



**THE ROLE OF CUSTOMER SATISFACTION AND LOYALTY
THOUGH STUDENT PERCEPTION ON MOBILE BROADBAND BASED ON
CONSUMER SATISFACTION INDEX MODEL (CSI)**

Rd. Okky Satria

School of Economic Pasundan, Bandung, Indonesia
JL. Turangga No. 37 – 41, Bandung, Indonesia. 40263
Email: okky@stiepas.ac.id¹

Boy Suzanto

School of Economic Pasundan, Bandung, Indonesia
JL. Turangga No. 37 – 41, Bandung, Indonesia. 40263
Email: boy@stiepas.ac.id

Iwan Sidharta

School of Economic Pasundan, Bandung, Indonesia
JL. Turangga No. 37 – 41, Bandung, Indonesia. 40263
Corresponding Email: i_sidh@stiepas.ac.id³
Tel 622-7303249, 622-7302537, 622-7302491, Fax 622-7309128

ABSTRACT

The success of a company in today's high level of competition requires the company to gain trust of consumers. Customer satisfaction and loyalty are crucial in order for a company to gain competitive advantages. Similarly, in the attempt to gain competitive advantages,



providers of mobile broadband services should determine the extent of consumer perceptions of the services they provide. Thus, measuring the perception of satisfaction and loyalty, especially the use of mobile broadband services is the goal of this study. Exploratory research method was used towards respondents, which involved 148 students. Data were analyzed using Structural Equation Modeling (SEM), component-based Partial Least Squares (PLS). The results show that the variables of complaint, customer expectation, loyalty, perceived quality, customer satisfaction, and perceived value are significantly influential in shaping customer satisfaction and loyalty upon the use of mobile broadband services.

Keywords: *customer satisfaction, loyalty, customer mobile broadband.*

JEL Classification: *M300, M39*

INTRODUCTION

The development of online business in Indonesia is very rapid; it indicates the use of information technology has begun to be acknowledged. Easy access to the internet either via wifi or gadget allows people to access information about a product or service. In addition, vigorous promotion by e-commerce company in offering goods or services could make users more convenient. The development of information technology to access the internet shows an increase from year to year. Increased traffic leads to increased internet access through mobile broadband by users; this is due to the ease of access that can be done anywhere in any condition as long as there is availability of Internet network by providers of mobile broadband services. In Indonesia, there is a significant increase in the use of mobile broadband. Based on the results of a survey conducted by APJII (2015) on the user's profile information via mobile broadband technology, as much as 85% of respondents with the age range of 18-25 years use a cellular phone by 60%.

Advances in technology lead to shifting patterns of communication among consumers (Suzanto & Sidharta, 2015). Consumers will look for information about the product they want to buy by comparing it with similar products using information technology tools. Indonesia's Internet users



have reached 82 million people, or about 30 % of the total population in Indonesia. Based on data from MCIT, the value of e-commerce transactions in 2013 reach Rp130 trillion. Bolton Consulting Group (BCG) presented data that middle class in Indonesia in 2013 are as many as 74 million people and it is predicted by 2020, further BCG predicts there will be an increase of about 141 million people or 54 % of the total population in Indonesia (Sidharta & Sidh, 2014).

Changes in consumer behavior in mobile broadband services are also challenges for broadband providers that need to identify the needs and demands of consumers. Data released by the MCIT show that the value of online shopping transactions on e-commerce in 2013 reach Rp 130 trillion, in which 82 million Internet users and most of them use mobile broadband. Therefore, it can be understood that customer satisfaction with a mobile broadband service provider will determine the sustainability of the provider.

Based on the aforementioned phenomena, the formulation of the problem is as follows; the influence of the image, perceived expectation, and perceived quality become exogenous variables, while the perceived value, customer satisfaction, and customer loyalty become endogenous variables on a mobile broadband service provider. The objective is to determine the effect of the image, perceived expectation and perceived quality as exogenous variables to the perceived value, customer satisfaction, and customer loyalty as endogenous variables on a mobile broadband service provider.

LITERATURE REVIEW

Customer Satisfaction and Loyalty

The main factor in determining customer satisfaction is the customer's perception toward the quality of goods or services; when the services are in accordance with what is expected by consumers, they can be considered good, and vice versa. A service by Parasuraman et al. (1998) is defined as an economic activity that produces time, place, form or use of psychological aspects. Meanwhile, Oliver (1997) suggests that satisfaction is an enjoyable experience for the



products that people consume. Furthermore, it can be said that customer satisfaction can be measured through consumption of the product or service experience, whether the perception of customer acceptance is already in line with customer expectations or not (Fornell et al. , 1996).

Loyalty can be interpreted as a long-term commitment to re-purchase (Anderson and Fornell, 2000). A satisfied customer will indicate the possibility for re-purchasing the same product. In fact, quality service to customers is not always able to satisfy customers. There are many service failures that lead to dissatisfaction. After consuming certain products and services, customers will feel satisfied or dissatisfied, depending on the quality of service received from the company that customers will evaluate later (Tung, 2013). Customer satisfaction can provide several benefits, including creating a harmonious relationship between the company and its customers as a good foundation for the repurchase, the creation of customer loyalty to a particular product and form a recommendation by word of mouth that is profitable for the company (Parasuraman et al, 1998).

Customer Satisfaction Index

There are several models of index measurement for customer satisfaction based on customer satisfaction index; one of them is Swedish Customer Satisfaction Barometer (SCSB) model proposed by Fornell (1992). Moreover, in 1994, there were the American Customer Satisfaction Index (ACSI), European Customer Satisfaction Index (ECSI), and SERVQUAL model known as the Norwegian Customer Satisfaction Barometer (NCSB) by Johnson et al (2001), that is, by entering the SERVQUAL measurement. There are differences between the American customer satisfaction index and European Customer Satisfaction Index (ECSI), where ECSI models do not incorporate complaint and image that have a positive effect on customers expectation, satisfaction, and loyalty (Grigoroudis and Siskos, 2003).

We use the customer satisfaction index to measure the level of customer satisfaction and loyalty of a mobile broadband service provider, especially students who are the largest mobile



broadband users by student in Indonesia. The model of customer satisfaction index that is used is illustrated below:

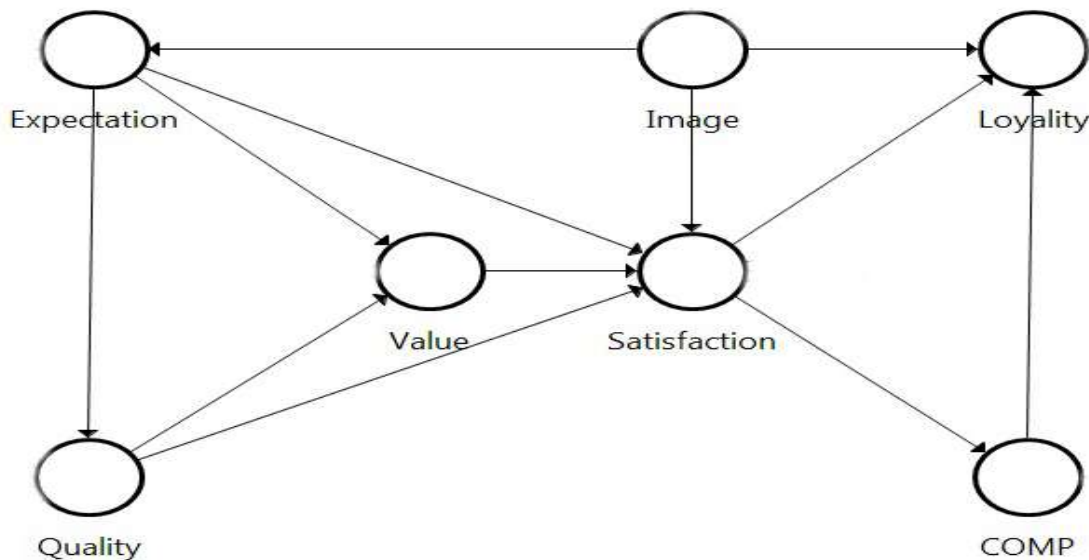


Figure 1- Model Customer Satisfaction Index

Hypotheses

Based on the exploration of theory and previous research, the hypotheses in this study are as follows:

1. There is a significant influence over the complaint to loyalty and it is significantly affected also by customer satisfaction in the form of customer satisfaction and customer loyalty for the use of mobile broadband services.
2. There is a significant influence between customer expectation and the image in the form of customer satisfaction and customer loyalty for the use of mobile broadband services.
3. There is a significant influence between loyalty to the image, customer satisfaction, and complaint in the form of customer satisfaction and consumer loyalty for the use of mobile broadband services.



4. There is a significant effect between the perceived quality, perceived value, and customer satisfaction that is influenced by customer expectation in the form of customer satisfaction and customer loyalty for the use of mobile broadband services.
5. There is a significant influence between customer satisfaction and the image, customer expectation, perceived value, perceived quality, its impact on loyalty, and the complaint in the form of customer satisfaction and customer loyalty for the use of mobile broadband services.
6. There is a significant influence between the value of the customer expectation and perceived quality and the impact on customer satisfaction in the form of customer satisfaction and customer loyalty for the use of mobile broadband services.

RESEARCH METHOD

This study used an exploratory method, which is to create a picture of the situation or phenomenon intended to causal-predictive analysis. Due to the fairly large population and limited availability of time and cost, the study did sampling of the population. In addition, the survey method could also be evaluated as a comparison of the results to draw conclusions. The sampling technique chosen was accidental sampling of students at School of Economic Pasundan, Bandung, Indonesia. Determination of the sample was based on several criteria, namely; 1) Active students, 2) Active users of mobile broadband services, and; 3) Willing to fill questionnaires distributed by the researcher. Based on primary data, the population were 2,763 students, with 180 samples. Of the 180 questionnaires distributed, only 155 questionnaires were returned and there were 7 questionnaires which were incomplete, so that the number of samples was 148. A method of data collection was done by distributing questionnaires directly to the respondents who fit the predetermined sample and observation criteria made directly on the object of research.



ANALYSIS DATA

This analysis is used to describe data that include the results of measurement on the questionnaire to the respondents regarding perceived customer satisfaction and loyalty over the use of mobile broadband services by students. As for the data processing, it was conducted with the help of software of SmartPLS 3.0 and Microsoft Excel for Windows 2007. Operational variables in this study include exogenous variables, namely Image and Perceived service quality, and endogenous variables, namely Customer satisfaction, Perceived value, Customer loyalty, and Complaint. The research instrument is Likert scale technique (Summated Rating Scale) in which each statement which has been written can be agreed upon as a statement that is favorable or a statement that is unfavorable, and the subject responds to each item statement by using the level (intensity), from always to never, and further scores are summed. In Likert scale, there are two types of statements, the statements which are positive and statements which are negative; the response of 'strongly agree' to a positive statement obtains a value of 5 (five) and the response of 'strongly disagree' to a positive statement obtains a value of 1 (one). In contrast to the statements (items) that are negative, the answer 'strongly agree' obtains a value of 1 (one) and the answer of 'strongly disagree' obtains a value of 5 (five).

A data analysis technique using Structural Equation Modeling (SEM) of component-based Partial Least Squares (PLS) was implemented to develop a theory for prediction purposes in respect of the measurement of customer satisfaction and customer loyalty over the use of mobile broadband services by students. Measurement model of Partial Least Squares (PLS) is based on measurement predictions which are non-parametric in nature, through convergent validity, i.e. where the size of the reflective individual is correlated with the value of loading $> 0,50$ (Chin, 1988) and the value of discriminant validity is obtained by comparing the value of the square root of average variance extracted (AVE) of each construct and the correlation between the constructs in the model; if the value of AVE is greater than the value of the correlation between the constructed models of discriminant, it is said to have good validity (Fornell & Larcker, 1981). Meanwhile, the structural models were evaluated using R-squares for the dependent



construct, Stone-Geiser Q-square test for predictive relevance test, and the t test and the significance of the parameters for structural lines. Data analysis was performed by entering all the data of respondents and data of the convergent validity, discriminant validity and significance tests. The measurement results show all the indicators meet construct loading values > 0.5. Hence, the 24 indicators are eligible for testing models of Partial Least Squares (PLS).

The results of calculations based on loading per convergent validity indicators are as follows:

Tabel 1 - *Convergent validity*

	Complaint	Expectation	Image	Loyalty	Quality	Satisfaction	Value
Comp1	1.000						
Exp1		0.551					
Exp2		0.878					
Exp3		0.591					
Img1			0.732				
Img2			0.819				
Img3			0.686				
Img4			0.785				
Img5			0.775				
Loy1				0.913			
Loy2				0.661			
Loy3				0.837			
Qua1					0.602		
Qua2					0.686		
Qua3					0.681		
Qua4					0.711		
Qua5					0.721		
Qua6					0.693		
Qua7					0.787		
Sat1						0.760	
Sat2						0.648	
Sat3						0.818	
Val1							0.863
Val2							0.904



And the results of composite reliability and average variance extracted are as follows;

Tabel 2 - Composite Reliability and Average Variance Extracted (AVE)

	Composite Reliability	AVE
Complaint	1.000	1.000
Expectation	0.721	0.504
Image	0.872	0.578
Loyalty	0.850	0.657
Quality	0.869	0.509
Satisfaction	0.788	0.555
Value	0.877	0.780

The result of path analysis and significance test as follows;

Tabel 3 - Path coefficient and significance test

	Original Sample (O)	T Statistics	P Values	Significant Level
Complaint -> Loyalty	-0.456	7.102	0.000	Significant
Expectation -> Quality	0.496	8.974	0.000	Significant
Expectation -> Satisfaction	0.131	1.363	0.179	No Significant
Expectation -> Value	0.086	0.979	0.332	No Significant
Image -> Expectation	0.625	14.751	0.000	Significant
Image -> Loyalty	0.198	3.682	0.001	Significant
Image -> Satisfaction	0.130	1.498	0.140	No Significant
Quality -> Satisfaction	0.170	2.180	0.034	Significant
Quality -> Value	0.453	5.722	0.000	Significant
Satisfaction -> Complaint	0.455	6.500	0.000	Significant
Satisfaction -> Loyalty	0.228	3.143	0.003	Significant
Value -> Satisfaction	0.371	5.276	0.000	Significant



And the results significance test as follows;

Tabel 4 - R Squares adjusted and significance test

	Original Sample (O)	T Statistics (O/STERR)	P Values	Significant Level
Complaint	0.202	3.236	0.002	Significant
Expectation	0.387	7.236	0.000	Significant
Loyalty	0.474	7.032	0.000	Significant
Quality	0.241	4.327	0.000	Significant
Satisfaction	0.371	5.877	0.000	Significant
Value	0.241	3.760	0.000	Significant

Based on the above results, it can be seen that all the hypotheses proposed in this study are proved to be significant. This is evidenced by the t value that is bigger than t table with a significance level of 5%.



RESULT

Based on the data processing by using software SmartPLS fit model is obtained as follows;

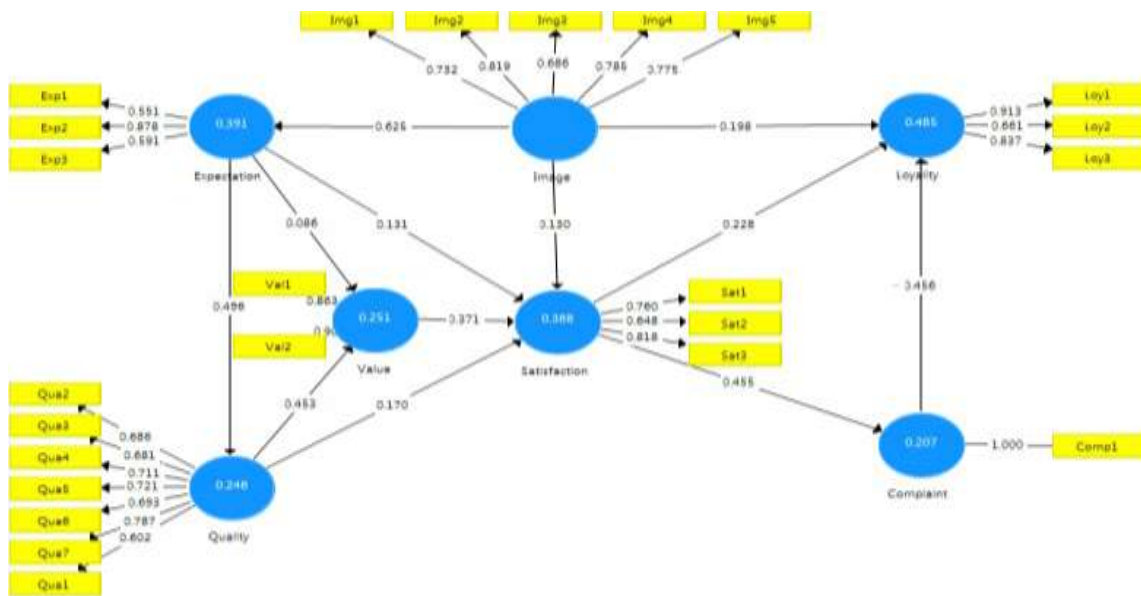


Figure 2 - Model that fits in Measuring Customer Satisfaction and Loyalty with Customer Satisfaction Index

The picture above shows the results of the research. It can be concluded that;

(1) Image on customer expectation, customer satisfaction, and loyalty has significant results with t value amounting to 14,751 and 3,682 for each. Meanwhile, the image through loyalty has no significant result with t value of 1.498 or less than the significance level of 0.5. These results contrast with findings of research carried out by Akbar (2013) that the image variable has a significant effect on loyalty. This has a correlation with the study of Kim et al (2013) that customer's stay at five-star hotels in Shiraz in Iran is influenced by the image.

(2) Complaint toward loyalty has significant results with the t value equal to 7.102 and has adjusted R squares significantly by 0.202 with t value equal to 3.236. The result of t value is greater than the significance level of 0.5, so the complaint variable is significantly influenced by



variable of customer satisfaction over the use of mobile broadband services. The results support the research done by Tung (2013) which states that variable of complaint brings a significant effect on loyalty, but it is in contrast to customer satisfaction that has no significant effect.

(3) Customer expectation on the perceived quality is significant with t value equal to the value of 8.974, but the customer expectation to customer satisfaction and perceived value are not significant because the t value is smaller than the significance level of 0.5. The result of 0.387 adjusted R squares is equal with the t value of 7.236. The result of t value is greater than the significance level of 0.5, so it can be said that the customer expectation variable is influenced significantly by the image variable. These results contrast with research by Tung (2013) who states that customer expectation variable significantly influences the perceived quality and perceived value. These results support the research conducted by Shirin & Puth (2011) that there is a significant influence of customers expectation on the perceived quality of vehicle owners in South Africa.

(4) Loyalty, has adjusted R squares of 0.474 with that value of 7.032. The result of t value is greater than the significance level of 0.5, so that the loyalty variable is simultaneously and significantly influenced by variables of image, customer satisfaction, and complaint. The loyalty variable is significantly influenced by image, customer satisfaction, and complaint with t value of 3.682, 3.143 and 7.102 respectively, compared with 0.5 significance level. Thus, it can be said that loyalty variable is significantly influenced by variables of image, customer satisfaction, and complaint over the use of mobile broadband services. The results support research by Jallow (2013) on the mobile phone customer satisfaction that proves Loyalty is influenced by customer satisfaction and image. Lee (2010) who did research on the users of mobile phone in Seoul, South Korea shows that service quality positively influences customer loyalty. Likewise, Tung (2013) proves that image has a significant effect on customer loyalty.

(5) Perceived quality significantly influences the perceived value and customer satisfaction with the t values amounting to 5,722 and 2,180; those are greater than the significance level of 0.5,



and is also influenced significantly by the customer expectation with t value equal to the value of 8.974. Furthermore, it obtains the result of adjusted R squares at 0.241 by t value equal to the value of 4,327. The result of t value is greater than the significance level of 0.5, so that the variable significantly influences the variables of perceived quality, perceived value, customer satisfaction, and customer expectation in terms of the use of mobile broadband services. These results are supported by research conducted by Kim and Lee (2010) that the variables that are significantly influential are the perceived quality, perceived value, and customer satisfaction. Those are also significantly affected by customer expectation on mobile phone service in Korea.

(6) Customer satisfaction and loyalty to the complaint variable significantly result in the t values equal to the value of 6,500 and 3,143, that are greater than the significance level of 0.5. However, the influence of customer expectation to customer satisfaction is not significant to the t value amounting to 1,363, compared with a significance level of 0.5. Customer satisfaction has the adjusted R square result of 0.371 with the t-value equal to 5.877. The result of t value is greater than the significance level of 0.5, so that customer satisfaction variable is simultaneously and significantly influenced by variables of image, customer expectation, perceived value, and perceived quality. The results support the research conducted by Shirin & Puth (2011) that prove customer satisfaction is significantly influenced by the loyalty and complaint and is significantly affected also by the perceived value and perceived quality; however, it will not be affected significantly by the customer expectation variable of vehicle owners in South Africa.

(7) Perceived value to the customer satisfaction has a significant effect with t value equal to the value of 5.276, which is smaller compared with the significance level of 0.5. In addition, perceived quality significantly influences the perceived value with the t value of 5,722 on customer expectation, while no significant effect is found on perceived value to the value t of 0.979, which is smaller than the significance level of 0.5. In addition to this perceived value, the other variables have adjusted R squares of 0.241 with t value of 3,760. The t value is greater than the significance level of 0.5, so it can be said that the perceived value is simultaneously influenced by customer expectation and perceived quality variables. These results are consistent



with research by Kaveh et al., (2012) that the perceived value variable significantly influences the customer satisfaction variable and is influenced significantly by perceived quality but it is not significantly affected by customer satisfaction at five-star hotels in Shiraz, Iran.

CONCLUSION

The results of this study show that the variable of customer expectation does not significantly affect the perceived value and customer satisfaction. Moreover, image also has no significant effect on customer satisfaction. Nonetheless, the test results on a whole generated and adjusted R squares indicate that the variables of complaint, customer expectation, loyalty, perceived quality, customer satisfaction, and perceived value show the amount of t value is 3.236, 7.236, 7.032, 4.327, 5.877, and 3.760 for each. If compared with the 5% significance level, those values are greater. This can be said that all these variables have a significant effect in shaping customer satisfaction and loyalty over the use of mobile broadband services based on the perceptions of students in Bandung.

In this research, there are still some limitations with respect to customer satisfaction and loyalty. There needs to be a further study that includes some variables that allegedly affect customer satisfaction and loyalty, such as gender, demographics and the complexity of the use of technology systems, and other models of customer satisfaction index so as to produce more comprehensive research results.

REFERENCES

- Asosiasi Penyedia Jasa Internet Indonesia. (2015). Profil Pengguna Internet Indonesia 2014. APJII, Jakarta.
- Suzanto, B. & Sidharta, I. (2015). Pengukuran End-User Computing Satisfaction Atas Penggunaan Sistem Informasi Akademik. *Jurnal Ekonomi, Bisnis & Entrepreneurship*, 9(1), 16-28.



- Sidharta, I., & Sidh, R. (2014). Pengukuran Persepsi Manfaat Dan Persepsi Kemudahan Terhadap Sikap Serta Dampaknya Atas Penggunaan Ulang Online Shopping Pada E-Commerce. *Jurnal Computech & Bisnis*, 8(2), 92-100.
- Parasuraman, A., Zeithaml, V., & Berry, L. (1998). SERVQUAL: An Multiple item Scale for Measuring Customers Perceptions of Service Quality. *Journal of Retailing*, 64 (1), 41-50.
- Oliver, R.L. (1997). Wherece consumer loyalty?, *J. Mark.*, 63(Special issue): 33-64.
- Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J., and Bryant, B.E. (1999). The American Satisfaction Index: Nature, purpose, and findings, *Journal of Marketing Research*, 60: 7-18.
- Anderson, E.W., and Fornell, C. (2000). Foundation of The American Satisfaction Index, *J. Total Qual. Meas*, 11: 869-882.
- Tung, F-C. (2013), Customer satisfaction, perceived value and customer loyalty: the mobile services industry in China, *African Journal of Business Management*, Vol. 7(18):1730-1737, DOI: 10.5897/AJBM10.383
- Johnson, M.D., Gustafsson, A., Anderrassen, T.W., Lervik, L., and Cha, J. (2001). The evolution and future of national customer satisfaction index models, *Journal of Economic Psychology*, 22, Apr.
- Fornell, C. (1992). A national satisfaction barometer: The Swedish experince, *Journal of Marketing*, 56: 6-21.
- Grigoroudis, E., and Siskos, Y. (2003). A survey of customer satisfaction barometer: some results from the transportation-communications sector, *Eur. J. Oper. Res*, 152(2):334-353.
- Fornell, C., & Larcker, D. (1981). Evaluating Structural Equation Models with Unobservable Variable and Measurement Error. *Journal of Marketing Research*, 18, 39-50.
- Akbar, M.M. (2013), Three Competing Models on Customer Loyalty in the Context of Mobile Subscribers, *International Journal of Marketing Studies*; Vol. 5, No. 4; 42-58. doi:10.5539/ijms.v5n4p42
- Kaveh, M., Mosavi, S.A., and Ghaedi, M. (2012), The application of European customer satisfaction index (ECSI) model in determining the antecedents of satisfaction, trust and



repurchase intention in five-star hotels in Shiraz, Iran, *African Journal of Business Management* Vol. 6(1), pp. 6103-6113, DOI: 10.5897/AJBM11.2398.

- Shirin, A. and Puth, G. (2011), Customer satisfaction, brand trust and variety seeking as determinants of brand loyalty, *African Journal of Business Management* Vol. 5(30), pp. 11899-11915, DOI: 10.5897/AJBM11.238.
- Jallow, M. (2013), Customer satisfaction in Taipei mobile phone sector, *African Journal of Business Management* Vol. 7(6), pp. 372-380, DOI: 10.5897/AJBM10.623
- Lee, H.E. (2010). Factors Influencing Customer Loyalty of Mobile Phone Service: Empirical Evidence from Koreans, *Journal of Internet Banking and Commerce*, August 2010, vol. 15, no.2:1-14.
- Kim, J.Y., and Lee, H.E. (2013). Key Factors Influencing Customer Satisfaction in Korea's Mobile Service Sector, *Journal of Internet Banking and Commerce*, December 2013, vol. 18, no.3:1-13.
- Kaveh, M., Mosavi, S.A. and Ghaedi, M. (2012). Linking perceived value and loyalty in location-based mobile services. *Managing Service Quality: An International Journal*, 15(6), 509-538.