



## AN ASSESSMENT OF M-CUSTOMER SATISFACTION DRIVERS AND LEVELS FROM M-SHOPPING APPLICATIONS WITH KANO'S MODEL \*

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### Abstract

M-Customer satisfaction affects m-customers' future purchase intentions, decisions and therewithal m-stores' future profits. M-store managers should consider drivers of m-customer satisfaction for sustainability and success in m-commerce. M-store managers should offer a successful m-store design to attract m-customers to shop from m-stores. M-store applications should be designed according to m-customers' wishes and desires to gain sustainable competitive advantages. The purposes of this research are to develop a framework for determining the drivers of m-customer satisfaction, to measure m-customer satisfaction level from m-shopping applications, to examine current intentions about m-shopping in Turkey, to highlight the points in m-store design that is needed to increase m-customer satisfaction. For those objectives, first literatures were reviewed; second the descriptive researches are conducted. In the empirical study, students from Pamukkale University, Denizli-Turkey were selected as samples. The data were obtained from 245 students by using questionnaire technique and analyzed in the light of Kano model. According to Kano analysis, one dimensional and indifferent requirements for m-store design were determined.

**Keywords: Mobile Marketing, Mobile Applications, Customer Satisfaction, Kano Model**

### M-ALİŐVERİŐ UYGULAMALARINDAN M-MÜŐTERİ MEMNUNİYETİ FAKTÖRLERİ VE DÜZEYİNİN KANO MODELİ İLE DEĐERLENDİRİLMESİ

#### Öz

Mobil müşteri memnuniyeti, mobil müşterilerin gelecekteki satın alma niyetlerini, kararlarını ve bununla beraber mobil mağazaların gelecek kârlarını etkilemektedir. Mobil mağaza yöneticileri, mobil ticarete başarı ve sürdürülebilirlik için mobil müşteri memnuniyetini dikkate almalıdırlar. Mobil mağaza yöneticileri, mobil müşterilerin mobil mağazalardan alışveriş yapmalarını çekici kılabilmek amacıyla onlara başarılı mobil mağaza tasarımları sunmalıdırlar. Mobil mağaza uygulamaları, sürdürülebilir rekabet avantajı kazanmak için mobil müşterilerin istek ve arzularına doğrultusunda tasarlanmalıdır. Bu çalışmanın amaçları; mobil müşteri memnuniyetini etkileyen faktörleri belirlemek, mobil alışveriş uygulamalarından elde edilen mobil müşteri memnuniyet düzeyini ölçmek, Türkiye'de mobil alışveriş hakkındaki mevcut tutumları incelemek ve mobil alışverişten elde edilen müşteri memnuniyetini arttırmak için mobil mağaza tasarımlarında gerekli olan özellikleri belirlemek olarak sıralanabilir. Bu amaçlarla, öncelikle literatür taraması yapılmış ve tanımlayıcı araştırma gerçekleştirilmiştir. Uygulama çalışmasında örneklem olarak Pamukkale Üniversitesi öğrencileri, Denizli-Türkiye

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seçilmiştir. Veriler 245 öğrenciden anket tekniği ile elde edilmiş ve Kano modeli ışığında analiz edilmiştir. Kano analizine göre, mobil mağaza tasarımları için beklenen özellikler ve sıradan özellikler belirlenmiştir.

**Anahtar Kelimeler:** Mobil Pazarlama, Mobil Uygulamalar, Müşteri Memnuniyeti, Kano Modeli

## **Introduction**

During the past decade, mobile communication systems and mobile (smart) phones have surged to the forefront of the business environments and they made a revolution generally in marketing and particularly in shopping, advertising and retailing by influencing both the customers and the ways in which companies conduct their businesses and marketing activities. Beside the advantages of shopping on mobile phones provided to customers, proliferation of mobile phones, convergence of mobile telecommunication networks and mobile phones' inherently mobility and personal characteristics provided great opportunities to marketers. They provided a new revenue generating direct marketing tool after internet and they gave chance to marketers to fulfill their desires to contact with customers anywhere and anytime.

Considering the fact that m-customers who aren't totally satisfied might not pay for a product and service from m-stores, in case of they have a choice of shopping somewhere else, it is clear that m-customers' willingness to shop from m-stores is impressed by the customer satisfaction. By the way customer satisfaction effects m-customers' future purchase intentions, decisions and m-stores' future profits. Consequently determining the key drivers of m-customer satisfaction is increasingly drawing the attention of academic researchers and m-store managers to take the advantages of mobile revolution. Different academicians found some characteristics that affect m-customer satisfaction as convenience, usability, reciprocity, entertainment, appearance, accessibility, customization, interaction, privacy, security, trust, information quality, mobility and perceived price level. M-retailers should offer not only good quality and price but also effective m-store applications, because a successful m-store design increases the willingness of m-customer to shop from m-stores with its positive effects on m-shopping behaviors.

The m-shopping applications should be designed to satisfy the m-customers wants and wishes. The key point is how to convert voices of m-customers into design characteristics. In this study, the Kano Model will be used to prioritize the drivers of m-customer satisfaction, analyze their needs/wants and transfer them into the right design characteristics of m-stores in order to increase m-customer satisfaction.

The study consists of three main parts; (1) literature review of mobile revolution, customer satisfaction concepts and drivers of m-customer satisfaction, (2) analyzing of m-customer satisfaction concepts to determine m-customer satisfaction level from m-shopping applications, to examine current intentions about m-shopping in Turkey and to find what is needed to increase m-customer satisfaction from shopping and (3) performing of Kano analysis to determine the effect of m-customer satisfaction drivers. Research methodology, questionnaire design, data collection and data analysis details of the drivers of m-customer satisfaction, Kano evaluation table, Kano model questionnaire results and m-customer satisfaction coefficient for m-shopping applications are provided, and managerial implications and recommendations are given.

### **Mobile Revolution in Marketing**

Advances in the internet and mobile communication technologies have impacts on everything from lifestyle to business. In parallel with the Internet, mobile communication and 4G technologies have emerged to play an important role in business and especially in marketing. They aren't only offering new commercial channels to companies but also significantly influencing the way in which companies conduct their businesses and marketing activities. Mobile phones -as their personal device they carry next to them to everywhere-made a revolutionary contribution to fulfilling marketers' desires to be able to interconnect with potential customers and to contact them anywhere and anytime (Barutçu, 2007; Barutçu 2008). Proliferation of mobile devices, convergence of mobile telecommunication networks and Internet, transition of new generation mobile communication system and the emergence of broad set of highly personalized location applications and services, supported the emergence of mobile commerce (Sadeh, 2002). In addition to this, the rapid growth of mobile phones transformed mobile commerce into a major driving force for the next wave of e-commerce (Liang and Wei 2004). Hereby the growth and use of m-commerce as an emerging technology has the potential to dramatically change the way consumers make business (Aungst and Wilson, 2005).

In the literature, in front of concepts related to mobile communications are put an "m". Therefore, m-marketing, m-commerce, m-retailer, m-store, m-customer and m-customer satisfaction etc. are preferred instead of mobile marketing, mobile commerce, mobile retailer, mobile store, mobile customer and mobile customer satisfaction etc. Shortly, m-marketing refers to marketing activities and programs performed via mobile phone in m-commerce. M-commerce, m-marketing and m-shopping is carried out via m-applications. The number of

applications available for download in leading app stores is 1.6 million in Android and 1.5 million in Apple's App Store as of July 2015 (www.statista.com, Last visited: August, 24 2015). Thus, m-consumer satisfaction from m-shopping and m-application has been the subject of much attention in the m-marketing, m-stores and m-commerce.

### **Customer Satisfaction Concept and M-Customer Satisfaction Drivers**

From both the theoretical and the empirical perspectives, for companies' competitiveness, customer satisfaction has been considered the essence of success, and identified as one of the key factors in the battle for competitive differentiation and customer retention in today's highly competitive business world (Bitner and Hubbert, 1994; Su, 2004). Therefore, the aim of managing customer satisfaction is to obtain a higher rate of customer retention and improve a company's market share and profits.

Customer satisfaction is often defined as the customers' post-purchase comparison between pre-purchase expectation and performance received (Oliver, 1980). According to Zeithaml et al. (1990), customer satisfaction depended on the balance between customers' expectations and customers' experiences with the products and services, and they added when a company is able to lift a customer's experience to a level that exceeds that customer's expectations, then that customer will be satisfied. Oliver (1999) defined customer satisfaction as an evaluation of the perceived discrepancy between prior expectations and the actual performance of the products or services. Kotler (2000) defined customer satisfaction as a customer's feelings of pleasure or disappointment resulting from comparing product's perceived performance in relation to his/her expectations. Kim et al. (2003) emphasized that customer satisfaction was a post-purchase attitude formed through a mental comparison of the product and service quality that a customer expected to receive from an exchange. The reason why customer satisfaction is important is that improving customer satisfaction has a higher chance of purchasing products and service from the same store and remaining loyal customers (Kim and Eom, 2002).

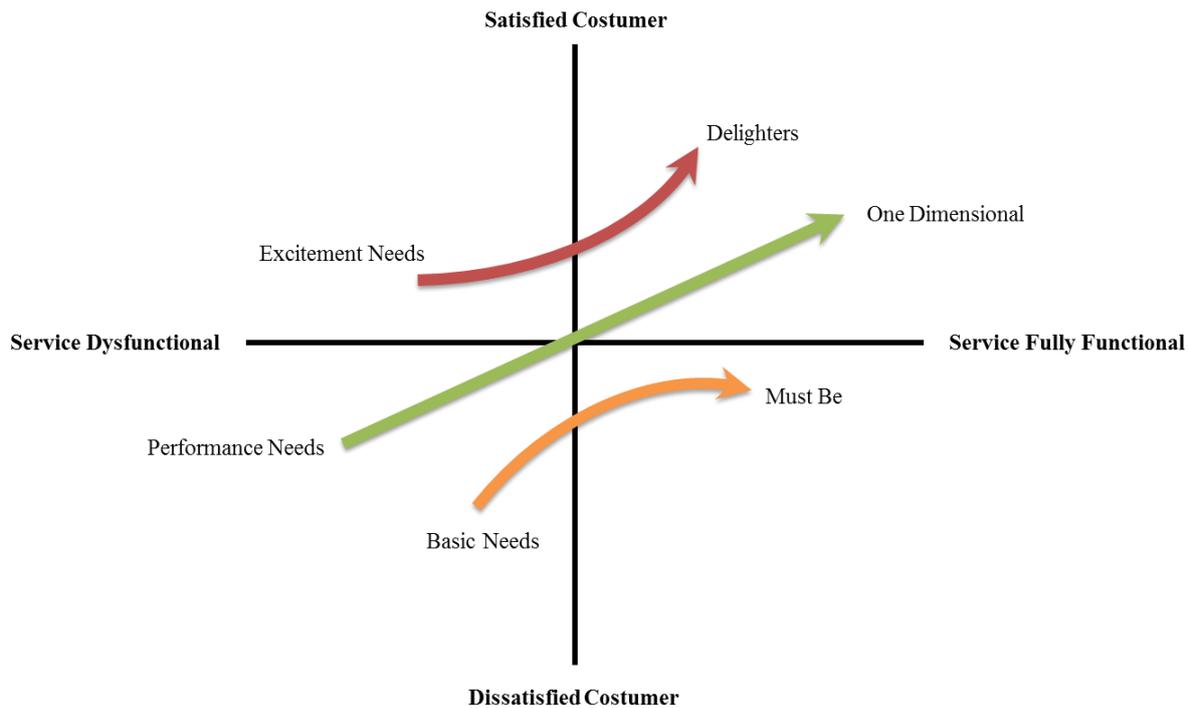
M-customer satisfaction is accepted as one of the key influence in m-customers' future purchase intentions and decisions, and known as one of the indicators of the m-stores' future profits in m-commerce. M-customers who are not totally satisfied might not pay for a product and service from m-store, if they have a choice of shopping somewhere else. Therefore, determining the key drivers of m-customer satisfaction is increasingly drawing the attention of academic researchers and m-store managers. For example many academicians like Taha et al. (2013), Okazaki and Mendez (2013), Li and Yeh (2010), Kuo et al. (2009), Choi et al.

(2008), Wang and Liao (2007), Kim et al. (2005), Wu and Wang (2005) and Cheong and Park (2005) determined some drivers for m-customer satisfaction as transaction process, system quality, content reliability, convenience, usability, reciprocity, entertainment, appearance, accessibility, customization, interaction, privacy, security, trust, information quality, mobility and perceived price level, visibility, customer service, functionality of mobile device, and availability. To sum up, different factors, sub factors and researchers of each driver in the mobile marketing literature were seen. Barutçu et al. (2015) categorized fourteen essential factors for m-customer satisfaction as convenience, usability, reciprocity, entertainment, appearance, accessibility, customization, interaction, privacy, security, trust, information quality, mobility and perceived price level, and tested the relationships among m-customer satisfaction drivers using the multiple regression analysis. The m-shopping applications should be designed to satisfy the m-customers wants and wishes. One of the key arguments is to listen the voices of m-customers. In this study, the Kano Model will be used to understand m-customer wants, prioritize the drivers of m-customer satisfaction, analyze their needs/wants and transfer them into the right design characteristics of m-stores in order to increase m-customer satisfaction.

### **Kano's Model**

The Kano model is a theory of product development and customer satisfaction which classifies customer preferences (Kano et al., 1984: [wikipedia.org/wiki/Kano\\_model](http://wikipedia.org/wiki/Kano_model)). Professor Noriaki Kano of Tokyo Rika University and several colleagues from Japan developed the Kano Model in order to define service quality in the context of customer needs in the late 1970s. They recommended a two-way model on quality based on customers' perception and experience, and developed a very useful graph for illustrating customer needs (Kano et al., 1984; Berger et al., 1993). Kano Model was also modified by some researchers (Matzler et al., 1996; Tontini, 2000). Kano Model provides a useful tool in order to understand customer needs and expectations, and an effective approach for categorizing these customer needs and expectations into different types, because they are prerequisites to increase customer satisfaction (Shen, et al., 2000). Professor Kano has developed a methodology to identify which customer attributes are must-be, which are one-dimensional, which are attractive and which are indifferent. As seen in common Kano's model, it categorizes products/service attributes into four major groups: Must-be, One-dimensional, Attractive and Indifferent. As seen in Figure 1, Professor Noriaki Kano discovered this model to decide customer satisfaction based on four identifiers. The identifiers are Must-be attributes, One-

dimensional attributes, Attraction attributes and the Indifferent attributes. In the Must-be (M) attributes, customers take them for granted of the fulfilled. But, if the product or service does not have these attributes, the customer becomes very dissatisfied. One-dimensional attributes (O) results in customer satisfaction when fulfilled and dissatisfaction when not fulfilled. For the Attractive (A) attributes, if the company do not offer some features, absence of these features do not cause dissatisfaction because they are not expected by customers and customers are unaware of what they are missing. These identifiers can be used to measure customer satisfaction of product, services as well as software. The identifiers are arranged according to priority in the ascending order as M (Must be) > O (One-dimensional) > A (Attractive) > I (Indifferent). Any companies that want to measure consumer satisfaction of product or service features according to the order of priority above. The features of the product, services and software are categorized under the mentioned identifiers above to measure customer satisfaction and arrive at decisions regarding introduction of new features, extension and/or enhancement of some features and other things. The features in each category is measured by developing a matrix having a functional and its corresponding dysfunctional attribute and based on consumer response, they are mapped in to matrix to get the desired result. With using Kano Model, researchers can identify which customer attributes are must-be, which are one-dimensional and which are attractive. The data needed in classifying customer attributes are obtained through a Kano questionnaire that consists of a pair of questions (one positive and one negative) ([wikipedia.org/wiki/Kano\\_model](https://en.wikipedia.org/wiki/Kano_model): Kano et al., 1984; Chakraborty, 2015). In the Kano Model Analysis, respondents answer two simple research questions for each m-shopping applications features as rate your satisfaction if the m-shopping application has attractive design?, and rate your satisfaction if the m-shopping application do not have attractive design?



**Figure 1.** Kano's Model

Kano's model was applied by different researchers and academicians to many areas like four service-oriented stores such as banks, laundries, restaurants and supermarkets (Schvaneveldt et al., 1991), new product development (Matzler and Hinterhuber, 1998; Sireli et al., 2007; Zhu et al., 2010), to innovative product development (Shen, et al., 2000), an ideal kindergarten development (Sa Moura and Saraiva, 2001), website design (Zhang and Von Dran, 2002), understanding of the delivery of service and engendering of loyalty in an on-line communities (Szmigin and Reppel, 2004), new service creation (Bhattacharyya and Rahman, 2004; Hueiju and Hsien-Tang, 2012; Nilsson-Witell and Fundin, 2005), customer-focused service development for Scandinavian Airlines System (Gustafsson et al., 1999), software development (Lehtola and Kauppinen, 2006) and online ticketing options (Nilsson-Witell and Fundin, 2005) and so on. Therefore, understanding the attributes those customers' wants are beneficial to improvement of product, service, process development as well as m-store design.

### Research Methodology

The purposes of this research are (1) to develop a framework for determining the drivers of m-customer satisfaction, (2) measure m-customer satisfaction level from m-shopping applications, (3) highlight what is needed to increase m-customer satisfaction from m-shopping, (4) examine current intentions about m-shopping in Turkey and (5) give some advices to m-shopping application designers.

### Questionnaire Development, Methodology, Scaling and Sampling

Although m-commerce has entered and penetrated everyday life, customer satisfaction in m-commerce has rarely been studied because of its short history (Choi et al.: 2008: 315). Reviews on the subject reveal the existence a few numbers of index models for m-customer satisfaction with a trend to the specialization of a specific domain in m-commerce. In this study, fourteen essential factors for m-customer satisfaction were categorized into convenience, usability, reciprocity, entertainment, appearance, accessibility, customization, interaction, privacy, security, trust, information quality, mobility and perceived price level by reviewing different articles and self-created. As seen in Table 1, the questions, reflected drivers of m-customer satisfaction, were developed based on these literatures or created by researchers. The questionnaire was prepared in Turkish, and then translated in English.

**Table 1.** Some of The Prior Researches on Drivers of M-Customer Satisfaction

Drivers	Description	Researchers (Reference)
Convenience	Quick shopping	New Created
	Finds the content they need	Taha et al. (2013), Li and Yeh (2010), Wang and Liao (2007)
	Efficient filtration to find the products	New Created
	Voice call to search products	New Created
	Use of mobile payment systems	Wang and Liao (2007)
	Easy to use menu	Taha et al. (2013), Li and Yeh (2010), Kuo et al. (2009), Wang and Liao (2007), Choi et al. (2008), Kim et al. (2005), Cheong and Park (2005), Wu and Wang (2005)
	Comparing of different products' characteristics that customers need	New Created
Usability	Adequate product range	New Created
Reciprocity	Provides possibility to customers for sharing their comments	Taha et al. (2013)
	Provides possibility to customers for sharing their favorite products on social media	Taha et al. (2013)
Entertainment	Provides enjoyable experience	Taha et al. (2013), Cheong and Park (2005)
	Encourages customers to shopping	Taha et al. (2013),
Appearance	Attractive design	Okazaki and Mendez (2013), Li and Yeh (2010),
	Uses fonts properly	Kuo et al. (2009), Wang and Liao (2007), Choi et al. (2008), Kim et al. (2005)
Accessibility	Works errorless	Taha et al. (2013), Kuo et al. (2009), Choi et al. (2008)
Customization	Customized content for individuals	Li and Yeh (2010), Wang and Liao (2007)
Interaction	Video chat opportunity	New Created
	Quick responses to customer inquiries	Taha et al. (2013), Kuo et al. (2009), Wang and Liao (2007), Choi et al. (2008)
	Answers About Inquiries is Useful and Solve Problems	Taha et al. (2013), Choi et al. (2008), Cheong and Park (2005)
Privacy	Warrants to keep my personal information	Taha et al. (2013)
Security	Warrants to keep my credit card	Taha et al. (2013)

	information	
Trust	High transaction trustworthiness	Taha et al. (2013), Li and Yeh (2010)
	Consistency of products' views with the real products	New Created
Information quality	Up to date content	Taha et al. (2013), Kuo et al. (2009), Wang and Liao (2007), Choi et al. (2008), Kim et al. (2005)
Mobility	Provides information navigation to present instant information	Taha et al. (2013)
Perceived Price Level	More appropriate price offers according to traditional shops	Choi et al. (2008)

The primary data was collected through survey methodology. Most questions were presented on nominal and interval scales. In the structured questionnaire, there were sixty-five questions in four sections. In first section, seven questions were asked for the characteristics of respondents and their mobile phones. In the second section, twenty-six pair of questions designed by Kano Model was constructed for ideal mobile shopping application that respondent want to use. According to this, respondents answer two simple research questions for each m-shopping applications features as “rate your satisfaction if the m-shopping application has voice call to search products?”, and “rate your satisfaction if the m-shopping application do not have voice call to search products?” in the questionnaire. In third section, twenty-six questions were asked to determine their current satisfaction levels from mobile shopping applications. In the fourth section, six questions are asked to find out their attitudes towards m-shopping, measure overall m-customer satisfaction level from m-shopping process, and determine their repurchase intention from m-stores.

The survey sample frame is students in the Pamukkale University, in Denizli-Turkey. Thus, the survey is conducted among students who review/purchase products and services and/or find the most affordable products and services from m-shopping applications. A sample size was determined according to the formula of determining the sample size  $[n = N \cdot t^2(p \cdot q) / d^2 (N-1) + t^2(p \cdot q)]$ . P is 0,8, because the proportion of the population, students, having the smart phones is very high. Thus, sample size is determined as 245 among 55.000 students in Pamukkale University. The questionnaire was pre-tested by twenty students in order to construct the validity of the measurement scale. 267 questionnaires were distributed to students in different faculties, vocational and graduate schools. The students volunteered to participate the survey were selected by convenience sampling method, a non-probability sampling method, because of their convenient accessibility and proximity to the researcher. 22 questionnaires were not evaluated because of some missing answers and 245 completely answered questionnaires used for analysis. The reliability of the questionnaire was assessed

by the Cronbach alpha reliability coefficient. Reliability value was calculated as 0,854 and exceeded the suggested value of 0.70. With SPSS 15.0 for Windows, frequency and Kano Model analysis were used to analyze data collected from survey.

### Findings

245 questionnaires were answered in the survey. As seen Table 2, among the 245 respondents, 64,1% were females, 51,8% of the respondents were ages 21-23, 56,7% of the respondents were undergraduate students, 48,6% of the respondent's monthly income was below 500 TL and 42% of their family income was 2000-4000 TL. In terms of the respondents' mobile phone brand name and operating systems, among 245 students, 51,84% of them has Samsung and 13,47% of them has Apple-iPhone, 81,2% has Android and 13,5% of them has Apple iOS.

**Table 2.** Respondents' Profile

<b>Gender</b>	<b>N</b>	<b>%</b>	<b>Education Level</b>	<b>N</b>	<b>%</b>
Female	157	64,1	Graduate Degree	20	8,2
Male	88	35,9	Undergraduate Degree	139	56,7
<b>Total</b>	245	100,0	Associate Degree	86	35,1
<b>Age</b>	<b>N</b>	<b>%</b>	<b>Total</b>	<b>N</b>	<b>%</b>
≤ 18	2	,8	<b>Mobile Phone Brand Name</b>	<b>N</b>	<b>%</b>
19-20	81	33,1	Apple-iPhone	33	13,47
21-23	127	51,8	Samsung	127	51,84
≥ 24	35	14,3	Windows Phone-Nokia Lumia	4	1,63
<b>Total</b>	245	100,0	Sony	11	4,49
<b>Monthly Student Income</b>	<b>N</b>	<b>%</b>	LG	15	6,12
≤ 500 TL	119	48,6	General Mobile	13	5,31
501-1000 TL	89	36,3	HTC	5	2,04
1001-1500 TL	19	7,8	Others .....	37	15,10
≥ 1501 TL	17	6,9	<b>Total</b>	245	100,0
<b>Total</b>	244	99,6	<b>Mobile Phone Operating System</b>	<b>N</b>	<b>%</b>
<b>Monthly Family Income</b>	<b>N</b>	<b>%</b>	Apple iOS	33	13,5
≤ 2000 TL	102	41,6	Android	199	81,2
2001-4000 TL	103	42,0	Microsoft Windows Phone	6	2,4
4001-6000 TL	23	9,4	Blackberry OS	1	,4
≥ 6001 TL	15	6,1	Others .....	6	2,4
<b>Total</b>	243	99,2	<b>Total</b>	245	100,0

As seen in Table 3, according to the descriptive statistics of m-customer satisfaction drivers from m-stores, results showed that a majority of the m-customers stated that m-shopping applications characteristics like quick shopping, comparing of different products' characteristics, efficient filtration to find the products, use of mobile payment systems, easy to use menu, finds the product/service contents they need, adequate product range, provides possibility to customers for sharing their comments, provides possibility to customers for sharing their favorite products on social media, provides enjoyable experience, encourages

customers to shopping, attractive design, uses fonts properly, works errorless, quick responses to customer inquiries, answers about inquiries is useful and solve problems, warrants to keep my personal information, warrants to keep my credit card information, high transaction trustworthiness, consistency of products' views with the real products, up to date content and the price level are very satisfactory.

**Table 3.** Descriptive Statistics of M-Customer Satisfaction Drivers

Drivers	Mobile Shopping Applications Characteristics	Mean	Std. Deviation
Convenience	Quick shopping	3,4694	1,21638
	Finds the product/service contents they need	3,5224	1,23661
	Efficient filtration to find the products	3,5041	1,21624
	Voice call to search products	2,6281	1,36423
	Use of mobile payment systems	3,1025	1,25780
	Easy to use menu	3,4041	1,27876
	Comparing of different products' characteristics	3,2776	1,19275
Usability	Adequate product range	3,3975	1,13753
Reciprocity	Provides possibility to customers for sharing their comments	3,2857	1,34591
	Provides possibility to customers for sharing their favorite products on social media	3,5429	1,21543
Entertainment	Provides enjoyable experience	3,3959	1,19527
	Encourages customers to shopping	3,3333	1,25967
Appearance	Attractive design	3,4407	1,15991
	Uses fonts properly	3,5347	1,20272
Accessibility	Works errorless	3,3320	1,21735
Customization	Customized content for individuals	3,0571	1,29817
Interaction	Video chat opportunity	2,5514	1,39969
	Quick responses to customer inquiries	3,1639	1,20943
	Answers about inquiries is useful and solve problems	3,1557	1,08882
Privacy	Warrants to keep my personal information	3,5861	1,20218
Security	Warrants to keep my credit card information	3,6889	1,23401
Trust	High transaction trustworthiness	3,5720	1,13453
	Consistency of products' views with the real products	3,4074	1,18647
Information quality	Up to date content	3,7131	1,18966
Mobility	Provides information navigation to present instant information	2,9180	1,32460
Perceived Price Level	More appropriate price offers according to traditional shops	3,4549	1,28701

Consequently, in terms of these variables, m-customers' expectations from m-stores and m-shopping are partly met, and m-stores managers are meeting m-customer needs. However, most of the m-customers indicated that m-shopping applications characteristics like voice call to search products, video chat for negotiations, customized content for individual, and information navigation to present instant information were dissatisfactory for m-

customers, and they are not satisfied. Thus, these dissatisfactory characteristics are the areas to be improved by m-stores application designers.

According to the 3 attitude statements towards m-shopping, the respondents have positive attitudes ( $\bar{x}=3,6337$ , std. deviation=1,00129) towards m-shopping with m-shopping applications. In previous studies, m-customers had negative attitudes towards m-shopping in 2007 and 2008 (Barutçu, 2007: Barutçu 2008). Therefore, Turkish m-customers changed their attitudes towards m-shopping. Results also revealed that a large majority of m-customers are satisfied from m-shopping and m-applications ( $\bar{x}=3,7265$ , std. deviation= 1,19541). Moreover, respondents are willing to continue m-shopping from m-stores ( $\bar{x}=3,7469$ , std. deviation=1,21519), and most of the m-customers recommend their friends to use m-shopping ( $\bar{x}=3,5000$ , std. deviation= 1,19842). Consequently, the respondents have repurchase intentions and continue to shop from m-stores with m-shopping applications.

The relationships among m-customer satisfaction drivers were tested using the multiple regression analysis with fourteen factors entered into the regression equation simultaneously. The  $R^2$  was used to assess the model's overall predictive fit. Overall m-customer satisfaction level from m-store shopping was the dependent variable; fourteen factors were entered as independent variables. The average scores of the factors representing each variable were used in the data analysis. Properties of the causal paths, including Beta ( $\beta$ , standardized path coefficients), t-values, and variance explained for each equation are presented in Table 4.

**Table 4.** Multiple Regression Analysis for The Drivers of M-Customer Satisfaction

Dependent	Independent	R	R <sup>2</sup>	F	Beta*	T	Sig.
Overall satisfaction from m-store	Convenience	,677	,459	8,908	-,181	-2,020	,045
	Usability				,411	3,959	,000
	Reciprocity				,007	,108	,914
	Entertainment				,265	3,077	,002
	Appearance				-,101	-,961	,338
	Accessibility				,032	,373	,710
	Customization				,025	,336	,737
	Interaction				-,156	-1,827	,070
	Privacy				,113	,997	,320
	Security				,167	1,460	,147
	Trust				,088	,903	,368
	Information quality				,043	,451	,653
	Mobility				-,149	-1,525	,129
	Perceived Price Level				,255	2,952	,005
Recommendation to other m-customers	Overall satisfaction from m-store	,744	,554	299,995	,744	17,320	,000
Repurchase intention	Overall satisfaction from e-store	,762	,580	336,204	,762	18,336	,000

\* $\beta$ , standardized path coefficients

As can be seen from Table 4, the  $R^2$  value of ,459 indicated that 46% of the variance in m-customer satisfaction was explained by the fourteen independent variables, with a significant F value of 8,908 ( $p < 0,05$ ). Thus, 54% of the variance in m-customer satisfaction was explained by the other independent variables.

The regression analysis results shown in Table 4 indicated that just four, convenience usability, entertainment and perceived price level, drivers of m-customer satisfaction are significant. Convenience, usability, entertainment and perceived price level had the strongest effect on m-customer satisfaction levels towards using with beta weights ( $\beta$ ) of 0,045; 0,000; 0,002 and 0,005 respectively, with all being significant at  $p < 0,05$ . Thus, quick shopping, comparing of different products' characteristics, efficient filtration to find the products, voice call to search products, use of mobile payment systems, easy to use menu, finds the product/service contents they need, adequate product range, provides enjoyable experience, more appropriate price offers are the most important variables to influence buying behaviors from m-stores.

The influence of m-customer satisfaction on m-customers' repurchase intention and recommendation behaviors were also analyzed. M-customer satisfaction was significantly and positively influences repurchase intention using beta weights of 0,762 ( $p < 0.000$ ), and recommendation to other m-customers using beta weights of 0,744 ( $p < 0.000$ ). Therefore, m-customer should be satisfied to repurchase from m-stores and recommend m-shopping other m-customers.

### **Kano Analysis**

As seen in Table 5, quick shopping possibility, make it easy for users to find the content, efficient filtration to find the products, easy to use menu, comparing characteristics of different products' that customers need, adequate product range, the possibility to customers for sharing their comments, attractive design, uses fonts properly, works errorless, customized content for individuals, quick responses to customer inquiries, answers about inquiries is useful and solve problems, warrants to keep my personal information, warrants to keep my credit card information, high transaction trustworthiness, consistency of products' views with the real products, updated content, enables finding location and provides information navigation to present instant information, , more appropriate price offers according to real shops were regarded as one-dimensional showing that m-customers hope m-shopping applications should have these requirements. Thus, these requirements were definitely wanted by the m-customers.

**Table 5.** Kano Model Questionnaire Results

Drivers	Mobile Shopping Applications Characteristics	A*	O*	M*	I*	R*	Q*	Total	C*
Convenience	Quick shopping	26	148	22	47	1	1	245	O
	Finds the product/service contents they need	30	153	26	33	1	2	245	O
	Efficient filtration to find the products	42	119	25	55	4	0	245	O
	Voice call to search products	25	58	6	153	3	0	245	I
	Use of mobile payment systems	35	72	15	111	9	3	245	I
	Easy to use menu	36	140	31	32	4	2	245	O
	Comparing of different products' characteristics	51	101	17	75	1	0	245	O
Usability	Adequate product range	49	135	17	41	3	0	245	O
Reciprocity	Provides possibility to customers for sharing their comments	34	105	19	81	5	1	245	O
	Provides possibility to customers for sharing their favorite products on social media	27	63	19	130	4	2	245	I
Entertainment	Provides enjoyable experience	45	87	10	100	2	1	245	OI
	Encourages customers to shopping	13	56	16	136	23	1	245	I
Appearance	Attractive design	40	124	15	61	2	3	245	O
	Uses fonts properly	31	136	21	53	4	0	245	O
Accessibility	Works errorless	24	172	21	25	3	0	245	O
Customization	Customized content for individuals	41	121	9	70	2	2	245	O
Interaction	Video chat opportunity	40	59	14	127	4	1	245	I
	Quick responses to customer inquiries	25	153	20	43	3	1	245	O
	Answers about inquiries is useful and solve problems	15	168	24	32	4	2	245	O
Privacy	Warrants to keep my personal information	10	207	15	11	2	0	245	O
Security	Warrants to keep my credit card information	6	217	14	4	2	2	245	O
Trust	High transaction trustworthiness	8	197	19	19	2	0	245	O
	Consistency of products' views with the real products	6	208	17	10	3	1	245	O
Information Quality	Up to date content	27	155	18	40	5	0	245	O
Mobility	Provides information navigation to present instant information	55	124	10	53	2	1	245	O
Perceived Price Level	More appropriate price offers according to traditional shops	29	173	8	31	1	3	245	O

\* A: attractive; M: must-be; R: reverse; O: one-dimensional; Q: questionable; I: indifferent; C: Category

The other requirements like voice call to search products, use of mobile payment systems, provides possibility to customers for sharing their favorite products on social media, entertaining activities to encourages customers to shopping, video chat opportunity were regarded as indifferent, showing that m-customers do not care these requirements, and they do not result in either m-customer satisfaction or m-customer dissatisfaction.

**Table 6.** Customer Satisfaction Coefficient for Mobile Shopping Applications

Drivers	Mobile Shopping Applications Characteristics	C*	(A+O)/ (A+O+M+I) Enhanced Satisfaction Coefficients	(O+M)/ (A+O+M+I)*-1 Reduced Satisfaction Coefficients
Convenience	Quick shopping	O	0,716049383	-0,699588477
	Finds the product/service contents they need	O	0,756198347	-0,739669421
	Efficient filtration to find the products	O	0,668049793	-0,597510373
	Voice call to search products	I	0,342975207	-0,26446281
	Use of mobile payment systems	I	0,459227468	-0,373390558
	Easy to use menu	O	0,736401674	-0,715481172
	Comparing of different products' characteristics	O	0,62295082	-0,483606557
Usability	Adequate product range	O	0,760330579	-0,628099174
Reciprocity	Provides possibility to customers for sharing their comments	O	0,581589958	-0,518828452
	Provides possibility to customers for sharing their favorite products on social media	I	0,376569038	-0,343096234
Entertainment	Provides enjoyable experience	I O	0,545454545	-0,400826446
	Encourages customers to shopping	I	0,312217195	-0,325791855
Appearance	Attractive design	O	0,683333333	-0,579166667
	Uses fonts properly	O	0,692946058	-0,651452282
Accessibility	Works errorless	O	0,809917355	-0,797520661
Customization	Customized content for individuals	O	0,67219917	-0,539419087
Interaction	Video chat opportunity	I	0,4125	-0,304166667
	Quick responses to customer inquiries	O	0,738589212	-0,717842324
	Answers about inquiries is useful and solve problems	O	0,765690377	-0,80334728
Privacy	Warrants to keep my personal information	O	0,893004115	-0,913580247
Security	Warrants to keep my credit card information	O	0,925311203	-0,958506224
Trust	High transaction trustworthiness	O	0,843621399	-0,888888889
	Consistency of products' views with the real products	O	0,887966805	-0,933609959
Information Quality	Up to date content	O	0,758333333	-0,720833333
Mobility	Provides information navigation to present instant information	O	0,739669421	-0,553719008
Perceived Price Level	More appropriate price offers according to traditional shops	O	0,838174274	-0,751037344

\* A: attractive; M: must-be; R: reverse; O: one-dimensional; Q: questionable; I: indifferent: C: Category

The customer satisfaction coefficient shows the degree to which m-customer satisfaction level increases if the m-store design requirement is met or the degree to which m-customer satisfaction level decreases, if the m-store design requirement is not met. A positive m-customer satisfaction coefficient ranges in value from zero to one; the closer to one the value is, the higher the influence on m-customer satisfaction. The negative m-customer satisfaction works in the same way. A value of zero implies that this requirement does not

reason dissatisfaction if it is not met. But, a value of negative coefficient, closer to minus one; the higher dissatisfaction can be occurred. In this research, if m-stores have some problems about consistency of products' views with the real products, answers about inquiries is useful and solve problems, warranty about personal information and credit card information and transaction trustworthiness, m-customers have more dissatisfaction and not prefer m-shopping. Therefore, m-retailers should take into account these m-store design requirements.

The customer satisfaction coefficients are not plotted, because, as seen in Table 6, the diagram can be divided into two quadrants according to the four types of requirements. Most of the m-customer satisfaction drivers are located in the area between one-dimensional and indifferent requirements. Therefore, m-shopping application designers should pay more attention to one-dimensional drivers. It is not so necessary for drivers located in the indifferent drivers. According to Matzler et al., (1996), the general rule of must-be > one-dimensional > attractive > indifferent should be applied to set priorities when making product development decisions. The fulfilling of one-dimensional requirements can largely increase m-customer satisfaction and help the m-retailers to differentiate m-shopping applications from those of others to be competitive.

### **Conclusion**

M-customer satisfaction is one of the key elements for realizing m-marketing. M-store marketers need to be aware of the overall m-shopping processes and the various drivers of m-customer satisfaction for long term marketing success. Defining the drivers of m-customer satisfaction can support m-store managers in further changing their strategies and help to improve m-customer satisfaction levels from m-shopping applications.

This study investigates the drivers that possibly influence the m-customer satisfaction of m-stores among m-customers by using 245 questionnaires. According to the findings of the study, Turkish m-customers are satisfied from m-shopping applications and they are willing to continue m-shopping from m-stores. Also, most of them recommend their friends to use m-shopping. Findings of the study indicate convenience, usability, entertainment and perceived price level, and their sub categories are the most important variables that influence buying behaviors from m-stores. These factors can lead to repurchase intention from m-stores, because, totally satisfied m-customers can repurchase products and service repeatedly from m-stores. So m-store designers and managers may need to put emphasis on specifying these factors. They also need to improve four dissatisfactory characteristics; voice call to search

products, video chat for negotiations, customized content for individual and information navigation to present information.

Customers' wants and wishes should be reflected to design characteristics of m-shopping applications in order to increase m-customer satisfaction. Kano Model is used to convert voices of m-customers into design characteristics by identifying which m-store design requirements are more important for increasing m-customer satisfaction and which have less important.

According to Kano Model analysis, there are one-dimensional requirements showing that m-customers hope m-shopping applications should have. The drivers of m-customer satisfaction as convenience (apart from voice call to search products and use of mobile payment systems), usability, reciprocity (apart from sharing their favorite products on social media) appearance, accessibility, customization, interaction (video chat opportunity), privacy, security, trust, mobility, information quality and perceived price level were regarded as one-dimensional, and they are more important than other drivers so as to increase m-customer satisfaction. Thus, they result in m-customer satisfaction, and m-retailers should care them. The some m-store design requirements like video chat opportunity with online sales person, voice call to search products, use of mobile payment systems, provides possibility to customers for sharing their favorite products on social media, entertaining activities to encourages customers to shopping were regarded as indifferent, and m-customers do not care these requirements, and they do not result in either m-customer satisfaction or m-customer dissatisfaction. In terms of negative coefficients, consistency of products' views with the real products, answer about inquiries, solves problems, warranty about personal, credit card information and transaction trustworthiness are the most important variables. If m-customers have some problems about these drivers, m-customers will have more dissatisfaction and not prefer m-shopping. Therefore, m-retailers should care more these m-store design requirements. This study is limited with university students in different degrees and unable to cover all m-phone users in all demographic factors like age and region. In further research, we can study with larger samples to generalize survey results.

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