

## **AN EMPIRICAL STUDY ON CONSUMERS' PERCEPTION TOWARDS MOBILE BRANDS IN SAUDI ARABIA**

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***Abstract:** The downfall of Nokia and Blackberry; the popularity of iPhone and the success of Samsung mobiles have interesting implications towards business strategy. The mobile sector works in a continuously changing environment.. Function of phone like calling, emailing, GPS, playing music, scanning were almost same and satisfying in all brands. The respondents felt the difference in terms of camera, internet surfing, after sale service and resale value. Bulk of the respondents said that they are satisfied with their phones still they want to change. If they are satisfied and still want to change their phones, this points out that there is no problem in the current brand but they want to benefit or use the advances in the new products. Finally factor analysis was conducted to identify the factors responsible for mobile phone preference.*

***Key words:** Consumer behavior, Mobile phones; Service; Resale; Saudi Arabia*

Since the introduction of first cellular device by Motorola Corporation in 1973, this sector has seen a lot of changes in last 45 years. The downfall of Nokia and Blackberry; the popularity of iPhone and the success of Samsung mobiles have very interesting implications towards business strategy. The mobile sector works in a continuously changing environment. Some of the important characteristics of this environment are changing technologies like operating systems, internet usage, camera functions, office functions, increasing competition and ever-increasing demand of customers. In the present market condition almost all digital and technological product in a particular segment are similar to each other. Configuration of almost all products is almost same in a particular price group. It is becoming difficult for product manufacturer to attract and maintain customers based on features and specifications. Now, marketers are finding it difficult to succeed using traditional Segmentation, Targeting and Position (STP) approach. Environment is so dynamic that companies are finding it difficult to develop and sustain its Unique Selling Proposition (USP). Moreover, today a customer is looking beyond product. This insight into the present levels of satisfaction and, in

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particular, the key elements of satisfaction are valuable to those in this sector as it allows them to concentrate and reinforce the crucial aspects which would lead on one hand to a higher level of satisfaction amongst customers; while, on the other hand, for the companies higher profitability and the ability to sustain its brand image in this era of cut throat competition.

Customer satisfaction is the most important factor leading to profitability in mobile manufacturing companies. The challenge for mobile companies is to provide varied and unique features, lower costs, faster processor speed, while improving the quality of their service, and increase customer satisfaction. In today's highly dynamic business, environment features and specifications of products can be critical to a mobile's success. In addition, now a day is the hardware, software and service has become very important factors towards the phone's success.

Literature on studying customers' perception regarding mobiles in Saudi Arabia is missing. This present study aims to fill up this gap by studying the elements of customer's satisfaction with the mobile sector. The aim of this study is to give insights that would help the companies to assess and re-structure its current approach to sustain and prosper. This assumes huge significance in light of the current downfall of Nokia and Blackberry and immense increase in the popularity of Samsung.

Moreover, this study will aim at the young population who studies in Colleges. Martensen (2007) studied the satisfaction level and brand loyalty among teens. This study suggests that satisfaction level among teen is much higher compared to adults. However, loyalty among teen is less. There is very weak relationship between satisfaction and loyalty. Sahay and Sharma (2010), in their study found that younger age group is passionate about their brands. They love their brands, while older age group has a strong brand relationship with their brands. Various factors because of which their relationship develops with brands are financial constraints, maturity etc. Children and adolescents will have a far more dominant role in the decision making process. And According to Yang (et al., 2015) it is possible to use personal traits in predicting a user's brand preferences.

## REVIEW OF LITERATURE

Hacklin, Battistini and Krogh (2013) viewed that in the ever-changing markets and technology, companies are changing their strategies and approaches, so as to capture value. Many sectors such as energy, pharma, health care and nutrition products, are undergoing very fast changes. One sector where changes are very drastic is the telecommunication sector. The findings of a study by Kimiloglu (*et al.*, 2010) clearly show that purchasing a mobile phone is a high involvement item. There are various considerations in renewing or purchasing of this product. As products become advance more importance will be given to engineering, physical, functional and technological perspective. Similarly as these products are becoming indispensable part of human life hence, factors like image, trendiness and attractiveness plays a big role in purchase decisions.

Many studies have been conducted all over the world on customer satisfaction, service industry and mobile industry, previous studies like Chi, (*et al.*, 2009) says that brand identity and brand recall are directly related and will affect the purchase intention of the customer. In another study Sethi and Chandel (2009), have drawn an inference that while buying a smart phone brand is the most important attribute, next most important is price followed by purpose of buying. According to study conducted by Riyath and Musthafa, (2014), price of the mobile plays the most vital role in brand choice. Nair (2013) in their study suggest that price is not at all an obstacle for customers of various age groups, rather other features like physical appearance are more important. Singla gives almost similar results and Bansal (2011) in a study also suggests that price is not the main reason for choosing a mobile. Another study by Singla and Bansal (2011) show that consumers give preference not only to price of cell phone but also to the availability and look as second priority and then to others. For Nair (2013) price is no more an obstacle for the various age groups, as we find that it is rated as secondary to other features, such as physical appearance. Riyath and Musthafa (2014) state that price of the mobile plays the most vital role in brand choice. The results also show that the perceived usefulness, perceived ease of use, and perceived enjoyment have a significant positive relationship with customer satisfaction of the mobile telecommunication service in the region.

According to Ariff (*et al.*, 2012) most important factor affecting satisfaction of customers of the mobile service is customer perceived emotional value. Yang (*et al.*, 2015) analyzed the possible use personal traits in predicting user brand preference. Mahjoub (*et al.*, 2015) have tried to find relation between maintenance and loyalty. According to their study companies who intend to enhance their profit by creating loyalty must consider maintenance. According to their study brand, equity has a dominant effect on customer satisfaction. Dhital (2012), in her study has concluded that brand attributes effect the buying decision of people of all age groups and educational background. Sethi and Chandel (2015) found that customers established higher loyalty toward a brands when they are more satisfied. Dib and Msallam (2015) found that the dominant factor affecting customer satisfaction of the mobile phone services was customers' perceived emotional value. Shah (2013) conducted a study on customer satisfaction of Samsung mobile. The study shows that there is a positive relationship between the satisfaction level and brand name. A study by Khan (*et al.*, 2016), also shows similar results.

Study conducted by Karjaluo (*et al.* 2005) states that choice of mobile phone is dependent on seven basic factors, they are: price, innovative services, multimedia, design, brand name and basic properties, looks, and reliability. Another study conducted by Gyawalifound that consumers give a lot of importance performance, features, outlook, and brand name rather than price. Androulidakis (2011) found that users could be grouped in well-defined categories according to the brand of the mobile phone they are using when the customer purchases a smart phone, brand is the most important attribute used as a selection variable while purchasing, followed

by price and purpose respectively. For Chun (*et al.*, 2013) consumers' satisfaction was affected by factors such as needs fulfillment, performance improvement, ease of use, security/privacy, and influence of the peer. As per the study conducted by Chun (*et al.*, 2013), consumers satisfaction is affected by many factors like needs fulfillment, performance improvement, privacy, influence of the peer, ease of use. Study conducted by N. Khan (*et al.*, 2014), suggests, innovation plays a very important role in satisfying a customer.

## METHODOLOGY AND DATA ANALYSIS

This study targeted the students of Prince Sattan bin Abdulaziz University in the Kingdom of Saudi Arabia. This choice of sample very much suited the study as the brand preference of adolescents is to be studied as they have a higher satisfaction level and lower loyalty (Martensen, 2007) and are passionate about their brands (Sahay and Sharma, 2010). Further a modified version of stratified sampling is done where a sample of students from all the eight semesters is taken. In total of 234 questionnaires are filled in by the sample respondents out of which only 154 samples were selected. The remaining questionnaires were not analyzed owing to incomplete entries. Besides the personal detail of the respondents, there were two question related to satisfaction from their present brand of mobile and wishing to change their phones in future apart from ten yes/no type of questions related to features of mobile brands like operating system, camera, games, service centers, GPS, internet surfing scanning, calling function, music and resale value. Further, there were forty questions on 5 point Likert scale with statements related to mobile brand preferences.

The questionnaire first attempts to test the difference between users of IOS, Android and other operating systems. The other operating system includes Symbian, Microsoft and Blackberry. The difference between these operating systems is seen in terms of respondents who want to change their phone in future and those who don't. ANOVA is to be used to test for difference between respondents desire to change their phones in future. The researcher assumes that there would be a difference between the study satisfactions with different users of mobile phones. Hence a set of hypotheses are used to test for difference with respect to camera, games, internet surfing, social networking and resale value. Here we would be using t-test to check for significance. For both ANOVA and t-test, SPSS (16) is used and the significance is tested at five percent level of significance. A p-value of less than 0.05 leads to the rejection of the null hypothesis and vice versa.

### Hypothesis 1

*Null Hypothesis: There is no significant difference between users of IOS, android and others in terms of wishing to change their phones in future.*

*Alternate Hypothesis: There is a significant difference between users of IOS, android and others in terms of wishing to change their phones in future*

As the p value is less than 0.05, hence the alternate hypothesis is accepted which indicates that there is a difference between the users of different operating systems (Appendix 1). An inference can be drawn that for a significant number of respondents operating system is an important aspect while choosing a mobile phone. Only because of operating system, some of the most popular brands like Nokia and Blackberry failed, because their operating systems were not able to compete with Android and IOS. The highest score was for Apple users (1.33) followed by Samsung users (1.17) and lastly by other users (1.12). Score near to 1 indicated more of the willingness to change their phone in future and score near to 2 indicated their non-willingness to change their phone in future. In fact only iPhone users had a score greater than the mean score (1.21), indicating a higher non-willingness to change their phones in future.

### **Hypothesis 2**

*Null Hypothesis: There is no significant difference between users of IOS, android and satisfaction with their present brand of mobile.*

*Alternate Hypothesis: There is a significant difference between users of IOS, android and satisfaction with their present brand of mobile.*

As the p value is less than 0.05, hence the alternate hypothesis is accepted which indicates that there is a difference between the users of different operating systems (Appendix 2). The highest score was for other users (1.33) followed by Samsung user (1.17) and lastly by other users (1.14). Score near to 1 indicated satisfaction towards the present mobile while a score closer to 2 indicated dissatisfaction to the present mobile. In fact only users of other brands (Blackberry, Nokia, LG etc.) had a core more than the mean value (1.22). An inference can be drawn that for a significant number of respondents operating system is an important aspect while choosing a mobile phone. The fate of Nokia and Blackberry has changed because of their outdated operating systems only.

### **Hypothesis 3**

*There is no significant difference between wishing to change the phone in future and satisfaction with the present brand of mobile.*

*There is a significant difference between wishing to change the phone in future and satisfaction with the present brand of mobile.*

For the hypothesis that p value is again less than 0.05, indicating that there is a significant difference between those who want to change their phone in future and those who don't want to change their phones in future in terms of satisfaction from their phones (Appendix 3). This infers that a person may go for a change in future even if he is satisfied with his present brand of mobile. This very much indicates to the success which companies achieve by updating their phones like iPhone 4 to iPhone 4s to iPhone 5 to iPhone 6 and now finally iPhone 7. Similarly for Samsung users galaxy 5 to galaxy 6 and likewise.

For getting, an insight into the points of difference between different phones types using ten hypotheses. Among the ten hypotheses, only four of them are found to be significant. Based on Students t-test five alternate hypotheses were found to be significant (Appendix 4). These significant alternate hypotheses are:

**Alternate Hypothesis 4:** *There is a significant difference between those who want to change their phone in future and those who do not for those whose phone also doubles up as camera*

From this hypothesis, it can be concluded that for a significant number of respondents camera is a very important feature while choosing the next phone (Appendix 4). Sharp Corporation of Japan launched the first mobile with camera in the year 2000. Since the launch of this mobile, there has been a huge demand among customer for mobiles with camera. Mobiles with camera have changed in terms of quality and features at a very fast pace. What started as a simple VGA phones, soon sprint launched first mega pixel camera. This new technology became hugely popular among customers. All mobile manufacturers started producing mobile phones with cameras and most of them started differentiated themselves based on camera quality and features. What started as 1.3 mega pixel, soon there was 3.2 mega pixels the 5, the 8 and so on. In 2000 Nokia launched a phone Pureview 808 which had 42 mega pixel cameras. Some companies like HTC and LG diversified further and went on to create 3D cameras, which were not that successful.

Then in 2003 companies started launching mobiles with dual cameras (Back and Front). A new work to English vocabulary was added because of this front camera 'Selfie'. Now a day's front camera is called selfie camera. Many new features have added to mobile cameras like zoom facility, flashlight. Now some latest trends are front camera flash, dual rear camera. From the above developments, it becomes quite clear how important camera is for a mobile. There are many customers whose final decision of buying mobile depends on camera quality.

**Alternate Hypothesis 5:** *There is a significant difference between those who want to change their phone in future and those who do not in terms of using phone for playing games*

In line with the results of previous hypothesis, here also a sizable number of respondents are giving importance to gaming capabilities of the mobile, as an important feature while choosing a mobile. Gaming is another very important distinguished factor for mobiles. What started as simple game of Tetris in 1994 was soon followed by a very popular game by Nokia called snake. Since then all mobile companies have launched hundreds of variants of games. Mobile gaming took a new dimension with the advent of touch screen smart phones and faster internet capabilities. Today there are many games available at android and iTunes. Games like Pokémon Go have become a new rage among youngsters. Looking at the tremendous demand for gaming mobile phone manufactures are targeting these game lovers with mobile phones having faster processors, larger RAMS and better internet capabilities. Android App store has more game compared to Apple play store, even the quantity of free games is more on

Androids play store. A big customer segment chooses a mobile because of its gaming capabilities.

**Alternate Hypothesis 6:** *There is a significant difference between those who want to change their phone in future and those who don't in terms of using phone for availability of service centers.*

A large number of respondents make a choice of their mobile phone based on how well the phone connects with availability of service centers. Since mobile is technologically advanced, sophisticated and costly device customers give a lot of importance to after sales service. Most of the customer prefers to buy mobile phones whose service center is available in their city. Many good mobiles have failed not because of their quality or features but because of their poor after sales service. One of the reasons of success of iPhone and Samsung is the availability of after sales service centers.

**Alternate Hypothesis 7:** *There is a significant difference between those who want to change their phone in future and those who don't in terms of use phone for internet surfing and viewing videos.*

For a significant number of respondents internet surfing speed and ease is an important factor while choosing their next phone. This implies that those who give importance to internet will choose phones which have large screen. Resolution of the display should be good, RAM should be good. Mobile must have latest internet capabilities like 4g LTE, Wifi etc. First Internet enabled phone was created by AT&T in 1997, then NTT DOCOMO, commercially internet has gained importance after the launch of touch screen smart phone with 3G, WIFI and now 4G capabilities. Many customers are choosing their mobile only on its internet capabilities.

**Alternate Hypothesis 8:** *There is a significant difference between those who want to change their phone in future and those who do not in terms of being concerned with the resale value of the phone (Appendix 8).*

For a sizable number of respondents resale value is the most important factor while buying a new phone. Mobile technology is changing very fast; most of the customers are always looking of upgrading their mobiles. Since people are changing their sets very fast, they also want good money for their old hand sets. Most customers prefer to go for popular brands and models so that it will be easier for them to sell them at a good cost.

In the final section of the questionnaire an exhaustive list of forty statements related to mobile phones are used to understand the factors responsible for mobile phone preference. These statements are based on Likert scale and factor analysis would be used to reduce these forty statements into a few factors. The target respondents are university students. A 5-point interval Likert scale to examine how strongly respondents agree (5) or disagree (1) with statements to measure variables in the hypotheses of this research will be used. Attempts will be made to identify the important factors involved in the customers' satisfaction. For this purpose, the technique of factor

analysis will be used. Obviously there would be many factors, which will be affecting individuals purchase decision. The raw data will be summarized into smaller sets of linear composites that would preserve most of the information in the original data set. The data will be subjected to principal component analysis, a method categorized under the broad area of factor analysis. The variables will be reduced to few variables through Varimax rotation with Kaiser Normalization. Regarding the pre-analysis testing for the suitability of the entire sample for factor analysis Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of Sphericity will be used. This will indicate that the sample was suitable for factor analytic procedures.

Finally, factor analysis extracts twelve factors. Kaiser-Meyer-Olkin Measure of Sampling Adequacy was fair at 0.42 and the Bartlett's Test of Sphericity was significant (Appendix 5). Factor 1 can be attributed to Internet features in the mobiles. Factor 2 represented by price. Factor 3 represented by connectivity features. Factor 4 represented by advertisement. Factor 5 relates to predetermined decision-making. Factor 6 relates to the hardware capacity/operating system. Factor 7 is brand image. Factor 8 is related to ease features. Factor 9 is related to sim. Factor 10 related to camera. Factor 11 is related recommendation and Factor 12 with design of the mobile.

## CONCLUSION

Three important features identified by this study are camera, games and internet surfing capabilities. One of the important things, which emerged from this study, is that service came as an important factor in choosing mobile phone brands. Most of the product manufacturers today are differentiating on the basis of services, especially after sale services, a product success depends more on its services than its features and specifications. Today manufacturers are giving a lot of importance to the service, recent success of companies like Samsung has been more because of their service rather than product. Another important factor that was identified was related to the resale value of the mobile brands. It is evident that resale value is an important factor while choosing mobile brands. This can be related to the question where in the respondents were asked to how often they change phones. Majority of the respondents said that they are satisfied with their phones still they want to change. If they are satisfied and still want to change their phones, this points out that there is no problem in the current brand but they want to benefit or use the advances in the new products. This can be used for conducting further studies. This may lead to some interesting observations on consumer behavior and service in context of countries like Saudi Arabia.

Further studies could be conducted to understand the effect of technological changes, how these fast technological changes are, effect the choice of mobiles. Study can also be conducted to study the effect of brand loyalty. Are customers of this sector are brand loyal?.

Function of phone like calling, emailing, GPS, playing music, scanning were almost satisfying in all brands. The respondents felt the difference in terms of camera, internet

surfing and resale value. Meaning thereby, in these aspects improvements can be made by brands to outshine others. More over the factors which led to purchase of a particular brand that identified by this study can be divided into internal and external features. Internal features can be identified with internet, connectivity, operating system, ease features, SIM size, number of SIM, memory slot, camera and mobile design while features like price, advertisement, predetermined decision-making, brand image and recommendation can be identified as external factors. So in order to make a particular more saleable both these internal and external factors need to be improved upon continuously.

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**APPENDICES**

**Appendix 1**

Descriptives

VAR00002								
	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error</i>	<i>95% Confidence Interval for Mean</i>		<i>Minimum</i>	<i>Maximum</i>
					<i>Lower Bound</i>	<i>Upper Bound</i>		
1	54	1.33	0.48	0.06	1.20	1.46	1	2
2	46	1.17	0.38	0.06	1.06	1.29	1	2
3	54	1.13	0.34	0.05	1.04	1.22	1	2
Total	154	1.21	0.41	0.03	1.15	1.28	1	2

ANOVA

VAR00002						
	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>	
Between Groups	1.23	2	0.61	3.75	0.03	
Within Groups	24.70	151	0.16			
Total	25.93	153				

**Appendix 2**

Descriptives

VAR00003								
	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error</i>	<i>95% Confidence Interval for Mean</i>		<i>Minimum</i>	<i>Maximum</i>
					<i>Lower Bound</i>	<i>Upper Bound</i>		
1	54	1.15	0.36	0.05	1.05	1.25	1	2
2	46	1.17	0.38	0.06	1.06	1.29	1	2
3	54	1.33	0.48	0.06	1.20	1.46	1	2
Total	154	1.22	0.42	0.03	1.15	1.29	1	2

ANOVA

VAR00003						
	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>	
Between Groups	1.07	2	0.53	3.18	0.04	
Within Groups	25.42	151	0.17			
Total	26.49	153				

## Appendix 3

## Group Statistics

	VAR00003	N	Mean	Std. Deviation	Std. Error Mean
VAR00002	1	120	1.28	0.45	0.04
	2	34	1.00	0.00	0

## Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differ- ence	Std. Error Differ- ence	95% Confidence Interval of the Difference Lower		Upper
VAR00002	Equal variances assumed	132.16	0.00	3.57	152.00	0.00	0.28	0.08	0.12	0.43	
	Equal variances not assumed			6.72	119.00	0.00	0.28	0.04	0.19	0.36	

## Appendix 4

## Group Statistics

	VAR00012	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	1	120	1.18	0.38	0.03
	2	34	1.00	0.00	0.00
VAR00002	1	120	1.43	0.50	0.05
	2	34	1.21	0.41	0.07
VAR00003	1	120	1.22	0.41	0.04
	2	34	1.32	0.47	0.08
VAR00004	1	120	1.06	0.24	0.02
	2	34	1.09	0.29	0.05
VAR00005	1	120	1.26	0.44	0.04
	2	34	1.35	0.49	0.08
VAR00006	1	120	1.50	0.50	0.05
	2	34	1.21	0.41	0.07
VAR00007	1	120	1.36	0.48	0.04
	2	34	1.35	0.49	0.08
VAR00008	1	120	1.11	0.31	0.03
	2	34	1.18	0.39	0.07
AR00009	1	120	1.05	0.22	0.02
	2	34	1.15	0.36	0.06
VAR00010	1	120	1.43	0.50	0.05
	2	34	1.44	0.50	0.09

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
VAR00001	Equal variances assumed	45.87	0.00	2.67	152.00	0.01	0.18	0.07	0.05	0.30
	Equal variances not assumed			5.02	119.00	0.00	0.18	0.03	0.11	0.24
VAR00002	Equal variances assumed	40.79	0.00	2.35	152.00	0.02	0.22	0.09	0.04	0.40
	Equal variances not assumed			2.62	63.02	0.01	0.22	0.08	0.05	0.39
VAR00003	Equal variances assumed	5.21	0.02	-1.29	152.00	0.20	-0.11	0.08	-0.27	0.06
	Equal variances not assumed			-1.19	48.10	0.24	-0.11	0.09	-0.29	0.07
VAR00004	Equal variances assumed	1.50	0.22	-0.62	152.00	0.54	-0.03	0.05	-0.12	0.07
	Equal variances not assumed			-0.56	46.22	0.58	-0.03	0.05	-0.14	0.08
VAR00005	Equal variances assumed	3.61	0.06	-1.08	152.00	0.28	-0.09	0.09	-0.27	0.08
	Equal variances not assumed			-1.02	49.40	0.31	-0.09	0.09	-0.28	0.09
VAR00006	Equal variances assumed	62.67	0.00	3.13	152.00	0.00	0.29	0.09	0.11	0.48
	Equal variances not assumed			3.50	63.74	0.00	0.29	0.08	0.13	0.46

contd. appendix

VAR00007	Equal variances assumed	0.01	0.91	0.06	152.00	0.95	0.01	0.09	-0.18	0.19
	Equal variances not assumed			0.06	52.86	0.96	0.01	0.09	-0.18	0.19
VAR00008	Equal variances assumed	4.17	0.04	-1.06	152.00	0.29	-0.07	0.06	-0.19	0.06
	Equal variances not assumed			-0.94	45.85	0.35	-0.07	0.07	-0.21	0.08
VAR00009	Equal variances assumed	14.51	0.00	-1.95	152.00	0.05	-0.10	0.05	-0.20	0.00
	Equal variances not assumed			-1.50	40.17	0.14	-0.10	0.06	-0.23	0.03
VAR00010	Equal variances assumed	0.10	0.76	-0.17	152.00	0.87	-0.02	0.10	-0.21	0.18
	Equal variances not assumed			-0.17	52.53	0.87	-0.02	0.10	-0.21	0.18

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### Appendix 5

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#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.42
Bartlett's Test of Sphericity	Approx. Chi-Square	5618.70
	df	780.00
	Sig.	0.00

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#### Communalities

	<i>Initial</i>	<i>Extraction</i>
VAR00001	1	0.81
VAR00002	1	0.83
VAR00003	1	0.85
VAR00004	1	0.79
VAR00005	1	0.68
VAR00006	1	0.65
VAR00007	1	0.70
VAR00008	1	0.81
VAR00009	1	0.88

*contd. appendix*

VAR00010	1	0.80
VAR00011	1	0.74
VAR00012	1	0.78
VAR00013	1	0.74
VAR00014	1	0.75
VAR00015	1	0.79
VAR00016	1	0.87
VAR00017	1	0.66
VAR00018	1	0.76
VAR00019	1	0.81
VAR00020	1	0.80
VAR00021	1	0.86
VAR00022	1	0.81
VAR00023	1	0.81
VAR00024	1	0.79
VAR00025	1	0.72
VAR00026	1	0.88
VAR00027	1	0.87
VAR00028	1	0.79
VAR00029	1	0.89
VAR00030	1	0.77
VAR00031	1	0.65
VAR00032	1	0.77
VAR00033	1	0.71
VAR00034	1	0.75
VAR00035	1	0.78
VAR00036	1	0.76
VAR00037	1	0.75
VAR00038	1	0.84
VAR00039	1	0.69
VAR00040	1	0.82

Extraction Method: Principal Component Analysis.

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.13	17.84	17.84	7.13	17.84	17.84
2	5.77	14.43	32.27	5.77	14.43	32.27
3	3.16	7.9	40.17	3.16	7.9	40.17
4	2.7	6.74	46.91	2.7	6.74	46.91
5	2.18	5.45	52.36	2.18	5.45	52.36

contd. appendix

6	2.09	5.22	57.59	2.09	5.22	57.59
7	1.71	4.28	61.87	1.71	4.28	61.87
8	1.57	3.92	65.79	1.57	3.92	65.79
9	1.46	3.66	69.45	1.46	3.66	69.45
10	1.3	3.26	72.71	1.3	3.26	72.71
11	1.13	2.81	75.53	1.13	2.81	75.53
12	1.02	2.55	78.08	1.02	2.55	78.08
13	0.94	2.36	80.44			
14	0.88	2.2	82.65			
15	0.8	2	84.65			
16	0.74	1.85	86.5			
17	0.64	1.6	88.09			
18	0.56	1.39	89.48			
19	0.52	1.3	90.78			
20	0.48	1.19	91.96			
21	0.42	1.06	93.02			
22	0.39	0.97	93.99			
23	0.35	0.87	94.86			
24	0.32	0.8	95.67			
25	0.29	0.72	96.39			
26	0.24	0.59	96.99			
27	0.2	0.49	97.48			
28	0.19	0.47	97.95			
29	0.17	0.44	98.39			
30	0.14	0.34	98.73			
31	0.11	0.27	98.99			
32	0.1	0.25	99.24			
33	0.09	0.23	99.48			
34	0.06	0.15	99.62			
35	0.05	0.12	99.75			
36	0.04	0.09	99.84			
37	0.02	0.06	99.9			
38	0.02	0.04	99.94			
39	0.01	0.03	99.97			
40	0.01	0.03	100			

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Extraction Method: Principal Component Analysis.

<i>Rotated Component Matrixa</i>												
	<i>Component</i>											
	1	2	3	4	5	6	7	8	9	10	11	12
VAR00001	0.05	0.09	0.15	0.01	0.18	0.02	0.70	0.09	0.02	0.04	-0.18	0.46
VAR00002	-0.18	0.05	0.15	0.25	-0.23	0.06	0.50	-0.37	-0.23	0.22	-0.28	-0.32
VAR00003	-0.04	-0.10	0.03	0.12	0.01	0.11	0.87	0.05	-0.04	0.21	-0.01	-0.11
VAR00004	0.24	-0.17	0.17	0.38	-0.04	0.03	-0.26	0.48	0.08	0.33	-0.24	0.26
VAR00005	0.09	0.22	-0.05	0.23	0.71	0.19	0.05	0.10	0.00	0.06	-0.10	0.00
VAR00006	0.49	-0.04	0.16	0.47	0.26	-0.22	0.13	-0.01	0.07	-0.13	0.12	0.00
VAR00007	0.13	0.18	-0.22	-0.11	0.28	0.61	0.27	0.05	0.04	-0.26	0.04	-0.06
VAR00008	0.18	0.84	0.04	0.02	0.18	0.04	-0.03	0.04	0.13	-0.06	0.02	-0.10
VAR00009	0.10	0.88	0.07	-0.16	0.14	0.11	0.13	0.06	0.12	-0.11	0.04	0.01
VAR00010	0.04	-0.06	-0.05	0.22	-0.04	-0.11	0.05	0.09	0.02	0.08	0.08	0.84
VAR00011	-0.21	0.66	-0.15	0.29	-0.21	-0.07	-0.06	-0.13	-0.15	0.22	-0.11	0.02
VAR00012	0.14	-0.11	-0.07	0.74	0.00	0.17	0.06	0.10	0.17	0.02	-0.03	0.36
VAR00013	0.62	0.00	0.07	0.24	-0.13	0.17	0.03	0.16	-0.15	0.09	-0.14	0.42
VAR00014	0.41	0.09	-0.09	0.34	-0.07	0.25	0.22	0.57	-0.02	0.07	-0.03	0.04
VAR00015	0.14	0.20	-0.04	0.38	0.13	-0.07	0.55	0.37	-0.14	-0.23	0.01	0.24
VAR00016	0.44	0.06	-0.03	0.02	-0.09	0.09	-0.19	0.45	0.25	0.26	0.52	-0.12
VAR00017	-0.10	0.07	-0.05	0.28	0.16	0.16	0.18	0.12	0.05	0.06	-0.67	-0.10
VAR00018	-0.06	0.21	0.03	0.07	0.17	0.26	-0.15	0.16	0.75	-0.02	-0.01	0.06
VAR00019	0.19	-0.23	0.18	0.05	0.07	-0.17	0.11	0.21	0.58	-0.23	0.44	-0.15
VAR00020	-0.11	-0.04	0.06	0.09	0.07	0.84	-0.05	-0.04	-0.03	0.10	-0.17	-0.11
VAR00021	0.34	0.25	0.28	0.13	-0.16	-0.28	0.03	0.02	0.37	-0.16	0.56	-0.07
VAR00022	-0.17	0.06	0.25	0.10	0.30	0.76	0.09	0.03	0.07	0.05	-0.10	0.08
VAR00023	-0.04	0.12	0.16	0.48	0.26	0.20	0.04	0.19	-0.50	0.19	-0.08	0.33
VAR00024	0.51	0.23	0.19	0.24	-0.16	-0.30	0.04	-0.15	0.32	0.01	0.37	0.05
VAR00025	-0.03	0.04	0.16	0.10	0.65	0.23	0.24	-0.15	0.09	0.26	0.24	-0.01
VAR00026	0.41	0.35	0.24	-0.05	-0.12	-0.21	-0.02	-0.22	0.57	-0.13	-0.10	0.27
VAR00027	-0.18	0.08	0.03	0.12	0.51	0.02	0.16	0.02	-0.20	0.67	-0.20	0.04
VAR00028	0.54	0.50	0.32	-0.03	0.02	-0.18	0.02	0.26	0.13	0.00	0.13	0.00
VAR00029	0.03	-0.07	0.04	0.04	0.12	0.02	0.15	0.09	-0.07	0.91	0.00	0.08
VAR00030	0.78	0.14	0.11	-0.02	0.13	-0.12	0.00	0.19	-0.11	-0.01	0.24	0.06
VAR00031	0.12	-0.04	0.07	-0.15	0.68	0.12	-0.08	0.06	0.06	0.09	-0.33	-0.06
VAR00032	0.82	-0.01	0.05	0.05	0.13	-0.02	-0.06	0.17	0.20	-0.06	0.04	-0.05
VAR00033	0.11	0.05	-0.01	0.62	0.17	-0.03	0.39	0.12	-0.06	0.28	-0.18	0.02
VAR00034	0.21	0.06	0.21	0.09	0.08	-0.10	0.15	0.77	0.07	0.04	-0.01	0.09
VAR00035	0.12	-0.11	0.77	-0.11	0.16	0.00	0.09	0.20	0.17	0.19	0.12	0.10
VAR00036	0.31	0.37	0.42	0.10	-0.04	-0.09	-0.28	0.21	-0.11	-0.17	0.41	0.01
VAR00037	0.14	-0.18	0.34	0.40	0.48	0.38	-0.01	-0.16	-0.09	-0.05	0.05	0.13
VAR00038	0.06	0.52	0.48	-0.15	-0.09	0.10	-0.09	0.50	-0.05	0.09	0.03	0.15
VAR00039	-0.09	0.32	0.49	0.42	0.05	0.05	0.16	0.17	-0.30	-0.09	-0.01	-0.08
VAR00040	0.17	0.10	0.86	0.07	0.04	0.12	0.04	-0.03	0.06	-0.03	0.02	-0.10

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 29 iterations.