.
- The third section: Some demographic variables such as gender, age and education was asked.

The content validity of the items was ensured with the help of two experts from financial services. Six master students help to ensure face validity with their feedback on the readability and clarity of the items. A pilot test was conductedwith 25 participants with the final version of the questionnaire to ascertain the adequacy of the items.

Data was collected after minor alterations on the wording of the items through an online questionnaire by using convenience samplingin Turkey during February-March 2020. Convenience sampling is commonly adopted in the banking and segmentation studies(e.g. Paluri and Mehra, 2016; Baabdullah *et al.*, 2019). No incentive was given. A total of 165 participants completed the questionnaire. The frequency of banking transactions was used as a filtering question which enabled to exclude participants who never make transactions at banks from the final data set. After the exclusion of participants according to filter question (n=1), 164 usable responses were available for further data analysis. It took approximately 5 minutes for the participants to complete the questionnaire. An introduction part was included in the questionnaire form to inform the participants about the aim of the questionnaire and ensured their anonymity.

Sample Characteristics

Out of 164 participants, about 65.2% were female, and 34.8% were male. The mean age of the participants was 29.55 years old. Among the participants, about 48.2% hold a graduate degree, followed by high-school graduates (22.6%). Regarding the frequency of carrying out banking transactions, 45.1% indicated that they always carry out banking transactions, followed by 41.5%, indicating that they often carryout banking transactions. Only a small percentage of the respondents (3.7%) replied that they rarelycarry out banking transactions.

Preliminary Analysis

Before data analysis, first, one item from innovativeness was coded reversely. Second, data screening procedures were performed to check incomplete responses and underlying assumptions of further data analysis (linearity, normality, and homoscedasticity)(Hair *et al.*, 2010).Third, exploratory factor analysis (EFA) was conducted to ensure construct reliability. Exploratory factor analysis (EFA) using varimax rotation was conducted to assess the factor structure and dimensionality of the measurement scales of perceived ease of use, perceived usefulness, perceived risk,innovation and behavioral intention. Kaiser-Meyer-Olkin (KMO) values for the scales were above 0.7, and the Bartlett sphericity tests were significant at $p< 0.001$(Bartlett, 1954; Kaiser, 1974). EFA produced 5-factor structures which accounted for 83.200% of the total variance. One item from innovation was removed due to low factor loading below 0.5 in accordance with the suggestion of Hair et al. (2010).Cronbach's alpha values for all scales were above 0.858showing an adequate level of reliability (Nunnally, 1978) (Table 1).

Table 1: Descriptive Statistics, Factor Loadings and The Reliability of Variables

Variables	Means	Standard Deviations	Loadings (EFA)	Cronbach's alpha (α)
		PEOU		
$peou_1$	3.79	1.354	0.899	**α=0.965**
$peou_2$	3.87	1.249	0.933	
$peou_3$	3.84	1.238	0.942	
$peou_4$	3.73	1.234	0.904	
		PU		
pu_1	4.21	1.067	0.898	**α=0.976**
pu_2	4.16	1.070	0.912	
pu_3	4.23	1.047	0.902	
		PR		
pr_1	2.84	1.184	0.931	**α=0.954**
pr_2	2.90	1.191	0.958	
pr_3	2.73	1.178	0.918	
pr_4	2.91	1.218	0.907	
		INNO		
$inno_1$	4.10	0.901	0.858	**α=0.858**
$inno_2$	3.77	1.216	0.864	
$inno_3$	4.09	1.059	0.906	
		INT		
int_1	3.90	1.189	0.815	**α=0.858**
int_2	3.84	1.215	0.846	
int_3	3.77	1.200	0.803	

Data Analysis

Second, a two-step cluster analysis approach was performed with the segmentation variables of behavioral intention to use multi-channel banking and experience in multi-channel banking. An overall score for behavioral intention to use multi-channel banking is used in the analysis by adding the scores of each item and dividing this by three. An initial hierarchical cluster analysis was conductedto discover the number of clusters, then, k-means cluster analysis was utilized to identify cluster memberships of each observation. Afterwards, a non-parametric one-way ANOVA on ranks was used to describe the clusters further based on the variables of perceived ease of use, perceived usefulness, perceived risk and innovativeness.

Results

A hierarchical cluster analysis was carried out based on the meanscore of behavioral intention to use multi-channel bankingand experience. Analyzing the dendrograms and agglomeration coefficients providedthe number of clusters (Hair *et al.*, 2010).

Cluster analysis

As a result of hierarchical cluster analysis, a three-cluster solution was obtained. Then, k-means cluster analysis was conducted to evaluatethe stability ofclusters. Three clusters differed from each other according to the mean scores on the behavioral intention and experience (Please see Table 2). The clusters are labeled according to these results. The members of Cluster 1 constitutethe largest share of the sample, with 50% of all participants, and have quite high levels of behavioral intention to use multi-channel bankingand experience. Therefore, the members of this cluster is labeled "enthusiastic experts". The participants of Cluster 2 comprise 23.17% of all participants. Although they are alsoexperienced in multi-channel banking transactions, they do not have behavioral intention to use multi-channel banking. Thus, "reluctant experts" is the label of Cluster 2. The participants of Cluster 3 constitute 26.83% of the sample. This cluster has the lowestbehavioral intention to use multi-channel bankingand experience, so the subjects in this segment are labeled "reluctant amateurs".

Table 2: Mean Scores for the Threeclusters

	Cluster 1 Enthusiastic experts (n=82; 50.00%)	**Cluster 2 Reluctant experts (n=38; 23.17%)**	**Cluster 3 Reluctant amateurs (n=44; 26.83%)**	**Overall Mean Scores (N= 164; 100%)**
Behavioral intention	4.66	3.09	2.95	3.84
Experience	4.57	4.39	2.36	3.94

Description of Clusters

After three cluster-cluster solution was determined and labeled based on the scores of segmentation variables of behavioral intention and experience, the differences between the segments were figured out. One of the most well-known methods to compare the group differences statistically is Analysis of Variance (ANOVA). However, when the normality and homoscedasticity assumptionsare not met, a non-parametric one-way ANOVA on ranks should be used(Hair *et al.*, 2010).The assumptions of parametric one-way ANOVA were not satisfied in the current research, so Kruskal-Wallis H tests with Dunn-Benforroni post-hoc tests were utilized to detect differences between each cluster on perceived ease of use, perceived usefulness, perceived risk and innovativeness.

First, mean scores for perceived ease of use, perceived usefulness, perceived risk, and innovativeness were compared across all clusters to discover the profiles of each segment. Enthusiastic experts (Cluster 1) have the highest perceived ease of use, perceived usefulness innovativeness. Perceived risk of enthusiastic experts is quite low. Reluctant experts (Cluster 2)are averagely innovative and possess moderate perceived ease of use and perceived usefulness.Similar to enthusiastic experts,reluctant amateurs have quite low levels of perceived risk.Reluctant amateurs(Cluster 3) have the least perceived ease of use, perceived usefulness, innovativeness, and their perceived risk level is the lowest among the three clusters.

Then, non-parametric Kruskal-Wallis H tests for one-way ANOVA by Ranks with Dunn-Bonferroni post hoc tests were conducted to compare the group differences statistically. Enthusiastic experts (Cluster 1)differedhighly from reluctant amateurs (Cluster 3) on perceived ease of use (The rank difference between cluster 1 and 3 = 49.160;p<0.001). Similarly, reluctant experts scored higher than reluctant amateurs based on perceived ease of use (The rank difference between cluster 2 and 3 = 27.952; p=0.021).According to perceived usefulness, enthusiastic experts differed from reluctant experts (Rank difference between cluster 1 and 2 = 30.181; p=0.002) and reluctant amateurs (Rank difference between cluster 1 and 3 = 48.958; p<0.001). There is a significant difference only between enthusiastic experts and reluctant amateurs on perceived risk (The rank difference between cluster 1 and 3 = -21.198; p=0.047). Finally, based on innovativeness, enthusiastic experts differentiated from reluctant experts (The rank difference between cluster 1 and 2 = 32.623; p<0.001) and reluctant amateurs (The rank difference between cluster 1 and 3 =31.871; p<0.001) (Table 3).

Table 3: Comparison of Clusters Based on non-parametric Kruskal-Wallis H tests

Clusters	**Cluster 1 Enthusiastic experts (n=82)**		**Cluster 2 Reluctant experts (n=38)**		**Cluster 3 Reluctant amateurs (n=44)**		**Overall**		
Variables	**Mean (SD)**	**Rank**	**Mean (SD)**	**Rank**	**Mean (SD)**	**Rank**	**Mean (SD)**	**Chi2 (2) (p-value)**	**(p<.05)***
Perceived ease of use	4.19 (1.11)	100.60	3.75 (1.21)	79.39	3.16 .(1.11)	51.44	3.81 (1.21)	31.716 (p<.001)	1-3 & 2-3
Perceived usefulness	4.58 (0.86)	102.63	4.03 (1.06)	72.45	3.65 (1.05)	53.67	4.20 (1.04)	36.467 (p<.001)	1-2 & 1-3
Innovativeness	4.31 (0.73)	98.61	3.69 (0.91)	65.99	3.62 (1.10)	66.74	3.98 (0.94)	19.379 (p<.001)	1-2 & 1-3
Perceived risk	2.72 (1.09)	76.85	2.70 (1.07)	76.70	3.19 (1.16)	98.05	2.84 (1.12)	6.585 (p<.05)	1-3

***Different clusters based on Dunn-Bonferroni post hoc tests**

Conclusions

The principal objective of this study was to segment financial customers according to behavioral intention to use multi-channel bankingand experience in multi-channel banking, and then to describe them further forperceived ease of use, perceived usefulness, perceived risk and innovativeness. This study clustered financialcustomersinto three groups, namely, "enthusiastic experts", "reluctant experts", and "reluctant amateurs". These groups were identified according to their scores on behavioral intention and experience. Afterwards, the groups were characterized with respect to their differences in perceived ease of use, perceived usefulness, perceived risk and innovativeness. The following presents theoretical contributions and managerial implications of the current study.

This paper gives an account of multi-channel banking consumer's typology. The results highlight that behavioral intention and experience are useful variables to understand and compare multi-channel banking consumer groups. "Enthusiastic experts" possessed the highest behavioral intention and experience scores among three clusters. "Reluctant

experts" hadlow levels of behavioral intention and high levels ofexperience. "Reluctant amateurs" were found to have the lowest behavioral intention and experience scores.Experienced consumers who tend to use multi-channel banking(Cluster 1: enthusiastic experts)have the largest share of all participants. This result is in accord with those of previous studies which concluded financial customers tend to use a multiple numbers of channels (Liao and Cheung, 2002; Cortiñas, Chocarro and Villanueva, 2010).

Multi-channel behavior is highly related to customer's preferences, perceptions and properties(Pertiwi, Guihua and Pingfeng, 2016). Thus,the profiles of three typology groups based on the describing variables of perceived ease of use, perceived usefulness, perceived risk and innovativenesshelp to gain a better understanding of the behavioral intention to use multi-channel bankingand experience.In particular, firstly, the level of perceived usefulness and innovativeness significantly differed between clusters 1 and 2 (enthusiastic experts and reluctant experts), and also clusters 1 and 3 (enthusiastic experts and reluctant amateurs).This finding suggests that perceived usefulness and innovativeness are effective in financial customersintention to use multi-channel bankingsince these groups differed only in intention but have similar scores on experience.This finding is consistent with previous studies that showed perceived usefulness (Guriting and Oly Ndubisi, 2006; Gu, Lee and Suh, 2009; Lee, 2009; Chong *et al.*, 2010; Shanmugam, Savarimuthu and Wen, 2014)and innovativeness(Aldás-Manzano *et al.*, 2009; Thakur and Srivastava, 2014; Frimpong *et al.*, 2017; Chauhan, Yadav and Choudhary, 2019)were significant predictors ofbehavioral intention to use multi-channel banking.

Secondly, perceived ease of use levels significantly differed between the between clusters 1 and 3 (enthusiastic experts and reluctant amateurs), and also clusters 2 and 3 (reluctant experts and reluctant amateurs).This finding indicates that perceived ease of use of multi-channel banking is an effective discriminatorin the perceived experience of multi-channel banking transactions. Financial customers perceive themselves experienced when their perceived ease of use of multi-channel banking increases. This finding is in line with other research which found a relationship between experience and perceived ease of use (Yoon, 2010; Zhou, 2012; Alsamydai, 2014). However, perceived ease of use does not affect behavioral intention to use multi-channel banking. This outcomeis contrary to the previous studies which have suggested that perceived ease of use significantlyaffects behavioral intention to use multi-channel banking(Jham, 2009; Lee and Im, 2015; Patel and Brown, 2016).

Thirdly, perceived risk provided significant differences among the clusters 1 and 3 (enthusiastic experts and reluctant amateurs). This finding suggests that when the perceived risk of financial customers is high as observed in Cluster 3, financial customers can neither tend to use multi-channel banking nor perceive themselves experienced. Previous studies have also reported that perceived risk is a significant prerequisite of mobile or online banking behavior(Aldás-Manzano *et al.*, 2009; Lee, 2009; Abadi, Ranjbarian and Zade, 2012; Kesharwani and Singh Bisht, 2012; Chen, 2013).

The results of the current study also have important implications for managers and marketing strategiststo satisfy their customers. First, about half of the financial customers both perceive themselves as experienced and tend to use multi-channel banking. This ratio is expectable, considering that nearly 8 million out of 56 million digital banking customers use only internet and mobile banking channels together (The Banks Association of Turkey, 2020).Customer retention and loyalty of this segment are critical for banking industry since they comprise the largest share of the sample.To buildlong-term relationships with enthusiastic experts, banking industry should offer this group innovative financial products and services since enthusiastic experts differed from reluctant experts and reluctant amateurs in terms of innovativeness. Additionally, enthusiastic experts possessed the highest perceived usefulness of multi-channel banking; therefore, managers may use communication strategies for this group to emphasize the convenience of multi-channel banking.

Second, reluctant experts perceive themselves as experienced in multi-channel banking, but they are reluctant to use. The underlying causes of this group fornot tointend to use multi-channel banking may be related to their low levels of innovativeness and perceived usefulness. It may be difficult for managers to reveal reluctant experts' innovative capabilities, but they may emphasize the convenience and speed of multi-channel banking to increase reluctant experts' perceived usefulness level.

Third, managers should identify the reluctant amateurs and then, they would reduce reluctant amateurs' perceived risk levels. For example, channel transparency or uniformitymay be provided by giving information about theirtransaction's status in a certain channel or by ensuring consistency among different channels to reduce risk (Xu and Jackson, 2019). After reducing risk levels of financial customers, perceived ease of use and perceived usefulness should be by communication strategies which emphasize convenience and ease of use of multi-channel banking.

Future research directions and limitations

This research may have some limitations. To begin with, this study employed a convenient sampling of financial customers in a small region. Therefore, the findings cannot be generalized to other populations. Further data collection is required. Future studies may improve generalizability by using a wider sample of bank customers. Extending this work in a developed country allows for comparative studies of behavioral intention to use multi-channel banking by cultural differences. Moreover, users who use two or more banking channels are involved due to the focus of the study. It may causes problems in generalizing the results to the whole population. For that reason, future research may investigate and segment financial customers in an omnichannel banking context.

The current study segmentedfinancial customers according to behavioral intention to use multi-channel banking and experience, then further describe the segments with the components of extended TAM. However,in future studies, clusters can be defined in more detail by adding other variables such as social influence, trust, or lifestyle.

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YAZARLAR:

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Appendix

PEOU	**Perceived ease of use(Sharma *et al.*, 2017)**
$peou_1$	I find it easy to complete my tasks using multi-channel banking.
$peou_2$	I find it easy to learn to use multi-channel banking.
$peou_3$	It is understandable to complete my tasks using multi-channel.
$peou_4$	I expect to become skilled at multi-channel banking.
PU	**Perceived usefulness (Venkatesh *et al.*, 2003)**
pu_1	Using the multi-channel banking to carry out a banking transaction accelerates me.
pu_2	Being able to use multi-channel banking is useful to me.
pu_3	Being able to use multi-channel banking makes my life easier.
PR	**Perceived risk (Featherman and Pavlou, 2003; Chen, 2013; Alalwan *et al.*, 2016)**
pr_1	I feel that using multi-channel banking could subject my banking account to potential fraud.
pr_2	I feel that using multi-channel banking could put the privacy of my information at risk.
pr_3	I feel that using multi-channel banking could subject my banking account to financial risk.
pr_4	I feel that my private information could be hacked when using multi-channel banking.
INNO	**Innovativeness (Lu, Yao and Yu, 2005)**
$inno_1$	If I heard about a new information technology, I would look for ways to experiment with it.
$inno_2$	Among my peers, I am usually the first to explore new information technologies.
$inno_3$	I like to experiment with new information technologies.
$inno_4$	In general, I am hesitant to try out new information technologies. (R)
INT	**Behavioral Intention(Gu, Lee and Suh, 2009)**
int_1	I plan to use multi-channel banking in future.
int_2	I intend to use multi-channel banking.
int_3	I recommend use of multi-channel banking among peers and relatives.
EXP	**Experience**
exp	I have experience using multi-channel banking services.
FREQ	**Frequency**
freq	What is the the frequency of carrying out banking transactions?
	R: Reversed coded item