ANALYSIS OF THE FACTORS AFFECTING THE MOBILE PHONE PURCHASING DECISIONS OF UNIVERSITY STUDENTS IN TURKEY CITY OF ORDU EXAMPLE

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ABSTRACT

The main objective of this study was to determine the factors that affect the mobile phone purchasing behavior of university students between the ages of 18-25. In this regard, factor analysis was applied to the data acquired via face-to-face survey method from 400 students enrolled at the Ordu University Ünye Faculty of Economics and Administrative Sciences. Exploratory factor analysis, reliability analysis and corrective factor analysis were carried out respectively for the construct validity of the factor analysis. Kaiser – Mayer – Olkin and Bartlett criterion was used to test the suitability of the variables in the factor analysis as well as to test the sample size (KMO;0,808;P<0.01). Measurement results put froth that the samples were sufficient for factor analysis. Exploratory factor analysis put forth a structure of 11 items and 4 factors. These factors explain 66,27% of the total variance. The Cronbach Alpha coefficient obtained as a result of the reliability analysis carried out to test the consistency of the exploratory factor analysis was calculated as 0.80 which put forth that the test was consistent. The factors determined via exploratory factor analysis were tested using confirmatory factor analysis in order to test the suitability between the hypothesis and factor structures. The consistency values obtained as a result of confirmatory factor analysis were calculated as 3.036 for CMINDF, 0.070 for RMSEA, 0.94 for GFI and 0.93 for CFI. All factors were determined to be statistically significant and it was concluded as a result of the fit indexes that the model has a good fit. In conclusion, the factors effective in the mobile phone purchasing behavior of students were collected under four headings. These are the properties of the mobile phone, service, brand and price factors.

Keywords: Mobile phone, university students, the purchasing decision, confirmatory factor analysis

JEL Codes: M31, O33, C44

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1. INTRODUCTION

Mobile phones which are important tools of communication in this era of rapid technological development became an indispensable part of people's lives in recent years. Mobile phones were started to be used starting from the mid 1990's in Turkey and people adapted to them in a very short period of time thus rapidly exceeding the average rate of spreading for the whole world. The effect of the young and dynamic structure of the Turkish society should not be overlooked in this rate of spreading (Akın & Divanoğlu, 2009). When Turkey is compared with European Union member countries, it has the youngest population in the whole of Europe (16,6% people between the ages of 15-24). 51,2% of this percentage are males, whereas 48,8% are females (TUİK, 2015).

Today, university students can easily carry out almost all electronic transactions using their mobile phones. In addition, they benefit from services of mobile phones to communicate more easily, with each other, to overcome the obstacles of time and space, to create a wide network of information and to share knowledge rapidly. Mobile phones have become an indispensable part of the lives of especially university students since they meet many demands of modern people and provide means of communication and are preferred by more and more people every day. According to the 2002 Wireless World Forum's Mobil Youth Report; the percentage of having a mobile phone for young people between the ages of 15-19 is 40% in America, 52% in Canada, 65% in Australia, 72% in Spain, 81% in Spain, 87% in Germany and 91% in Sweden (W2F, 2002). The number of mobile phone users in Turkey is over 70 million as of April 2015 and 96,8% of the population actively use mobile phones (TUİK, 2015). When considered from this perspective, it can be stated that the number of mobile phones per individual is very high. Similarly, Turkey is the sixth country in the world with the youngest mobile phone user base (Bayraktar et.al., 2012).

University students in Turkey form the widest user base for mobile phones due to their value judgments, habits, interest in new technologies and behavior as is the case in the rest of the world, while they are also on their way to becoming a significant consumer group (Günay, 2012). New generation information communication technologies can also have drastic impacts on the purchasing decisions of young consumers and may play important roles especially on the living styles of university students (Claffey, 2006; Wilska & Pedrozo, 2007:344; Erkmen & Yüksek, 2008:690).

Today, it is certainly the university students who are affected by technological tools in societies where mass communication tools are dominant. Mobile phone use is very common among the youth in universities as is the case for the remainder of the young generation. The reason for this is that they students see mobile phones as a source of knowledge and interest (Gümüş & Örgev, 2015).

This article can be useful for students and future researchers intending to make further study in the same field of consumer behavior. In the light of this information, it is the current opinion within the technology product market that the target group is primarily university students and that many mobile phone brands strive to impress the university students. It is important in the increasingly competitive market conditions that companies should determine the factors that affect the purchasing decisions of university students so that they can effectively apply their marketing strategies. It is especially important in Turkey which is home to the youngest population in Europe that the attitudes and behaviors affecting the mobile phone

purchasing decisions are put forth especially for university students. The main aim of this study was to determine the factors that are effective in the mobile phone purchasing decisions of university students.

The reminder of the paper organized as follows. The second chapter of this study deals with conceptual issues related to general consumer purchasing behaviour and mobile phone buyers' purchasing behavior. The third chapter reviews the literature about consumer behavior of mobile phone buyers. The data and the method used in this study is described in the fourth chapter and the analysis results are presented in that chapter too. The study ends with a discussion of the findings.

2. CONCEPTUAL FRAMEWORK

2.1. General Consumer Purchasing Behavior

Consumer behavior can be understood as: 'The sum total of a consumer's attitudes, preferences, intentions and decisions regarding the consumer's behavior in the marketplace when purchasing a product or service' (Srinivas, 2015). According to Kotler et al.(2009:224) 'Consumer behavior is the study of how individuals or groups buy, use and dispose of goods, services, ideas or experience to satisfy their needs or wants'. According to Solomon (1996) defines consumer behavior as a process which studies that how individuals or groups are going to purchasing, consume, and dispose of products, services, experiences, ideas over a period of time. It attempts to understand the decision-making processes of the customer, both individually and in groups such as how emotions affect buying behaviour. It studies characteristics of individual consumers such as demographics and behavioural variables in an attempt to understand people's wants. It also tries to assess influences on the consumer from groups such as family, friends, sports, reference groups, and society in general (Lynn R. Kahle, Angeline G. Close, 2011; Elizabeth A. Minton, Lynn R. Khale 2014).

Consumer behavior includes mental activity, emotional and physical that people use during selection, purchase, use and dispose of products and services that satisfy their needs and desires (Kotler, 1999). Consumer behavior, including the selection, purchase and consumption of goods and services that include the elimination of three steps before buying activities, purchasing activities, activities after purchase (Rostami, 2001).

There are four types of consumer purchasing behavior (Sharma, 2014). First, routine programmed behavior-buying; low involvement frequently purchased low cost items; need very little search and decision effort; purchased almost automatically. Examples include soft drinks, snack foods, milk etc. Second, limited decision making-buying product occasionally; when we need to obtain information about the unfamiliar brand in a familiar product category, perhaps. Requires a moderate amount of time for information gathering. Examples include clothes. Third, extensive decision making/complex high involvement, unfamiliar, expensive and/or infrequently bought products. Examples include cars, homes, computers, education. Fourth, impulse buying, no conscious planning.

Consumer behavior is influenced by many factors including social environment of individual (family, reference groups, roles and status, etc.) (Ünlüönen ve Tayfun, 2003:3). Factors affecting consumer behavior can be collected into several general headings such as cultural factors, social factors, psychological factors and personal factors (Durmaz, 2008:36).

2.2. Purchasing Behavior of Mobile Phone Buyers

Recently it has been experiencing an increasing demand in the mobile phone sector. Innovation in the sector plays an important role in increasing the demand. Whereas mobile phones were initially designed only for establishing communication, today they can serve many different aspects. Today, consumers make their purchasing decisions based on many factors such as camera quality, video, recording, mp3, radio, maps, internet access speed and video calls. 'Different consumers have different characteristics in their life that also influences their buying behavior. Price, quality, brand, country of origin, marketing, sales, word of mouth etc could be several factors that a consumer may think before buying a mobil phone'(Nagarkoti, 2009).

According to Kotler et al. (2008), cultural, social, personal and psychological factors are the main characteristics that influence the consumer behavior. 'Social factors such as family, groups, roles and status) and personal factors (such as age, occupation, lifestyle, personality and self concept) are those characteristics that could manipulate the buyer behavior in making final decision' (Nagarkoti, 2009).

According to Uddin et al. (2014), factors affectıng customers' buyıng decısıons of mobıle phone is physical attributes. Some other factors are pricing, charging and operating facilities, size and weight, friends' and colleagues' recommendations, neighbors' recommendations and advertising. Seva et al. (2007) found strong relationship between attributes of mobile phone and prepurchase affect. For example, slimmer phones increase feeling of contentment and encouragement, larger display increase feelings of amazement and encouragement.

In a survey in Konya research, young people in the purchase price and brand mobile phone and change it was concluded that the importance of the elements (Gülmez, 2005: 40). According to Nagarkoti (2009), 'When purchasing mobile phones to provide a strong and reliable brand image of the mobile phone is the design and shape of the aesthetic, the best of the Guarantee period and conditions, to be sold on known and trusted sales point, in that it provides additional functions, besides the standard features, students can be seen as important elements".

3. EMPIRICAL LITERATURE REVIEW

Efforts for acquiring a mobile phone encompass efforts for the product properties, brand, price, social factors and advertisement (Chow et.al., 2012; Suki, 2013). A study carried out in Aydın put forth the factors affecting the mobile phone purchasing behavior of students as the properties of the product, its brand, its price, social factors and advertisement efforts (Çakır &Demir, 2014). Consumers display a wide range of purchasing behaviors under the effect of many factors when making their purchasing decisions. A continuously and rapidly changing mobile phone market affects the preferences of young people with the effect of advancing technology. For example, mobile phone design has a special impact on teenagers (Taylor & Harper 2003). Another study carried out grouped consumers (610 people) according to their reasons of preference. Among these, the ratio of consumers who made their preference according to product properties and the image was 34,5%, the ratio of consumers who made their preference according to quality was 24,2% and the ratio of consumers who made their preference according to price was 41,3% (Sarıkaya & Sütütemiz, 2008).

A study carried out on 350 students at the Aksaray University put forth that the percentage of university students who made their mobile phone preference according to price was 46,35%, the percentage of university students who made their mobile phone preference according

to functional properties was 44,31% and the percentage of university students who made their mobile phone preference according to brand and brand trust was 40,96% (Akın & Divanoğlu, 2009). It was determined in a study carried out in India that the mobile phone users in the 18-30 age group were less price sensitive in comparison with other groups. It was determined that the consumers in this group valued 'physical appearance', 'brand', 'value adding properties' and 'basic technical properties' more in comparison with other groups (Singh & Goyal, 2009). Whereas it was determined in a study carried out on 256 people in France that the factors affecting mobile phone purchasing were price, quality level, ease of use and functionality respectively (Lee, 1999).

It was determined in a study carried out to determine the mobile phone user habits that the 15-24 age groups use their mobile phones for purposes other than making calls and that entertainment features such as game, radio as well as other features such as voice recording, camera, WAP, GPRS were effective in the mobile phone purchasing decision of men (Anonymous, 2008). Today, it is observed that instant messaging has come to the forefront as one of the most rapidly developed applications in history. University students handle their needs such as exam dates, academic information, homework, emergencies and notifications via messaging (Mayer, 2002:38). In addition, mobile messaging has spread even further with the development of Multimedia Messaging (MMS) that was developed after SMS (Kim & Mims & Holmes, 2006:85).

It was determined in a study carried out on university students in Kyrgyzstan that university students consumers use mobile phones primarily for the internet, mp3 and radio, taking photos and making connections between wireless devices (Polat and Maksudunov, 2015). It was put forth that university students in Kırklareli examined factors such as device memory, battery life and camera resolution when purchasing mobile phones (Eti İçli & Oğuzhan, 2008). It was determined in the study examining the factors that are effective on the mobile phone demand of Dumlupınar University students that strength, warranty conditions and brand are more important than flourish (Uzgören et.al., 2012). It was determined in a study carried out regarding the preferences of those who will purchase mobile phones that those who have university education act according to rational motives thus putting forth that dimensions and functionality are important factors (Çoroğlu, 1998:7).

4. MATERIALS AND METHOD

The students in Ordu University Ünye Faculty of Economics and Administrative Sciences in 2015 and the data from the surveys conducted are the main material of the research. There are 2580 students in the faculty in total. The most commonly used in practice and put in place the necessary values in the sampling formula shown below, were studied to calculate the sample size will provide the research data (Akbulut & Yıldız, 1999).The sample size was determined using below Equation 1.

$$n = NPQZ^2 / [(N-1)d^2 + PQZ^2] \tag{1}$$

Where 'n' was sample size; 'N' was the number of students in target population (2580); 'P' was the probability of mobile phone users in students (50% or hypothetical); 'Q' was the probability of mobile phone non users in students (1-P); Z was the Z value (e.g. 1.96 for 95% confidence level); and d was tolerance (0.05). Finally sample size was found to be 335 according

to the population. Nevertheless, sample size were completed to 400 in case of any invalid questionnaire. The students were selected by using random sampling method.

Survey questions were asked to these students in order to determine the factors that affect their mobile phone purchasing decisions. 35 survey based variables were used in this study. 15 of these were demographic indicators with the remaining 20 questions making up the statements in the form of a 5-point Likert scale. To find the factors influencing the purchase decision of a mobile phone, 20 statements were used and the respondents were asked to rate on a five point rating Likert scale. These statements were ordered from negative to positive as follows; 'I completely agree (1), I do not agree (2), I am indecisive (3), I agree (4), I completely agree (5)'. Care was provided during data coding to whether the expressions were negative or positive. Overlooking this might lead to interpreting significant factors as insignificant or vice versa.

In this work, related literature has been reviewed for the preparation of the material used to measure the attitudes and behavior of mobile phone purchase. It is intended to obtain as many as possible factors by using as less as possible data to make statements suitable for the purposes of the research. Five point Likert scale is prefered to achieve this aim. Factor analysis is used to reduce the dimensions. (Anastasia and Urbina, 1997; Tavşancıl, 2010; Tezbaşaran, 2004). The scale includes 20 questions about features of the mobile phone, service, brand, price, and preferrenced mobile phone to measure the factors that influence purchasing decisions of consumers participated in this research. İn the preparation of the questionnaire were used the studys of Türkay's (2011), Chow et.al.,'s (2012), Suki's (2013), Cakir and Demir's (2014), Taylor and Harper's (2003 , Sarikaya and Sütütemiz's, (2008), Akin and Divanoğlu's (2009), Singh and Goyal's (2009), Polat and Maksudunov's (2015) Eti İcli and Oğuzhan' (2008) and Uzgören et.al.,'s (2012).

The factors that are effective in making mobile phone purchasing decisions were tried to be put forth via exploratory factor analysis, reliability analysis and confirmatory factor analysis in this study. SPSS 20 statistical package software was used to create and analyze the descriptive statistics.

The basic assumptions of exploratory factor analysis can be listed as follows. In factor analysis, it is assumed that all variables and all their linear combinations are normally distributed. The relationship has to be linear since the multivariate normality assumption points to the linearity of the relationship between the variable pairs. Data have to be measured at a scale with the lowest interval. The variables have to be related not very high or very low but at a certain level (0,25 -0,90). It is assumed that the common factors are unrelated with each other and residual factors (Özdamar, 2002; Büyüköztürk, 2002; Tatlıdil, 1996).

KMO is a measure to quantify the degree of intercorrelations among the observed variables (Kaiser, 1974). KMO was produced by SPSS to assess the factorability of the data. The KMO statistic varies between 0 and 1. A value of 0 indicates that the sum of partial correlations is large relative to the sum of correlations, which means that there is diffusion in the pattern of correlations (thus, factor analysis is likely to be inappropriate). A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors (Kaiser 1974). A KMO value lower than 0,50 It shows that the data is not suitable for the factor analysis. If the KMO value is between 0,5-0,7 it is moderate and if it is between 0,7-0,8 it is good with values of 0,8 and above meaning excellent (Büyüköztürk, 2007). Also, the Bartlett's Test of Sphericity relates to the significance of the study and thereby shows

the validity and suitability of the responses collected to the problem being addressed through the study. For factor analysis to be recommended suitable, P-value of the test Bartlett's Test of Sphericity must be less than 0.05. Null hypothesis shows that there isn't statistically significant difference in the observed and theoretical covariance structure matrices. If the null hypothesis is rejected at the 5% level, PCA can perform efficiently on the dataset.

The aim of exploratory factor analysis is to identify the common factors and explain their relationship to the observed data, and the factor solution is derived from the patterns of association in the observations (Lattin, Carroll, & Green, 2002). It is possible to reduce many factors to several sets or dimensions via factor analysis. Each of these dimensions or sets is known as a factor (Borg and Gall, 1989; Balcı, 2009). Variable reduction as well as the lack of relation between the newly generated variable and the factors should be provided in a good factoring meaning that the acquired factors should be statistically significant (Büyüköztürk, 2009). In other words, this is a reduction and dependency structure removal method (Korkmaz, 2000; Tatlıdil, 1996). In conclusion, factor analysis has two main goals (Özdamar, 2002). These are; reducing the number of variables and to put forth some new structures by benefiting from the relationships between the variables (Erdoğan, 2003; Netemeyer, Bearden, and Sharma, 2003).

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is calculated in order to test the internal consistency of each factor group identified. The reliability of the study has been tested with Cronbach's alpha coefficient. The Cronbach's alpha coefficient is the most common method to measure internal consistency. Alpha coefficient gets a value between 0 and 1 (Özgüven, 1994; Tavşanlı, 2002).

Finally, confirmatory factor analysis (CFA) was carried out to complete the study. The objective of confirmatory factor analysis is to test whether the data fit a hypothesized measurement model. This hypothesized model is based on theory or previous analytic research. In order to test consistent with theory there are fit indices for confirmatory factor analysis

These are goodness of fit index (GFI), comparative fit index (CFI), normed fit index (NFI) and the root mean square error of approximation (RMSEA). GFI, CFI and NFI values should be 0,90 and above in order to understand whether the model fits the theory or not. İn addition for RMSEA, a value of 0,10 and below indicates a good fit (Byrne, 1998; Kline, 1998; Hu, L., & Bentler, P. M. 1999; Baumgartner, H., & Hombur, C. 1996; Bentler, P. M., 1990).

5. STUDY RESULTS

When the factors affecting mobile phone purchasing decisions were examined, the results related with the students were examined in two groups. These are results related with socio-economic properties and exploratory statistics related with the expressions used in factor analysis. Results related with socio-economic properties (gender, age, type of education, department, total income level of families) can be seen in Table 1.

Table 1. Socio-Economic Characteristics Related Results

Item		Frequency	Percent (%)
Gender			
Male		296	74,00
Female		104	26,00
	Total	400	100,00
Age			
18-19		26	6,50
20-21		140	35,00
22-23		196	49,00
24-25		38	9,50
	Total	400	100,00
Type of Education			
The First Education		200	50,00
Second Education		200	50,00
	Total	400	100,00
Department			
Business Administration		125	31,25
Economics		125	31,25
Labor Economics and Industrial Relations		100	25,00
Public Administration		50	12,50
	Total	400	100,00
Monthly income of the family			
< 1000 TL		53	13,3
1001 -2 000 TL		144	36,0
2001 - 3000 TL		129	32,3
3001 - 4000 TL		41	10,3
4001 TL and over		33	8,3
	Total	400	100,00

74% of the students who participated in the study were male and 26% were female. The age interval of students using mobile phones was 18-25. 6,5% of the students were in the 18-19 age interval, whereas 35% were in the 20-21 age interval, 49% were in the 22-23 age interval and 9,5% were in the 24-25 age interval. Whereas the number of participant students who were enrolled at the business administration and economics departments were the same with a percentage of 31,25%. 25% of the remainder students were enrolled at the Labor Economics and Industrial Relations Department, whereas 12% were enrolled at the Public Administration Department.

When the monthly income of families were examined which is a significant factor related with the study of the purchasing behavior of consumers; it was observed that the monthly income of 13,3% was 1000 TL and below, the monthly income of 36% was between 1001-2000 TL, the monthly income of 32,3% was between 2001-3000 TL, the monthly income of 10,3% was between 3001-4000 TL and that the monthly income of 8,3% was 4001 and above. As a result, it is observed that 81,4% of the families have a monthly income of 3000 TL and below. This indicates that majority of the consumers who were subject to the survey at the time had income

levels far below the poverty limit of 3.600 TL/month (Türk-İş, 2014) announced by TÜRK-İŞ (Table 1).

Table 2. Descriptive Statistics of Expression Used in Factor Analysis

	N	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
The quality of mobile phone	400	1	5	4,200	0,870	-1,409	2,571
Design aesthetic	400	1	5	4,123	0,891	-1,438	2,735
Ease of use	400	1	5	3,883	0,988	-0,953	0,756
Extra features	400	1	5	4,395	0,852	-1,857	4,103
Customer service	400	1	5	3,963	0,948	-0,937	0,636
Widespread service network	400	1	5	4,190	0,849	-1,312	2,157
Warranty period and conditions	400	1	5	4,375	0,846	-1,698	3,455
The brand loyalty	400	1	5	3,845	0,999	-1,260	1,614
Strong and reliable image	400	1	5	4,168	0,849	-1,264	2,143
Cheap price	400	1	5	3,483	1,028	-0,530	-0,189
Alternative payment facilities	400	1	5	3,860	0,994	-1,240	1,485

Descriptive statistics were used to evaluate appropriateness of the 11 (eliminated 9 item was not given in the variable table) item measurement by calculating the means of all responses and standard deviations (SD) per item. Table 2 shows the descriptive statistics including means, standard deviations, skewness, kurtosis, minimums, and maximums. The minimum and maximum values were the same in all eleven variables 1 and 5 respectively.

5.1. Sample Adequacy Test

The first stage of factor analysis is to test the suitability of the sample. Thus the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of spherecity were carried out (Hair et al. 2006).

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,808
Bartlett's Test of Sphericity	Approx. Chi-Square	1138,563
	Df	55
	Sig.	,000

The results show that the Kaiser-Meyer-Olkin measure of sampling adequacy is 0.808 and Bartlett's test of sphericity is 1138,563 (p<0.01) indicating the adequacy of the sample for factor analysis (Table 3).

5.2. Exploratory Factor Analysis and Reliability Analysis

A correlation matrix was generated during the second stage of the factor analysis. The correlation matrix is a matrix that indicates the relationship between the variables included in the factor analysis. Small correlations in the residual matrix indicate the fit between the observed and generated matrices for a good factor analysis (Hovardaoglu, 2000; Kline, 1994; Tabachnick and

Fidell, 2001). It was observed in this study that the relationship between the factors was lower than 0.30 which is sufficient (P< 0.01).

Multicollinearity and singularity are problems with a correlation matrix that occur when variables are too highly correlated (Tabachnick and Fidell, 2007). Multicollinearity or singularity may be in existence, if the determinant of the correlation matrix is less than 0.00001. One simple heuristic is that the determinant of the correlation matrix should be greater than 0.00001 (Field, 2009). The determinant of the correlation matrix is equal to 0.056 which is more than 0.00001. This implies that there is a no problem of multicollinearity.

In the third stage, a suitable factor generation method was selected to put forth the factor solution based on the correlation matrix following the decision that the factor analysis is suitable for the data set and the initial solution was generated. All 20 items were entered into the PCA and primary factors were extracted. In the next step items showing communality score less than 0.50 were eliminated and a factor analysis of the remaining items was done.

A further test is carried out to examine the Anti-Image correlation matrix that contains Measures of Sampling Adequacy (MSA) for each variable along the diagonal and partial correlation on the off-diagonals. All diagonal elements should be greater than 0.5 at a bare minimum if the sample is adequate for a given pair of variables. If any pair of variables has a value less than this, dropping one of them from the analysis is considered. The off diagonal elements should all be very small (close to zero) in a good model (Field, 2009). Residuals were computed between observed and reproduced correlations. Results show that there were 27 (49,0%) nonredundant residuals with absolute values greater than 0.05.

The most frequently used method for determining the number of factors in exploratory factor analysis is the method known as Kaiser-Guttman rule in which factors with eigenvalues greater than 1 are considered. Hence, Kaiser-Guttman rule was used in order to determine the number of factors to be interpreted (Fabrigar, et al. 1999). Exploratory factor analysis results can be seen in Table 4 below. Based on Principal Component Analysis (PCA) with varimax rotation four factor solution with eigen values greater than 1.0 was obtained as the best fit model for the sample. Applying SPSS, the principal component analysis (PCA) was carried out to explore the underlying factors associated with 11 items.

Figure 1. Scree plot for 4 factors and 11 item
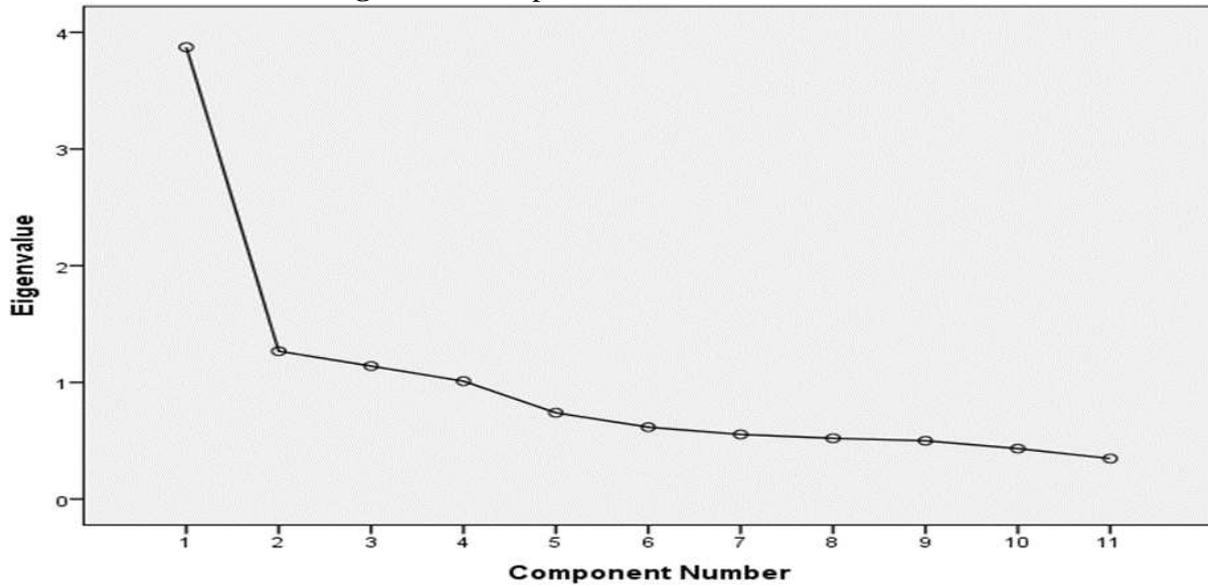
İn this study was determined 4 factors and 11 item (Figure 1).   Eventually, this 11-item structure explained 66, 27% of the variance in the pattern of relationships among the items.The order of the factors is in accordance with the highest eigen values and amount of variance explained by each one of them (Table 4). These four factors were named as Features, Services, Brand and Price. The percentages explained by each factor were 21,302% (Features), 17,740% (Services), 13,903% (Brand) and 13,320% (price) respectively.

Table 4. Factor Analysis Results

Factors and variable	Factor loading	Eigen values	Variance Explained %	Cronbach's Alpha
F1: Features/Properties				
The quality of the mobile phone	,830	35,203	21,302	,769
Design aesthetic	,716			
Ease of use	,689			
Extra features	,617			
F2: Services				
Customer service	,780	11,519	17,744	,800
Widespread service network	,763			
Warranty period and conditions	,600			
F3: Brand				
The brand loyalty	,790	10,362	13,903	,797
Strong and reliable image	,870			
F4: Price				
Cheap price	,845	9,185	13,320	,803
Alternative payment facilities	,760			
Factors loadings 0.40 or greater were selected in the stage of rotated component matrixa				

An item analysis was conducted in order to test the reliability of each element as well as an entire instrument of the purchasing behavior. Also Cronbach's alpha coefficients are calculated in order to test the internal consistency of the sample for factor analysis. If the Cronbach's α value is higher than 0.80, the internal consistency is excellent and if it is at least higher than 0.7, the internal consistency will be acceptable (Blunch, 2008; Tavşanlı, 2002). All four elements in this study had perfect reliabilities. Cronbach's alpha of features, services, brand and price were .769, .800, .797 and .803 respectively (see Table 4).

5.3. Confirmatory Factor Analysis

Finally, Confirmatory Factor Analysis (CFA) was employed to complete the study. The results of the CFA carried out to understand the fit of the model to the database along with the fit index values can be seen in Table 5.

Table 5. Fit İndexes For Confirmatory Factor Analysis

X^2	DF	P	CMİNDF	NFI	CFI	GFI	RMSEA
112,34	37	<0,01	3,04	,902	,931	,937	,071
The indexes fit for confirmatory factor analysis: ,90<NFI<,95; CMİNDF<5; ,90<CFI< ,97; ,90<GFI< ,95; ,05<RMSEA< ,10. (Byrne, 1998; Kline, 1998).							

The CFA results presented that the hypothesized model of the 11-item structure of the instruments was verified as an excellent fit for the data ($\chi 2$ (112,34, N = 400) P<0.01, NFI= .902, CFI = .931, GFI = .937, RMSEA = .071). As shown in Table 4, the completely standardized loadings ranged from 0,60 to 0,87. Finally, the results of the CFA confirmed that the model fit is perfect between the proposed model and the observed data. In addition to path diagram of confirmatory factor analysis can be seen below in Figure 2.

Figure 2. CFA Path Diagram
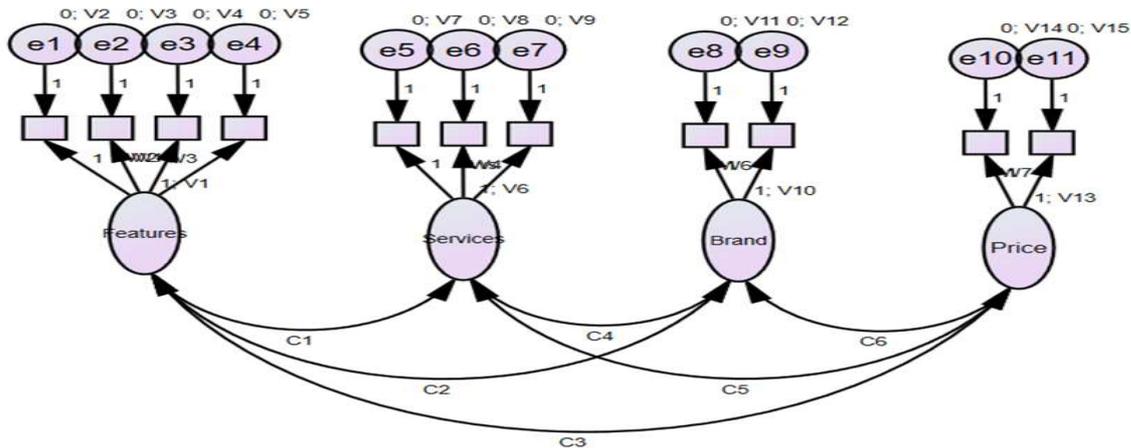
6. CONCLUSION

There are many factors affecting the mobile phone purchasing decisions and behavior of consumers. It is a very important step for consumption decision to determine the attitudes. Hence, a 5-point Likert type scale was used to measure the attitudes of university students in the age interval of 18-25 for putting the factors affecting their mobile phone purchasing decisions. In accordance with this main objective, students enrolled at the Ordu University Ünye Faculty of Economics and Administrative Sciences were examined as the sample group.

Face-to-face surveys were conducted with university student's mobile phone users in this study. Factor analyses were applied in order to measure the attitudes related with the data acquired from the surveys. Factor analysis, reliability analysis and confirmatory factor analysis were applied respectively in order to test the construct validity of the factor analysis. Kaiser – Mayer – Olkin (KMO) and Bartlett criterion were used to test the suitability of the variables in the factor analysis as well as to test the sample size. Results indicated that the samples were sufficient for factor analysis. The fact that the Cronbach Alpha coefficient acquired as a result of the reliability analysis carried out to test the reliability of the exploratory factor analysis was calculated as 0.80, indicated that the test was consistent.

It was determined as a result of exploratory factor analysis that a structure of 11 items and 4 factors explains 66,27% of the total variance. Confirmatory factor analysis was applied in order to test the suitability of the factor structures after the factors were determined. The values acquired as a result of confirmatory factor analysis CMİNDF, RMSEA and fit index values, GFI, CFI and NFİ indicate that the model has a good fit.

Finally, the factors that are effective on the mobile phone purchasing behavior of university students were reduced to four groups. These factors were the features of the mobile phone, service, brand and price factors. In addition, university students take into account the variables that make up these factors when making their purchasing decisions. The variables of factors effective in the mobile phone purchasing decision of university students in Turkey can be listed in order of load weight as follows. The strong and reliable image of the mobile phone to be purchased, low sales price, mobile phone quality and brand loyalty are among the primary items. These are followed by significant items such as customer services, wide service network, alternative payment options, design and aesthetics, ease of use, technical attributes of the mobile phone such as camera memory, video along with warranty conditions.

In terms of marketing, identifying demands, expectation and demographic characteristics of the audience is greatly make easier work of the producers and sellers. In this study conducted by describing socio demographic characteristics of university students, it is founded that the most important factor in selection a mobile phone is having a strong and reliable image. Strong and reliable image as one of the latent variables can be actually interpreted as a sign that consumers are affected by their friends and neighbors, and ads in the selection of a mobile phone. Another factor in the selection of a mobile phone is low price. Considered the average income of 81.4% of families is 3,000 TL, it is better to understand that consumers prefer cheaper mobile phones. As a result, when these features are taken into consideration, it might be said that companies mostly need to focus on image development and advertising work. In addition, the features of the mobile

phone, the service, the brand and the price are the factors important for increasing sales and market share of the company.

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