

The Effect of Perceived Service Quality and Trust on Loyalty: Customer's Perspectives on Mobile Internet Adoption

Ratna Roostika

Abstract—The Internet application has grown at a very impressive rate. Indonesia as developing country has also experiencing in the impressive growth rate of internet adoption. The objective of this study is to analyze the relationships between service quality, trust, and loyalty as perceived by customers in the mobile internet context. In particular, service quality is conceptualized as a multi dimension concept consisting of seven dimensions. Partial Least Squares (PLS) analysis was used to test the proposed hypotheses. By examining the empirical data from 186 respondents in Yogyakarta, Indonesia, results reveal that there was an indirect relationship between service quality and loyalty through trust. Among the seven dimensions of service quality, contextual quality was found to be the strongest contributors of service quality while device quality was the least.

Index Terms—Mobile internet, service quality, trust, and loyalty.

I. INTRODUCTION

With the rapid adoption of the internet, the familiarization of consumers to mobile internet devices has become one of the most promising and lucrative growth markets. For the users of mobile internet, this technology offers a medium for communication, information searching through its online contents service and varieties of commercial applications. The main reason for the rapid growth in the mobile internet market is the mobility and reach provided to the customers. Customers or users may engage in a real-time contact with others and connect with other systems wherever they are (mobility) and people can be reached at any time (reach) [22].

Indonesia as developing country has also experiencing in the impressive growth rate of internet adoption. The popularity of internet (both mobile and conventional) has increased the number of internet users from 2 million users in 2000 to more than 30 million users in 2010 [37]. Most users of mobile internet are individual and they use this mobile technology as for personal purposes [22]. Since the mobile technology is used for personal purposes, the cost of usage and adoption of technology offered are paid by the personal users. On the other hand, even though there are personal users, the conventional internet services are operated by most institutions, organizations, companies, etc, thus the conventional internet users are employees of organizations, staff and/or students of schools/colleges/universities. The adoption of conventional internet services in this case is

mainly for work or study purposes and is paid by the organization (not by individual users). Since this study concerns on the adoption of mobile internet, therefore the focus is given to customers as personal users of mobile internet.

There are currently ten big providers of mobile network service industry competing in the mobile internet market in Indonesia. The intense competition causes Indonesian mobile internet users are offered with wide ranges of attractive mobile internet packages. All of these attractive packages are directed to gain and maintain relationships, loyalty and further competitive advantage. The intense competition makes necessary to understand the driving forces of customer loyalty. Gaining new customers and profit in the competitive market is not an easy job. This study focuses on the dimensions of service quality and trust as key factors commonly most concerned in contributing to loyalty in the service sector. Despite its phenomenal growth, mobile internet is also in its infancy in developing countries such Indonesia. Research in the mobile internet has been limited in this country. The focus on customers' perspectives will provide a better insight with respect to the relationships between service quality, trust and loyalty as perceived by individual users in the mobile internet market.

II. LITERATURE REVIEW

A. Mobile Internet

Mobile internet defined as the wireless access to internet content via mobile devices, which allow users to access vast amount of information and products available in the internet, anywhere and anytime [8]. Since 2001, there has been a global increase in the proportion of mobile phone users who use the internet functionality on their mobile phones [20]. As the mobile internet market grows, favorable consumer behavior (e.g., to remain loyal, to spend more, to recommend the service) should be maintained since it is essential to the service providers to generate profits [40]. As discussed previously, the major characteristics of mobile internet that differentiates it from traditional internet are mobility and reach. Users can initiate real-time contact with others wherever they happen to be (mobility) and people can be contacted at any time (reach). In the current competitive market, mobile internet providers should be able to make the best of mobility and reach in boosting customers' loyalty and hence their profits.

B. Customers' perspectives

As has been previously discussed, the majority of mobile internet users are currently individual who operates the

Manuscript received May 5, 2011; revised July 25, 2011.

Ratna Roostika is with Dept. of Management, University of Pembangunan Nasional Veteran Yogyakarta (UPN VY), JL. SWK 104, Ringroad Utara, Condong Catur, Yogyakarta Indonesia 55283 (Tel: +62817272048, email: roostika@yahoo.com).

mobile technology for personal purposes. Accordingly, in order to understand the quality dimensions of mobile internet services, customers (as individual) can provide valuable information for the mobile internet service providers. Initially, the idea that quality should be determined by customers came from Juran's statement [19]. He stated that quality assessment should be based on the reasoning that any attempt to create quality is commonly aimed at how to satisfy customers. Further, Babakus and Boller [5] claim that customers should be the ones who determine the features of services regarded as most valuable, as opposed to the features which are determined by the service providers. The only appropriate definition of service quality is in terms of whether or not the service provided met customers' expectations [27]. Zeithaml et al. [39] argue that defining quality should start with customers' opinions. The fundamental position of customers in judging quality was supported by Gronroos [14] who also maintains that quality is meaningful when it is perceived by customers. The above arguments clarify that no one but the customer is the only one that should judge quality. Since customers are the end users and are faced with many choices, their judgment should provide more reasonable and meaningful information as compared to service providers.

C. Service Quality

The mobile internet industry can be categorized more as service industry due to its service nature such as intangibility, inseparability, heterogeneity and perishability. Because of the attributes of services, the evaluation of service quality is more difficult than the evaluation of product (tangible) quality. The most common concept of service quality used by experts in service quality studies is the conceptualization provided by Zeithaml [38] "the consumer's judgment about the overall excellence or superiority of a service". This study adopts Zeithaml [38] service quality conceptualization. In the context of mobile internet services, only few researchers have systematically examined the dimensions of service quality [35]. Chae et al. [8] determine four dimensions focusing on information quality for mobile internet services namely: connection quality, content quality, interaction quality and contextual quality. Connection quality deals with consumers access to stable mobile services without interruption of connection and to speedy system responses to users' requests (clicks). Content quality refers to the inherent value and usefulness of the information provided by mobile services [8]. Interaction quality mainly deals with the provision of easy and efficient mobile services, while contextual quality refers to the ubiquitous nature of mobile services and personalization issues. Chae et al. [8] research focuses only on information quality rather than general service quality as developed by Parasuraman et. al [28]. Along these lines, the e-service quality literature suggests that besides information quality, there are still other dimensions that built quality in the mobile internet context such as customer service and privacy aspects of engaging with this telecommunication technology [29]. Customer service refers to service provision that is responsive and helpful, while privacy deals with a sense of feeling safe when using the service and the privacy of shared information [29].

In addition, Vlachos and Vrechopoulos [35] have identified that customers consistently view the quality of the hand held (tangible) devices as an important dimension of service quality. Theoretically, the importance of device quality is based on the justification that the device can be viewed as the "environment" – or a major part of the environment – of the mobile internet service, which is well established as a direct antecedent of service quality in traditional industries [7]. Based on the theoretical and empirical evidence, device quality is conceptualized as the perceptions that users form regarding the look and feel of the device (tangible aspect) [35]. This study however, investigates customers' service quality perceptions in the mobile internet context based on: interaction quality, content quality, contextual quality, device quality, connection quality, customer service and privacy.

Apart from the importance of the dimensions that build service quality, there are many consequences of service quality have been identified in previous literature. Aydin and Ozer [4] have divided two underlying processes of service quality contribution to profitability. First, service quality is regarded as one of the few means for service differentiation and competitive advantage that attracts new customers and contributes to the market share [34]. Second, service quality enhances customers' inclination to buy again, to buy more, to buy other services, to become less price-sensitive and to tell others about their favorable experiences (34). Bloemer et al. [6] and Jones et al. [18] also have pointed out that there is a positive relationship between service quality and repurchase intention, recommendation, and resistance to better alternatives. All these are positive behavioral intentions and constitute customer loyalty.

D. Trust

In prior research, trust has been conceptualized in several ways and researchers have long acknowledged this confusion [4]. In the context of Internet commerce, diversity in the conceptualization of trust is also evident [13]. Trust is viewed as: (a) trusting beliefs is described as consumers' perceptions of particular attributes of mobile vendors, including the ability, integrity and benevolence of the vendors, when handling the consumers' transactions [21] and (b) trusting intentions which implies that the truster feels secure and is willing to depend, or intends to depend, on the trustee [23]. Trusting intentions, in the internet commerce, include making a one time or repeat purchase, or acting on information provided by a mobile vendor.

The management of customer trust is especially important. In order to trust a service, customers should perceive the quality as being positive. Anderson and Narus [2] emphasize that trust occurs when one party believes that the other party's actions would result in positive outcomes for itself. This implies that service quality may build customers' believes and further will have a positive effect on trust. Trust further has been recognized as having important role in affecting relationship commitment [25] and so customer loyalty [15].

E. Customer Loyalty

There have been many ways of defining and measuring

customer loyalty [17]. Loyalty covers all the behavioral and attitudinal aspects [31]. Loyalty can be expressed in many ways depending on the products/services and situations, such as retention, making re-purchase and financial/non-financial contributions. Based on prior studies in the e-commerce [3], customer loyalty was defined as the customer's favorable attitude toward the mobile commerce website, resulting in repeat purchasing behavior. Oliver [26] defines brand loyalty as "a deeply held commitment to re-buy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". Oliver believes that there are two different aspects of loyalty namely behavioral and attitudinal [17]. Chaudhuri and Holbrook [9] suggest that behavioral loyalty consists of repeated purchases of the brand/product, whereas attitudinal loyalty consists of a degree of dispositional commitment, in terms of some unique value associated with the brand.

Studies have been conducted to examine the association

between service quality and loyalty such as: Parasuraman et al. [28] found positive relationship between service quality and willingness to recommends and Bloemer et al. [6] and Jones et al. [18] have identified a positive relationship with repurchase intention, recommendations, and resistance to better alternatives.

III. HYPOTHESES AND STRUCTURAL MODEL

Based on the results of earlier studies discussed in the previous section, researcher formulated the hypotheses detailed below. The structural model is illustrated in Figure 1.

H1. There will be a positive relationship between perceived service quality and customer loyalty.

H2. There will be a positive relationship between trust and customer loyalty.

H3. Trust mediates the relationship between perceived service quality and customer loyalty.

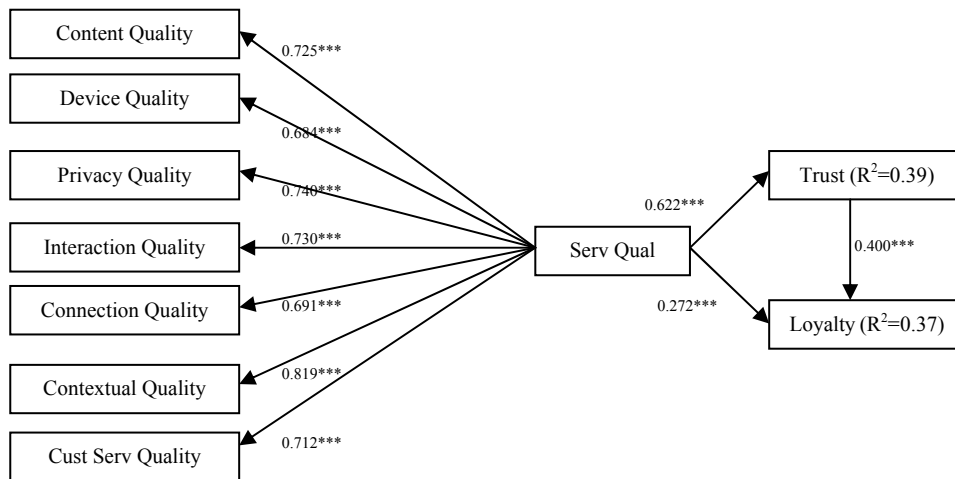


Fig. 1. The Structural Model

IV. METHODOLOGY AND FINDINGS

A. Measures

Items selected for the dimensions were primarily adapted from prior studies to ensure content validity. Some refinements were made to take account of the study in the Indonesian mobile internet market context. The seven dimensions of service quality were developed from Vlachos and Vrechopoulos [35] study. The seven dimensions of service quality are: content quality (3 items); device quality (3 items); privacy quality (3 items); interaction quality (3 items); connection quality (3 items); customer service (2 items); and contextual quality (3 items). A unidimensional measure of trust and loyalty (5 items each) were adopted from Aydin and Ozer [4]. Likert scales (ranging from 1 to 5), with anchors ranging from "strongly disagree" to "strongly agree" were used for all questions. After pre-testing the measures, these items were slightly reviewed and modified to accommodate suggestions received during the pre-testing stage.

B. Sample and Data

Data were collected from mobile internet users in the city of Yogyakarta. Yogyakarta is known as student and cultural city. Yogyakarta hosts many reputable universities within the national scope and experiencing in strong growth of service industries. Because of budgetary and time constraints, purposive sampling was employed. The population included only those respondents who are users of mobile internet services. Questionnaires were distributed across several cafes and the three main universities.

C. Data Analysis

PLS method was used because of its robustness against distributional constraints as compared to covariance-based analysis methods (e.g. AMOS or LISREL) [10]. There is a tendency for the data to be negatively skewed in the loyalty measurement and study involving perceptions [1]. PLS is a powerful technique for analyzing latent variable structural equation models with multiple indicators [32]. In order to assess the statistical significance, Smart PLS [30] was used with bootstrap analysis using 500 sub-samples.

D. Findings

1) Descriptive Analysis

More than half of the respondents were between the ages of 18-24. There were more men respondents (55.9 %) than women. The status of the respondents ranges from college students, undergraduate students, employers and employees. Overall, 186 out of 300 questionnaires were usable for further comprehensive empirical analysis.

2) Assessments of Validity and Reliability

Before testing the structural model, the measurement model should exhibit satisfactory levels of validity and reliability [12]. The validity and reliability were tested by PLS through the measurement model (outer model). The measurement model was evaluated by examining the individual loadings of each item, internal composite reliability (ICR), average variance extracted (AVE) and discriminant validity through cross loading [10]. Significance of the parameters estimated was calculated on the basis of 500 bootstrapped samples [36]. The tests for internal consistency, convergent and discriminant validity follow the testing system recommended by Fornell and Larcker [12].

The PLS analysis produces composite reliability measure which is similar to Cronbach's alpha, but preferred in structural equations modeling because it estimates consistency on the basis of actual measurement loadings [36]. The internal consistency values should exceed the 0.60 cut-off point suggested [12]. Table 1. shows that all ICR value have exceeded 0.60 cut off point. Convergent validity exists as all the factor loadings showed greater than 0.5. Hulland [16] suggests that only items with factor loadings less than 0.50 should be removed. In addition, to satisfy convergent validity, AVE should be greater than 0.50 [12]. Tabel 1. shows three factors have AVE less than 0.5. Content quality dimension (see Table 1.) was found to have AVE less than 0.5, and this was similar to findings from Vlachos and Vrechopoulos [35] in the mobile internet market. This factor however is retained due to its validity in terms of its content.

To establish discriminant validity (that is, the extent to which measures of theoretically unrelated constructs do not correlate with one another), the crossloading and the square root of AVE were examined. The crossloading (correlation

between item loadings and construct) shows discriminant validity when the indicators are better associated with their respective construct than they are with other constructs. The crossloading examination in this study has identified a satisfactory correlation between constructs and their respective indicators. The last procedure, the square root of the AVE, was demonstrated by comparing the square root of the AVE for each constructs with the correlations between the construct and other constructs in the model. The evidence of discriminant validity is shown when the square root of the AVE of each construct is larger than the correlations between the construct and any other constructs [33]. The square root of AVE in this study has also proven a satisfactory level where all larger than the correlations between the construct and any other constructs (see Table 2.).

Overall, even though AVE of these three dimensions (content quality, trust and loyalty) were less than 0.5 (cut off point), these dimensions were retained due to overall content validity and discriminant validity that satisfy the criteria of validity and reliability. In addition, AVE is not the only available test of validity provided by PLS analysis. Hence, it can be concluded that the measurement model in this study has exhibited satisfactory levels of validity and reliability of the measures.

3) Test of Hypotheses

The structural model (inner model) in PLS was assessed by examining the path coefficients, t-statistics and R2 value [10]. Before discussing hypotheses, we can see from Figure 1. that among the dimensions of service quality, the top three strongest path coefficients were shown by contextual quality, followed respectively by privacy quality and interaction quality. Device quality was identified as the lowest.

TABLE 1. AVE, ICR AND R²

	AVE	ICR	R ²
Connection Quality	0.6537	0.8495	0.4772
Content Quality	0.4879	0.7405	0.4678
Contextual Quality	0.6304	0.8346	0.6715
Customer Service Qual	0.7057	0.8274	0.5067
Device Quality	0.7248	0.8876	0.5261
Interaction Quality	0.6067	0.8220	0.5327
Privacy Quality	0.5652	0.7933	0.5481
Loyalty	0.3687	0.7441	0.3698
Trust	0.4912	0.3866	0.7407

TABLE 2. AVE SQUARE ROOT

	Connection	Content	Contextual	Cust Serv	Device	Interaction	Loyalty	Privacy	Trust
Connection	0.8085	0	0	0	0	0	0	0	0
Content	0.2569	0.6985	0	0	0	0	0	0	0
Contextual	0.6097	0.5111	0.7940	0	0	0	0	0	0
Cust Serv	0.5684	0.342	0.5771	0.8401	0	0	0	0	0
Device	0.3142	0.5717	0.4705	0.3377	0.8514	0	0	0	0
Interaction	0.3587	0.3942	0.4859	0.4101	0.5201	0.7789	0	0	0
Loyalty	0.3061	0.3473	0.3849	0.3877	0.3468	0.4269	0.6072	0	0
Privacy	0.4059	0.5014	0.4784	0.5004	0.4106	0.5202	0.4644	0.7518	0
Trust	0.4075	0.4526	0.4862	0.4237	0.4169	0.4737	0.5695	0.5181	0.700

All the path coefficients in the inner model (service quality-loyalty (0.272), service quality-trust (0.622) and trust-loyalty (0.40) were significant at 0.001 level (see Figure 1). The PLS results indicated that all path coefficient in the structural model were significant. These were shown by

t-statistics having value above 2 (1.96) in all path coefficients produced. All postulated hypotheses were supported where there were positive relationships between service quality and trust to customer loyalty as proposed in H1 and H2. Trust has stronger effect on loyalty (0.400) as compared to the direct

effect of service quality to loyalty (0.272). It can be concluded that trust partly mediates the relationship between service quality and loyalty. This means that H3 was also supported. In addition, all seven dimensions of service quality were also significant as shown in Figure 1.

In terms of R2, the proposed model shows that 37% of the variance in loyalty was explained by service quality and trust. Whereas, 39% of the variance of trust was explained by service quality. This means that service quality and trust have medium predictive power to loyalty (> 30%) [32]. The rule-of-thumb for the significance of R2 of the predicted variables should be greater than 0.10 [11]. Overall, it can be said that simultaneously, the direct and indirect links between service quality, trust and loyalty are all significant, in support of H1 to H3. Figure 1. presents the results of the proposed structural model.

V. CONCLUSIONS AND IMPLICATIONS

This study re-examined the integrative model as previously developed by Aydin and Ozer [4] and Lin and Wang [23]. Service Quality and trust are important dimensions in the mobile internet industry, particularly in predicting loyalty as identified by numbers of past research. This study empirically identified the important role of both service quality and trust in contributing positive effect on loyalty. Even though trust has stronger effect on loyalty than service quality, it should be noted that service quality has strong effect on trust. This means that without service quality, it will be impossible to build customer's trust. In the integrative model, it can be seen simultaneously the contributions of service quality and trust to loyalty. The indirect effect should be taken into account, where there is an indirect process from service quality to trust and then to loyalty.

This study offers managerial implications, where manager should be able to see that there is no guarantee in directly achieving loyalty after providing all dimensions of service quality. In the service industry such as mobile internet market, trust is very crucial and therefore, service quality should be directed to build customer's trust in order to later developing loyalty. Based on Figure 1., it can be seen that among the seven dimensions that built service quality, contextual, interaction, and privacy quality are the top three contributors of service quality, whereas device quality is the lowest. This informs that in the Indonesian mobile internet market, where there were ten big players, and the market is reaching maturity, basic competitive strategy such as price competition or tangible product performance are no longer enough. Thus mobile internet providers should shift the paradigm to providing a more value added telecommunication services such as contextual richness, varieties of interactions and protection on privacy. As for device quality, currently, customers have access for the wide varieties of available and affordable mobile devices, particularly after the agreement of free trade area where many products from China and other new developed countries have been entering Indonesian's mobile markets. This condition is somewhat benefiting consumers since they can get the latest technology with affordable price. Indonesians' consumers are also

currently showing an increasing trend of confidence in buying the electronic products produced by Asian countries. Thus, as part of the strategy in providing differentiation, regardless the importance of device quality, the other dimensions of service quality has proven to contribute to better effects on positive customers' perceptions. In conclusion, managers should shift the view of competition from emphasizing price and tangible products, to a more value added services such as trust and a more in- depth intangible aspects of service quality offerings.

Theoretically, based on customers' perspectives, this study enriches the original service quality measures as suggested by Parasuraman et al. [28]. Their original service quality dimensions should be adjusted into a more specific aspect of the area being investigated, such as mobile internet context. In this case, modification of Parasuraman et al. [28] dimensions is necessary. The simultaneous model relating service quality, trust and loyalty also extends the generalisability of the model in the different location (developing countries – Indonesia). Nevertheless, researcher also acknowledges some weaknesses in this study, in particular with regards to the limitation of sample selection.

REFERENCES

- [1] E.W. Anderson and C. Fornell, Foundations of the American customer satisfaction index, *Total Quality Management*, 2000, vol. 11, no. 7, pp. 869-882.
- [2] J. C. Anderson and J. A. Narus, A model of distributor firm and manufacturer firm working partnerships, *Journal of Marketing*, 1990, vol. 54 (January), pp. 42-58.
- [3] R.E. Anderson and S.S. Srinivasan, E-satisfaction and e-loyalty: a contingency framework, *Psychology & Marketing*, 2003, vol. 20, no. 2, pp. 123-138.
- [4] S. Aydin and G. Ozer, The analysis of antecedents of customer loyalty in the Turkish mobile telecommunication market, *European Journal of Marketing*, 2005, vol. 39, no. 7/8, pp. 910-925.
- [5] E. Babakus and G. Boller, An empirical assessment of the SERVQUAL scale, *Journal of Business Research*, 1992, vol. 24, no. 3, pp. 253-268.
- [6] J. Bloemer, K. Ruyter and M. Wetzels, On the relationship between perceived service quality, service loyalty and switching costs, *International Journal of Industry Management*, 1998, vol. 9, no. 5, pp. 436-453.
- [7] M. K. Brady and J.J. Cronin, Some new thoughts on conceptualizing perceived service quality: a hierarchical approach, *Journal of Marketing*, 2001, vol. 65, July, pp. 34-39.
- [8] M. Chae, J. Kim, H. Kim, H. and H. Ryu, Information quality for wireless internet services, *Electronic Markets*, 2002, vol. 12, no. 1, 38-46.
- [9] A. Chaudhuri and M. B. Holbrook, The chain effects from brand trust and brand affect to brand performance: the role of brand loyalty, *Journal of Marketing*, 2001, vol. 65, April, pp. 31-93
- [10] W.W. Chin, The partial least square approach to structural equation modeling, in Marcoulides Ga (Ed), *Modern methods for business research*, Lawrence Erlbaum Associates, Mahwah, London, New Jersey, 1998, pp. 295-336.
- [11] R.F. Falk and N.B. Miller, *A primer for soft modeling*, University of Akron Press, Akron, OH. 1992.
- [12] C. Fornell and D. Larcker, Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, 1981, vol. 19, pp. 440-452.
- [13] D. Gefen, E. Karahanna and D. W. Straub, D. W. Trust and TAM in online shopping: an integrated model, *MIS Quarterly*, 2003, vol. 27, no. 1, 51-90.
- [14] C. Gronroos, *Service management and marketing: managing the moments in truth in service competition*, Lexington Books, Lexington, MA, 1990.
- [15] G. T. Gundlach and P. E. Murphy, Ethical and legal foundations of relational marketing exchanges, *Journal of Marketing*, 1993, vol. 57, October, pp. 35-46.

- [16] J. Hulland, Use of partial least squares (PLS) in strategic management research: a review of four recent studies, *Strategic Management Journal*, 1999, vol. 20, pp. 195-204.
- [17] J. Jacoby and R. W. Chestnut, *Brand loyalty: measurement and management*, John Wiley and Son, NY, 1978.
- [18] M. A. Jones, S. E. Beatty and D.V. Mothersbaugh, Why customers stay: measuring the underlying dimensions of services switching costs and managing their differential strategic outcomes, *Journal of Business Research*, 2002, vol. 55, pp. 441-450.
- [19] J. M. Juran, F. M. Gryna and R. S. Bingham, *Quality control handbook*, 3rd edn, McGraw-Hill, NY, 1974.
- [20] A. T. Kearney, 2003, The new mobile mindset: a study on trends in mobile phone usage and their effect on the industry”, available at: www.atkearney.com/shared_res/pdf/Mobinet_Monograph_S.pdf.
- [21] D. Kim and I. Benbasat, Trust-related arguments in internet stores: a framework for evaluation, *Journal of Electronic Commerce Research*, 2003, vol. 4, no. 2, pp. 49-64.
- [22] H.W. Kim, H.C. Chan and S. Gupta, Value-based adoption of mobile internet: an empirical investigation, *Decision Support Systems*, 2007, vol. 43, pp. 111-126.
- [23] H. H. Lin and Y. S. Wang, An examination of the determinants of customer loyalty in mobile commerce contexts, *Informastion and Management*, 2006, vol. 43, pp. 271-282.
- [24] D. H. McKnight, V. Choudhury and C. Kacmar, Developing and validating trust measures for e-commerce: an integrative typology, *Information Systems Research*, 2002, vol. 13, no. 3, pp. 334-359
- [25] R. M. Morgan and S. D. Hunt, The commitment-trust theory of relationship marketing, *Journal of Marketing*, 1994, vol. 58 (July), pp. 20-38.
- [26] R.L. Oliver, Whence consumer loyalty, *Journal of Marketing*, 63 (special issue), 1999, pp. 33-44.
- [27] A.Parasuraman, V. A. Zeithaml and L.L. Berry, A conceptual model of service quality and its implications for future research, *Journal of Marketing*, 1985, vol. 49, no. 4, pp 41-50.
- [28] A. Parasuraman, V.A. Zeithaml and L. Berry, SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 1988, vol. 64, no. 1, pp. 12-40.
- [29] A. Parasuraman, V. A. Zeithaml and A. Malhotra, E-S-QUAL: a multiple item scale for assessing E-SQ, *Journal of Service Research*, 2005, vol. 7, no. 3, pp. 213-233.
- [30] C.M. Ringle, S. Wende and A. Will, Smart-PLS 2005, retrieved, March 23rd 2006, from <http://www.smartpls.de/forum/>.
- [31] J. Rowley, Retention: rhetoric or realistic agendas for the future of higher education, *The International Journal of Educational Management*, 2003, vol. 17, no. 6, pp. 248-253.
- [32] N. Sirohi, E.D. McLaughlin, and D.R. Wittink, A model of consumer perceptions and store loyalty intentions for a supermarket retailer, *Journal of Retailing*, 1998, vol. 74, no. 2, pp. 223-245.
- [33] D. S. Staples, J. S. Hulland and C. A. Higgins, A self-efficacy theory explanation for the management of remote workers in virtual organisations’, *Organisation Science*, 1999, vol. 10, no. 6, pp. 758-776.
- [34] K.A. Venetis and P.N. Ghauri, The importance of service quality on customer retention: an empirical study of business service relationships, Proceedings of the Marketing in a Global Economy Conference, Buenos Aires, June 28-July 1, 2000, pp. 215-224.
- [35] P.A. Vlachos and P.A. Vrechopoulos, Determinants of behavioral intentions in the mobile internet services market, *Journal of Services Marketing*, 2008, vol. 2, no. 4, pp. 280-291.
- [36] C.J. White, R. P. Varadarajan and P. Dacin, Market situation and response: the role of cognitive style, organizational culture, and information use. *Journal of Marketing*, 2003, vol 67(Jul), pp. 63-79.
- [37] www.internetworldstats.com/stats.htm.
- [38] V. A. Zeithaml, Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing*, 1988, vol. 52 (july), pp. 2-22.
- [39] V. A. Zeithaml, A. Parasuraman, A and L. L. Berry, *Delivering quality service: balancing customer perceptions and expectations*, The Free Press, NY, 1990.
- [40] V. A. Zeithaml, L. L. Berry and A. Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 1996, vol. 60, no. 2, pp. 31-46.

Ratna Roostika is a senior lecturer and researcher at the University of Pembangunan Nasional ‘Veteran’ Yogyakarta majoring in strategic management and marketing. She completed her master from The University of Melbourne in 2002 and PhD in Swinburne University of Technology, Australia in 2010. Her research interests include strategic management, service management, strategic marketing, service quality, and customer value. As lecturer, she is responsible for these following subjects: strategic management, organization change, marketing and global marketing.