Using Structural Equation Modelling to Evaluate the Service Quality, Satisfaction and Customer's Loyalty in Hypermart Department Store, Bangkalan, Indonesia

By Pribanus Wantara
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Abstract - The aim of this research is to investigate the relationships among service quality, satisfaction, and customer loyalty in a department store context. The sample consisted of 198 respondents who had visited the Department store of Hypermart in Bangkalan Town Square. A structured questionnaire, with a five-point Likert scale, was used. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) were used to analyse the casual relationships between service quality, customer satisfaction, and customer loyalty and to evaluate the hypotheses regarding relationships among model constructs. All the hypotheses developed in the study were positively confirmed, reinforcing the theory and previous research on this field. The study also reveals interesting implications in service quality, satisfaction, and customer loyalty, useful to academics and practitioners. Managers will find this research helpful in better understanding these variables and their roles on their business’ performance. This study could not be generalized widely to other locations or countries.

Keywords : service quality, satisfaction, loyalty, hyper-mart department store.

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Keywords: service quality, satisfaction, loyalty, hypermart department store.

1. Introduction

Rapid changes in people's lifestyles and modern shopping trends, particularly on the middle community to the top, where shopping is no longer just to buy the products needed but also for recreational activities, also has a part in moving the retail industry. These opportunities are capitalized by the retailer with an aggressive expansion of the network of outlets/stores them. In the last five years the number of hypermarket outlets increased from 99 units in 2007 to 154 units in 2010 and predicted to rise to more than 207 units at the end of 2011. As of September 2011, estimated there more than 200 outlets in the hypermarket Carrefour Indonesia, which consists of (82 outlets as of June 2011, including supermarkets), Hypermart (59 outlets), Giant (42 outlets) and Lotte Mart (24 outlets).

Table 3: The big four hypermarkets in Indonesia

<table>
<thead>
<tr>
<th>No</th>
<th>Company Name</th>
<th>Outlet Name</th>
<th>Number of outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT Carrefour Indonesia</td>
<td>Carrefour</td>
<td>82</td>
</tr>
<tr>
<td>2</td>
<td>PT Matahari Putra Prima Tbk.</td>
<td>Hypermart</td>
<td>59</td>
</tr>
<tr>
<td>3</td>
<td>PT Hero Supermarket Tbk.</td>
<td>Giant</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>PT Lotte Shopping Indonesia</td>
<td>Lotte Mart</td>
<td>24</td>
</tr>
</tbody>
</table>

Sources: http://www.idx.co.id/

Researchers have found that one of the most important factors that affect the consumer's choice of store is service quality (Swoboda et al., 2007); for this reason it is important to understand retail service quality. According to Zeithaml, Bitner & Gremler (2009, p.111). In cases in which customer service or services are offered in combination with a physical product, service quality may also be very critical in determining customer satisfaction. Therefore, it is important to maintain high standards when interacting with customers and delivering the service-product to customers (Varley & Rafiq, 2004).

Some researchers see retail service quality as retail shops offer both a service and a product (Siu & Cheung, 2001). The best way to describe a retail business is to think of it as a continuum with products or tangible goods at one end and services or intangible goods at the other end (Varley & Rafiq, 2004). Service quality is important in every aspect of the business and it helps in creating a positive image for the retailer's brand (Swoboda et al., 2007). Therefore, customer service must be the focus of a successful retail business that has loyal customers (Paulins, 2005).

Satisfied and happy customers normally have no reason to leave. Customer satisfied is important in that customer privacy and data exchange security are issues with department store. Although prior research has investigated the effects of relationship quality on

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Customer loyalty has two meanings: long-term and the short-term loyalty. Customers with long-term loyalty do not easily switch to other service providers, while customers with short-term loyalty defect more easily when offered a perceived better alternative. This study focuses on long-term loyalty. It is beneficial for service providers to establish a relationship with customers that customers would like to retain (Liu et al., 2010).

II. Literature Review

a) Service Quality

Service quality is also has been described as a form of attitude that is formed due to the difference between customer expectations regarding a service to be received and perceptions of the service being received. Parasuraman et al. (1988) has discussed that there are five dimensions of service quality (tangibles, empathy, reliability, assurance and responsiveness). Other researchers associated service quality with the extent to which a service meets customers' needs or expectations (Dotchin & Oakland, 1994; Lewis & Mitchell, 1990).

b) Customer Satisfaction

Customer Satisfaction has been a central concept in marketing literature and is an important goal of all business activities. Customer satisfaction is defined as a customer's overall evaluation of the performance of an offering to date (Johnson and Fornell 1991). Today, companies face their toughest competition, because they move from a product and sales philosophy to a marketing philosophy, which gives a company a better chance of outperforming competition (Kotler, 2000). Overall customer satisfaction translates to more profits for companies and market share increase. The importance of customers has been highlighted by many researchers and academicians. The principal concern of marketing is to connect with customers by building a strong customer relationship in order to meet their expectations.

c) Customer Loyalty

Customer loyalty is a crucial factor in companies’ growth and their performance. Loyalty is linked with the repeat business. Thus, a customer is loyal when he is frequently repurchasing a product or service from a particular provider. Oliver defines loyalty as “A deeply held commitment to re-buy or re-patronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behaviour” (cited by Kotler, 2000).

The perceived quality from the product and the service affects customer judgement about his/her satisfaction or loyalty with the product or the service. The significance of customer loyalty is that it is closely related to the company’s continued survival and to strong future growth (Fornell, 1992). Customers that are very satisfied with a company are very likely to remain with that company that leads to future revenue for the company. It is now a widely accepted business theory that customer retention optimizes profitability; the cost of acquiring new customers is higher than the cost of retaining existing customers. Therefore, the aim of a service company is to satisfy their customers in order to stimulate them to retain and to repeat their service purchase.

Customer loyalty requires a long-term commitment from the parties in order to ensure the maintenance of a business relationship (Wilson, 1995); a commitment resulted from a positive attitude towards the other party (Morgan and Hunt, 1994). Based on these definitions loyalty has two components: a behavioral component that suggests the intention to repurchase and an attitudinal component that is based on the partner's preferences and impressions (Sheth and Millat, 2003 in Alejandro et al., 2011).

i. Relationship between Service Quality and Customer Satisfaction

In the recent past, there has been a heightened emphasis on service quality and customer satisfaction in business and academia alike. Chau and Kao (2009) found that all elements of service quality directly influence customers satisfaction. Cronin and Taylor (1992) proved service quality is an important antecedent of customer satisfaction. Spreng and Mackoy (1996) showed that higher service quality leads to higher customer satisfaction while working on the model developed by Oliver (1997). Fornell (1992) said that higher customer satisfaction is an indicator of high perceived quality. Consistent with these findings, the researchers have hypothesized the following:

Hypothesis 1: Perceived service quality has a positive effect on customer satisfaction.

ii. Relationship between Service quality and Customer loyalty

In various studies the relationship between service quality and customer preference loyalty had been examined (Boulding, Kalra, Staelin, & Zeithaml, 1993; Cronin & Taylor, 1992). In the study by Cronin and Taylor (1992) service quality did not appear to have a significant (positive) effect on repurchase intentions (in contrast to the significant positive impact of satisfaction on repurchase intention), whereas Lenka et al. (2009) also found that service quality has positive impact on customer loyalty. Therefore, following hypothesis has been proposed:

Hypothesis 2: Perceived service quality has a positive effect on customer loyalty.
Relationship between Customer satisfaction and Customer loyalty

Several authors have found a positive link between customer satisfaction and customer loyalty (Anderson & Sullivan, 1993; Bolton & Drew, 1991; Fornell, 1992). Bloomer and Kasper (1995) demonstrate that the satisfaction-loyalty relationship is not simple and straightforward as the level of elaboration on the part of the customer must act as a moderator between satisfaction and loyalty. Numerous studies in the service sector have also empirically validated the positive relationship between satisfaction and behavioral intentions such as customer retention and word of mouth (Anderson & Sullivan, 1993; Bansal & Taylor, 1999; Cronin & Taylor, 1992). Hart and Johnson (1999) have added that one of the conditions of true customer loyalty is total satisfaction. Hence, the researchers have hypothesized the following:

**Hypothesis 3:** Customer satisfaction has a positive effect on Customer loyalty.

### III. Conceptual Model

Based on the literature review, the hypothesis and measurement model are formulated for the exogenous variable and the endogenous variables as shown in Figure 1 to explain the relationships among service quality, satisfaction and loyalty.

![Figure 1: Theoretical model of the study](image)

### IV. Methodology

**a) Measures**

A structured questionnaire was used to collect data. For all variables of these researchers, the authors have used 5 point Likert scale. Service quality was measured by using 5 items/dimensions developed by Zeithaml, Berry, and Parasuraman (1996). Service quality has reported reliability is .827. Customer satisfaction was measured by using 4 items adopted from Cronin, Brady and Hult (2000) and Wang et al. (2004), and the reported reliability of this scale is above .866. To measure customer loyalty five item scale developed by Narayandas (1996) was used, and the reported reliability of this scale is .824.

**b) Data Analysis**

To assess direct and indirect (mediated) relationships among the studied variables the researchers have performed confirmatory factor analysis and structural equation modeling (Anderson & Gerbing, 1988). SPSS 16 and Amos 16.0 had been used to perform these analyses. These analyses suppose to help us to understand which model fits the data best while presenting a credible assessment on the antecedents of customer loyalty of store subscribers.

**c) Sampling and Respondent Profile**

Paper survey was distributed to customer of Hypermart Department Store. During a period of one month, 198 questionnaires were collected through a proportional sampling method. Of the respondents, 42 percent were males and 58 percent were females. The respondents can be considered as rather young: 40 percent of them were between 29 and 33 years old.

### Table 1: shows the demographics of respondents

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Category</th>
<th>Sample</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>115</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>83</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>≤18</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>19-23</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>24-28</td>
<td>61</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>29-33</td>
<td>79</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>34-38</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>39-43</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>≥44</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

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V. Results

Statistical techniques were applied to assess the reliability and validity of the survey and to obtain more clarity regarding the influence of the selected variables on customer loyalty.

a) Reliability

Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials (Babbie, 2004). According to Du Plessis (2010: 12), when calculating Cronbach’s alpha, results exceeding 0.60 will reflect the lower level of acceptability. The reliability statistics for the questionnaire are presented in Table 2.

Table 2: Reliability statistics

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality</td>
<td>0.857</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>0.813</td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>0.806</td>
</tr>
</tbody>
</table>

Source: own

It is evident from Table 2 that the reliability coefficient or alphas for the different constructs were computed using the reliability procedure in SPSS version 16. The reliabilities of all the constructs used in this study found to be above the standard set by Nunnally (1978), which is 0.70. The range of Cronbach alphas shows the reliability of the variables of research ranges from $\alpha = 0.806$ to $\alpha = 0.857$; mean scores had been computed by equally weighting the mean scores of all the items relevant to each construct.

b) Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was conducted to assess the construct validity of the model. Convergent validity is confirmation of the existence of a construct determined by the correlations exhibited by independent measures of the construct. To assess convergent validity, the loading estimates and construct reliability were investigated. In AMOS 16, convergent validity can be assessed and tested using the measurement model by determining the significant t-value of each item’s estimated pattern coefficient on its posited underlying construct factor. (Anderson & Gerbing, 1988).

Confirmatory factor analysis (CFA) was performed using AMOS 16 to measure the unidimensionality, convergent and discriminant validity. The CFA results provide overall fit indices ($\chi^2 = 72.201$, chi-square degree of freedom = 234, RMSEA (root mean square error of approximation) = 0.029, GFI (goodness-of-fit) = 0.947, AGFI (adjusted goodness-of-fit) = 0.922, CFI (comparative fit index) = 0.892, and NNFI (nonnormed fit index) or TLI = 0.978. Table 3 shows the fit statistics results.

Table 3: Fit Statistic Results

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>Pvalue</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
<th>NNFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>72.201</td>
<td>0.176</td>
<td>0.029</td>
<td>0.947</td>
<td>0.922</td>
<td>0.978</td>
<td>0.891</td>
</tr>
<tr>
<td>Tangible</td>
<td>2,306</td>
<td>0.316</td>
<td>0.028</td>
<td>0.994</td>
<td>0.970</td>
<td>0.996</td>
<td>0.999</td>
</tr>
<tr>
<td>Reliability</td>
<td>6,849</td>
<td>0.232</td>
<td>0.043</td>
<td>0.987</td>
<td>0.960</td>
<td>0.972</td>
<td>0.986</td>
</tr>
<tr>
<td>Responsibility</td>
<td>12,520</td>
<td>0.020</td>
<td>0.078</td>
<td>0.976</td>
<td>0.929</td>
<td>0.812</td>
<td>0.906</td>
</tr>
<tr>
<td>Assurance</td>
<td>3,795</td>
<td>0.150</td>
<td>0.067</td>
<td>0.991</td>
<td>0.955</td>
<td>0.958</td>
<td>0.986</td>
</tr>
<tr>
<td>Empathy</td>
<td>7,518</td>
<td>0.185</td>
<td>0.051</td>
<td>0.985</td>
<td>0.954</td>
<td>0.978</td>
<td>0.989</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>2,260</td>
<td>0.323</td>
<td>0.026</td>
<td>0.994</td>
<td>0.971</td>
<td>0.997</td>
<td>0.999</td>
</tr>
<tr>
<td>Loyalty</td>
<td>5,096</td>
<td>0.078</td>
<td>0.089</td>
<td>0.987</td>
<td>0.937</td>
<td>0.917</td>
<td>0.972</td>
</tr>
</tbody>
</table>

Source: own

As it can be seen from table 3, Goodness-of-fit of the final model indicated “reasonable or good fit” or RMSEA = 0.029. Hair et al., (2009) suggested $0.05 < \text{RMSEA} < 0.08$ is for “good fit”. In this study, CFI (comparative fit index) = 0.891 demonstrates reasonable fit in this study. Hu and Bentler (1999)
suggested that a rule of thumb for the CFI and the incremental indexes is that values greater than roughly 0.90 may indicate reasonably good fit of the researcher’s model. The GFI was the first standardized fit index (Joreskog & Sorbom, 1999). GFI = 1.0 indicates perfect model fit. Therefore, a GFI = 0.947 indicate reasonably good fit of the researcher’s model in this study. The AGFI of 0.922 indicate reasonably good fit of the researcher’s model. The NNFI (non-normed fit index) or Tucker-Lewis Index has been recommended by Bentler and Bonett (1980). Hair et al., (2009) recommended a value of 0.90 or better for good fit. Thus, an NNFI = 0.978 for this study implies good fit. From the above goodness-of-fit evaluation, confirmatory factor analysis for the final measurement model reasonably supported the model’s fit.

VI. MEASUREMENT MODEL

a) Structural Equation Model (SEM)

A structural model is fit to the service quality, customer satisfaction and loyalty data according to the model structure given in Figure 2. Three paths (service quality to satisfaction, service quality to loyalty and satisfaction to loyalty) are found to have significant positive standardized path coefficients and not dropped sequentially based on Wald tests. The goodness of fit indices for the final structural model, shown in the bottom part of Table 4, suggest a good fit to the data: small ratio of chi-square to degree of freedom (< 2), great values of GFI, AGFI, CFI, NFI (> 0.9) and RMSEA values (< 0.05).

Structural equation modeling (SEM) was used to test the hypothesized relationships in the proposed model shown in Figure 1. The structural equation modeling technique enables the simultaneous estimation of multiple regression equations in a single framework. The model was estimated using maximum likelihood method. Browne and Cudeck (1992) specified that a model whose root mean square error approximation (RMSEA) is less than 0.05 has a close fit; an RMSEA of less than 0.08 has a good fit. Chin and Todd (1995) suggest that the GFI and NFI should be above 0.90 and the AGFI above 0.80 for a good fit. The CFI should also be above 0.90 (Bentler, 1990). The Table 3 lists the recommended values of various measures of model fit.

Table 4 : Goodness-of-Fit Results of the study

<table>
<thead>
<tr>
<th>Goodness-of-fit statistics</th>
<th>Values</th>
<th>Desired range of values for a good fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square test</td>
<td>χ²</td>
<td>72.201 (p &gt; .05)</td>
</tr>
<tr>
<td>Absolute fit measures</td>
<td>Df</td>
<td>≥ 0</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-square / degrees of freedom ratio</td>
<td>χ² / df</td>
<td>1.165 (2 to 5)</td>
</tr>
<tr>
<td>Goodness of fit index</td>
<td>GFI</td>
<td>.947 (&gt; .90)</td>
</tr>
<tr>
<td>Root mean square error of approximation</td>
<td>RMSEA</td>
<td>.029 (&lt; .08)</td>
</tr>
<tr>
<td>Incremental fit measures</td>
<td>AGFI</td>
<td>.922 (&gt; .90)</td>
</tr>
<tr>
<td>Adjusted good-of-fit index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tucker-Lewis index</td>
<td>TLI</td>
<td>.978 (&gt; .90)</td>
</tr>
<tr>
<td>Comparative fit index</td>
<td>CFI</td>
<td>.982 (&gt; .95)</td>
</tr>
<tr>
<td>normed fit index (NFI)</td>
<td>NFI</td>
<td>.919 (&gt; .90)</td>
</tr>
</tbody>
</table>

Source : own

In accordance with the parameter estimates shown in Figure 2, service quality is positively and significantly related to satisfaction (coefficient=0.52, p(=0.000)<0.05), this finding as proposed in H1. In the same way, as proposed in H2, service quality has a positive and significantly effect on customer loyalty (coefficient=0.48, p(=0.001)<0.05). The analysis results also yield that satisfaction relates positively and significantly with loyalty (coefficient=0.36, p(=0.000) <0.05), this finding as proposed in H3.
Therefore, this hypothesis is supported, and the result is consistent with the findings of (Anderson & Sullivan, 1993; Bolton & Drew, 1991; Fornell, 1992). Based on the research results, the service quality of Hypermart department store significantly affects customer satisfaction and customer loyalty, and customer satisfaction has strong impact on customer loyalty for the sample. Therefore, firms have to specifically focus on these factors in order to build a long-term and mutually profitability relationship with a customer and create loyalty as competitive advantages in the market.

### VII. Conclusions

This research study was conducted to find the impact of service quality, customer satisfaction and loyalty on customer’s loyalty in Hypermart Department Store of Bangkalan-Indonesia. Research indicates that service quality, and customer satisfaction are the important factors that can increase the loyalty of a customer. The results of this study show that the service quality of Hypermart department store is a direct path and is a factor that significantly affects the customer satisfaction. The findings supports H1 and the result are consistent with the findings of Johnson, Andreesen, Lervik & Cha, (2001); and Chau VS, Kao YY (2009). For hypothesis 2, the results indicate that the service quality of Hypermart department store is a direct path and is a factor that significantly affects the customer loyalty. Therefore, this hypothesis is supported, and the result is consistent with the findings of (Johnson, 1993; Bolton & Drew, 1991; Fornell, 1992). Based on the research results, the service quality of Hypermart department store significantly affects customer satisfaction and customer loyalty, and customer satisfaction has strong impact on customer loyalty for the sample. Therefore, firms have to specifically focus on these factors in order to build a long-term and mutually profitability relationship with a customer and create loyalty as competitive advantages in the market.

### VIII. Recommendations for Future Research

This research can be replicated in the same manner with a large sample size and more variety of variables affecting the loyalty of a customer towards its store. As this research concludes that customer satisfaction are important in store sector of Indonesia hence future researches can be conducted on how store can introduce better customer satisfaction for their loyalty customers. Although the SEM provides a good fit to the hypothesized model, future research could use a different design to examine the causal relationships.
posed by the theories, such as to explore other antecedents on loyalty, and should be conducted in other industries and other countries or different global regions.

References Références Referencias


the relevance of service in building a strong retail brand', *Managing Service Quality*, 17 (4), pp. 428-448.


