Mediating Effect of Customer Satisfaction on Perceived Product Quality, Perceived Value, and Their Relation to Brand Loyalty

Abdul Wahid Mohd Kassim, Oswald A. Igau, Amran Harun, Sulaiman Tahajuddin

Abstract
The study examines the mediating role of customer satisfaction in the relationship between perceived product quality, perceived value, and brand loyalty. Data were collected from working people who have purchasing power and users of mobile phones. The findings of this study show that customer satisfaction plays an important role in mediating the relationship between perceived product quality, perceived value, and brand loyalty. The current findings found a significant relationship between perceived value and brand loyalty. However, the current study did not found a significant relationship between perceived value and brand loyalty. Conclusion and implication are provided in this paper.

Keywords
Perceived product quality, perceived value, customer satisfaction, brand loyalty, mobile phones

I. Introduction
According to Petruzzelli (2010) mobile phone is now perceived as a social necessity and various factors have contributed to its extraordinary industry growth rate such as technological change, market demand and the stiff competition. Enormous challenges face by marketers particularly keeping consumers loyalty to their product (Luam & Lin, 2003; Nasir, 2005). One effective strategy can be employed by businesses is maintaining their market share through loyalty. In fact, Darsono & Junaeedi (2006) and Dick and Basu (1994) believe that the strategy for attaining sustainable competitive advantage begins from customer loyalty. A loyal customer base is an invaluable asset to the business (Darsono & Junaeedi, 2006) which helps a business maintaining switching behaviour and lessens the need to search for new customers (Rowley & Dawes, 2000; Ruyter & Bloemer, 1999). Furthermore, previous research has indicated the relationship between profitability and customer loyalty (Duncan & Elliot 2002; Kish, 2000); consecutively it leads to considerable competitive advantage (Yap et al., 2012). Thus, the study on brand loyalty, customer satisfaction, perceived product quality and perceived value are crucial and valuable for businesses in designing their strategies for superior market share and customer retention. Hence, the current study is focuses on investigating the relationship between perceived product quality, perceived value, customers’ satisfactions and brand loyalty in the context of mobile purchasing.

II. Literature Review
Previous studies concerning brand loyalty, perceived value and customer satisfaction and their relationship are discussed below.

A. Brand Loyalty
The terms “product” and “brand” used interchangeably (Myers, 2003). Distinguishing between the terms, Farquhar (1989) and Cobb-Walgrenet al.,(1995) addresses product as something that tends to offer a functional benefit, whereas a brand is a name, symbol, design or mark that enhances the value of a particular product. Similarly, Bennett (1988) defined brand as a name, term, design, symbol or any other feature that identifies one seller’s good or service as distinct from those of other sellers. Brand loyalty defined as a strong commitment to rebuy or repatronize a preferred product or repatronize a service consistently in the future, thereby causing repetitive same-brand or same-brand set purchasing (Oliver, 1999; Denison & Knox, 1995). Emphasizing the importance of brand loyalty, Taylor et al.,(2004) point out that loyalty can be spread across more than one brand. Consumers can, in effect, be loyal to a portfolio of brands across product categories, selecting from this portfolio at each purchase occasion. Oliver (1999) furtherindicates that customer loyalty is a function of perceived product value superiority.

B. Perceived Product Quality
Churchill and Surprenant (1982) defined quality as belief statements or attribute performance. Meanwhile, perceived quality is defined as the consumers’ judgment about an entity’s (service’s) overall excellence or superiority (Rowley, 1998; Zeithaml, 1988). Perceived quality is basically the overall customer’s perception about the quality of a product. Evidence from prior studies has indicated that there is a positive and direct relationship between perceived quality and customer satisfaction (Ha et al., 2011, 2009; Parasuraman et al., 1994). Anderson et al., (1994) noted that quality as a significant predictor of customer satisfaction and that this relationship, over the long term, was an important predictor of superior economic returns through repeat sales. Perceived quality of a product or service is related to but not the same as satisfaction resulting from comparison of expectations with a perception of performance (Rowley, 1998). It also suggested that when the perceived quality of a particular product rises, customer satisfaction is expected to increases (Fornellet al., 1996) and ultimately can lead to brand loyalty (Ha et al., 2011, 2009). In short, satisfied customers are more loyal.

C. Perceived Value
Customer delivered value can be defined as the total value offered to a customer less the total cost to the customer (Oliver, 1999; Day &Crask, 2000; Gronroos,2000). The most cited definition offers byZeithaml(1988) describe value as the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given. Similarly, Holbrook (1999) defined value as a ‘trade-off’ between benefits and sacrifices. Value is indeed a unique construct from satisfaction and quality (Oliver, 1999; Day &Crask, 2000). Marketers have to work hard creating
added value that could satisfy customers for earned loyalty (Taylor et al., 2004). Customer’s perceived value can be viewed from the perspectives of money, quality, benefit, and social psychology (Ying et al., 2009). Normally, from monetary aspect value is said to be generated when less is paid for goods (Bishop, 1984). Reichheld (1996) highlighted what keeps a customer loyal is the value they receive and one of the reasons so many businesses fail is that too much of their learning revolves around profit and too little around value creation. The relationship between perceived value and customer satisfaction being highlighted by Lin and Wang (2006) that customer satisfaction is the result of a customer’s perception of value received. Perceived value is considered a construct that captures any benefit-sacrifice discrepancy in the same way that disconfirmation does for variations between expectations and perceived performance. The literatures suggested that perceived value contribute towards brand loyalty (Lin & Wang, 2006; Gronroos, 2000).

D. Customer Satisfaction
Satisfaction is defined as an emotional post-consumption response that may occur as the result of comparing expected and actual performance (disconfirmation), or it can be an outcome that occurs without comparing expectations (Oliver, 1999). This definition is rooted in the disconfirmation paradigm, which suggests that satisfaction judgments are formed in a process of comparison of perceived performance with pre-experience expectations. Hence, satisfaction is said to result from positive disconfirmation such as product performances are greater than that initially expected. In the similar noted, Shukla (2004) proposed satisfaction is the results from positive disconfirmation, i.e. product performance is greater than that initial expectation. Lin and Wang, (2006) revealed that customer satisfaction in the mobile context is a consumer’s total response to the purchase experiences in a mobile context environment. On the relationship, literatures proposed direct influence of satisfaction on brand loyalty (Mittal & Lassar, 1998; Oliver, 1997; Mittal & Kamakura, 2001). The form of relationship between customer satisfaction and loyalty could be nonlinear (Kumar, 2002; Aaker, 1991; Mittal & Kamakura, 2001). Further explained by Heskett et al., (1997), customer loyalty should increase rapidly after customer satisfaction passes a certain threshold that is, there are increasing returns to scale in the relationship between customer satisfaction and brand loyalty. A high level of customer satisfaction may have a positive impact on customer loyalty as suggested by Mittal et al., (1998). In other notes, customer satisfaction could produce totally mediation effect on the relationship between perceived value and customer loyalty (Lin & Wang, 2006).

III. The Research Model And Hypotheses
The following research model has been used in this study as shown in Figure 1.

From the above mentioned model the following main hypothesis are developed:
H1: There is a significant relationship between perceived product quality and brand loyalty.
H2: There is a significant relationship between perceived value and brand loyalty.
H3: There is a significant relationship between customer satisfaction and brand loyalty.
H4: There is a significant relationship between perceived product quality and customer satisfaction.
H5: There is a significant relationship between perceived value and customer satisfaction.
H6: Customer satisfaction will mediate the impact of perceived product quality and brand loyalty.
H7: Customer satisfaction will mediate the impact of perceived value on brand loyalty.

IV. Research Methodology
1. Sample Profile
The subjects for this study were confined to the mobile users who are working in Kota Kinabalu, Sabah. In total, 150 usable questionnaires were collected. Table 1 displays the characteristics of the sample. Table 1 presents the sample’s demographic characteristics and mobile telephone usage profile respectively. As it can be seen in Table 1, the sample is rather skewed towards female, below 40-year old and not highly educated users having below RM3000 gross monthly income. The majority of the respondents’ currently used Nokia phone which is 56% from the total respondents. This is followed by Sony Ericsson of 22.7%, others (iPhone, HTC) 15.3%, LG of 4% and Samsung of 2%.
2. Measurement Instrument

Prior to further analysis, common method variance (CMV) need to be tested when data are collected through self-reported questionnaires and, especially, when both the criterion and predictor variables are acquired from the same person (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). CMV refers to variance credited to measurement method instead of variance explained by the study’s construct. The existence of CMV can be detected if one principal factor counts for the majority of the variance explained (Podsakoff and Organ 1986). As such, CMV was first to be tested to obtain rigorous empirical evidence in this study. An exploratory factor analysis was performed by entering all measurement items, findings revealed that the largest variance explained by an individual factor was 41.042%. The findings confirmed that CMV was not considered a significant problem for this study.

V. Analysis And Results

A. Assessment of the Measurement Model

The assessment of the measurement model was done using both convergent and discriminant validity analysis. First, the measurement model was tested for convergent validity. The convergent validity is defined as the degree to which multiple items converge in measuring the concept of construct (Bagozzi et al., 1991; Hair et al., 2010). Referring to Table 2, the loadings for all items exceeded the recommended value of 0.5 (Hair et al., 2010). While, the composite reliability value of all the constructs exceeded the 0.7 threshold and all the values of AVEs are more than the 0.5 threshold. Thus, one can confirm that the measurement model possesses an adequate level of convergent validity. Therefore, we can conclude that convergent validity has been established.

The discriminant validity represents the extent to which a set of indicators discriminate a construct from other constructs in the model. This implies that good discriminant validity is achieved when the items share more variance with their constructs than the constructs share with other constructs more (Compeau et al., 1999). The measurement model’s discriminant validity is examined based on the criterion suggested by Fornell and Larcker (1981). The correlation matrix as shown in Table 3 below is represented by a diagonal elements which are the square root of the AVE of all the latent constructs. The discriminant validity is assumed if the diagonal elements are higher than other off-diagonal elements in their rows and columns. This situation is apparently the case in the correlation matrix and thus the discriminant validity is confirmed.

Note: PV6 was deleted due to low loading.

a: $AVE = \sum \text{(factor loading)}^2 / (\sum \text{(factor loading)}^2 + \sum \text{(variance of error)})$

b: $CR = (\Sigma \text{factor loading})^2 / \{(\Sigma \text{factor loading})^2 + \Sigma \text{(variance of error)}\}$

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Loading</th>
<th>AVEa</th>
<th>CRb</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLOyalty</td>
<td>BL1</td>
<td>0.831</td>
<td>0.702</td>
<td>0.934</td>
</tr>
<tr>
<td></td>
<td>BL2</td>
<td>0.836</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BL3</td>
<td>0.812</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BL4</td>
<td>0.824</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BL5</td>
<td>0.827</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BL6</td>
<td>0.894</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSatis</td>
<td>CS1</td>
<td>0.914</td>
<td>0.757</td>
<td>0.949</td>
</tr>
<tr>
<td></td>
<td>CS2</td>
<td>0.910</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS3</td>
<td>0.873</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS4</td>
<td>0.899</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS5</td>
<td>0.847</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS6</td>
<td>0.769</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPQ</td>
<td>PPQ1</td>
<td>0.783</td>
<td>0.518</td>
<td>0.863</td>
</tr>
<tr>
<td></td>
<td>PPQ2</td>
<td>0.723</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPQ3</td>
<td>0.849</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPQ4</td>
<td>0.755</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPQ5</td>
<td>0.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPQ6</td>
<td>0.636</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PValue</td>
<td>PV1</td>
<td>0.717</td>
<td>0.546</td>
<td>0.856</td>
</tr>
<tr>
<td></td>
<td>PV2</td>
<td>0.710</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV3</td>
<td>0.786</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV4</td>
<td>0.852</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV5</td>
<td>0.606</td>
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</tr>
</tbody>
</table>

Table 2: Measurement Model

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone brand</td>
<td>Nokia</td>
<td>84</td>
<td>56.00</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>58</td>
<td>38.70</td>
</tr>
<tr>
<td>Age</td>
<td>20 – 29</td>
<td>49</td>
<td>32.70</td>
</tr>
<tr>
<td>Education</td>
<td>SPM/Certificate</td>
<td>40</td>
<td>26.70</td>
</tr>
<tr>
<td>Monthly income</td>
<td>RM1000 and below</td>
<td>88</td>
<td>58.70</td>
</tr>
<tr>
<td></td>
<td>RM1001 – RM3000</td>
<td>34</td>
<td>22.70</td>
</tr>
<tr>
<td></td>
<td>RM3001 – RM5000</td>
<td>8</td>
<td>5.40</td>
</tr>
<tr>
<td></td>
<td>RM5001 and above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Discriminant Validity

<table>
<thead>
<tr>
<th>BLoyalty</th>
<th>CSatis</th>
<th>PPQ</th>
<th>PValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.838</td>
<td>0.565</td>
<td>0.555</td>
<td>0.378</td>
</tr>
<tr>
<td>0.565</td>
<td>0.870</td>
<td>0.706</td>
<td>0.536</td>
</tr>
<tr>
<td>0.555</td>
<td>0.706</td>
<td>0.720</td>
<td>0.517</td>
</tr>
<tr>
<td>0.378</td>
<td>0.536</td>
<td>0.517</td>
<td>0.739</td>
</tr>
</tbody>
</table>

B. Assessment of the Structural Model

After the assessment of the measurement model, the structural model then evaluated to test the hypotheses. The quality of the structural model can be assessed by R2 which shows the variance in the endogenous variable that is explained by the exogenous variables. Based on the results reported in Table 4, the R2 of the customer satisfaction was found to be 0.538 indicating that perceive product quality and perceived value can account for 53.8% of the variance in the customer satisfaction. Additionally, the R2of the Brand Loyalty was found to be 0.369 indicating that Perceive Product Quality, Perceived Value and Customer Satisfaction can account for 36.9 % of the variance in the Brand Loyalty. Based on the assessment criterion suggested by Cohen (1988), 0.26 substantial, 0.13 moderate and 0.02 weak; both values of the R2 are considered substantial.

Table 4: Prediction Power of the Model

<table>
<thead>
<tr>
<th>Endogenous</th>
<th>R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLoyalty</td>
<td>0.369</td>
</tr>
<tr>
<td>CSatis</td>
<td>0.538</td>
</tr>
</tbody>
</table>

C. Goodness of Fit (GoF) of the Model

A global fit measure (GoF) assessment was conducted to investigate the global validation of PLS model. This measure is the geometric mean of the average variance extracted and the average R2 for the endogenous variables. The following formula is used to compute GoF.

\[ GoF = \sqrt{R^2 \times AVE} \]

Based on the results obtained, the GoF value was 0.501 which was calculated as in the following:

\[ GoF = \sqrt{(0.454 \times 0.631)} = 0.535 \]

Then, the result of the model is compared with Wetzelset al.,’s. (2009) baseline values of GoF (small =0.1, medium =0.25, large =0.36). It can be concluded that the model’s GoF measure is large and adequate of global PLS model validity.

D. Hypothesis Testing

Having established the validity and the reliability of the measurement model, the next step was to test the hypothesized relationship by running PLS algorithm and Bootstrapping algorithm in SmartPLS 2.0. As shown in Table 5, two out of the three hypotheses were supported. The structural model comprises of the hypothesized relationship between the model’s exogenous and endogenous variables. It shows how well the theoretical model predicts the hypothesized paths. The bootstrapping procedure (500 resamples) was applied to generate the path coefficients and their corresponding t-values which then enabled inferences to be made by determining the statistical significance of each path coefficient.

Table 5: Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>Path Coefficient</th>
<th>Indirect Effect</th>
<th>Standard Error a*b</th>
<th>T-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6</td>
<td>PPQ -&gt; CSatis -&gt; BLoyalty</td>
<td>0.709</td>
<td>0.567</td>
<td>0.402**</td>
<td>0.071</td>
<td>6.886</td>
</tr>
<tr>
<td>H7</td>
<td>PValue -&gt; CSatis -&gt; BLoyalty</td>
<td>0.541</td>
<td>0.567</td>
<td>0.307**</td>
<td>0.055</td>
<td>6.212</td>
</tr>
</tbody>
</table>

**p< 0.01, *p< 0.05

As indicated in Table 6, the effects of perceived quality and customer satisfaction on brand loyalty were found to be significant at the 0.05 levels of significance(β=0.299, p<0.05) (β=0.329, p<0.05) respectively. However, the effect of perceived value on brand loyalty was found not to be significant (β=0.047, p>0.05). While, the effects of perceived quality and perceived value on customer satisfaction were found to be significant at the 0.01 levels of significance(β=0.585, p<0.01) (β=0.233, p<0.01) respectively. These results supported H1 and H3. H4 and H5 as hypothesized in the study while H2 was not supported.

VI. The Mediating Effect Of The Customer Satisfaction

To test to what extent the customer satisfaction can mediate the effect of perceived product quality and perceived value on the brand loyalty; this study employed the method as suggested by Preacher and Hayes (2008). The bootstrapping analysis, as illustrated in Table 6showed that the indirect effect of perceived product quality and perceived value on the brand loyalty were significant with a t-value of 6.886(β = 0.402) and 6.212(β = 0.307) respectively. Also as indicated by Preacher and Hayes (2008) the indirect effect of PPQ and PV were 0.402, 95% Boot CI: [LL =0.030, UL = 0.496] and 0.307, 95% Boot CI: [LL =0.079, UL = 0.372] respectively do not straddle a 0 in between indicating there are mediation. Thus, it can be concluded that the mediation effect is statistically significant.
significant. In short, these results confirmed the mediating role of customer satisfaction in enhancing brand loyalty due to the perceived quality and value of the product. Hence, these results supported H6 and H7 as hypothesized in the study.

VII. Discussion And Conclusions

This study set out to examine the relationship between perceived product quality, perceived value, customer satisfaction and brand loyalty within the Malaysian mobile phone market sector. From the seven hypotheses in this study, all of them were confirmed except one (H2), indicating that the proposed model had an adequate fit. The analysis results reveal that perceived product quality of a specific mobile phone was found to have a significant positive impact on customer satisfaction and loyalty. Successful businesses define their strategy around the pursuit of quality. Marketers have to recognize the central role of perceived product quality and customer satisfaction in order to be able to anticipate brand royalty and consequently purchase behaviour. Businesses should employed strategies that put emphasis on product features and cues that will enhance customers' perceived product quality. Prior studies have found cues such as brand name, price, and objective quality information to be related to perceived product quality (Dodds, 2002; Raod&Monroe, 1989; Tsiotso, (2006). Businesses should utilize these cues to enhance customers’ perceptions of product quality. Furthermore, the widely accepted theory that there is a link between satisfaction and loyalty was supported (Bontis et al., 2007). Thus, the ability to provide a high degree of customer satisfaction services is crucial to businesses in differentiating themselves from their competitors (Lin & Wang, 2006).

However, the current finding does not support the previous assumptions (Lin & Wang, 2006; Gronroos, 2000) of direct relationship between perceived value and brand loyalty. The result implied insignificant relationship between perceived value and brand consciousness. It could be because of different market setting and product life cycles. In positive note, the current finding identifies a significant relationship between perceived value and customer satisfaction supporting the previous findings (Lin & Wang, 2006; Gronroos, 2000). Furthermore, the current study achieved the main objective when discovered significant mediating effect of customer satisfaction on the relationship between both perceived product quality, perceived value and brand loyalty. In other words, customer satisfaction enhances the influence of perceived product quality and perceived value on loyalty. Implication of the current findings proposed the importance of customer satisfaction in creating loyalty in mobile purchasing. Marketers should emphasise customer satisfaction by researching the elements that could fulfill their needs and wants. Organising marketing programs that could increase customer satisfaction is essential. It could enhance loyalty and the most important note is marketing programs creating customer satisfaction could mediate the effect of other variables such as perceived value and etc. as proposed the current findings.

In conclusion, loyalty is also a factor that may influence the choice of a mobile phone brand. The findings of this study show that perceived product quality is vital for developing brand loyalty. The statement about what drives loyalty should be understood whereby loyalty is not entirely divorced from satisfaction (Mittal & Lassar, 1998). Loyalty is built through a positive differentiation that is usually achieved by providing superior products and services. Although the current study did not found a significant role of perceived value in creating loyalty, as strongly suggested in the literatures (Lin & Wang, 2006; Gronroos, 2000), marketers should developed marketing programs enhancing perceived value. Marketing efforts creating perceived value on the other hand could influence customer satisfaction as recommended by the current findings.

References


