Customer Value Co-creation Behavior and Customer Loyalty: a Case Study in The Mobile Application Industry

Mariyudi
Department of Management
Universitas Malikussaleh
Aceh, Indonesia
mariyudi@unimal.ac.id

Faisal Matriadi
Department of Management
Universitas Malikussaleh
Aceh, Indonesia
faisalmatriadi@gmail.com

Abstract—This research analyzes the relationship between value co-creation behavior, perceived service quality, customer satisfaction and customer loyalty, using a Service-Dominant logic (SD logic) theoretical framework. Using structural equation modeling, the study examines a sample of 350 online product communities in Indonesia. The empirical analysis provides conclusive evidence that the value co-creation behavior has an influence on the perceived service quality and customer satisfaction. It also confirms that perceived service quality and customer satisfaction have an influence on customer loyalty. To ensure an effective value co-creation process, firms need to motivate their customers to participate.

Keywords—value co-creation; service quality; satisfaction; loyalty

I. INTRODUCTION

Some recent unpredictable changes in technology have revealed complexity in the business environment [1],[2]. However, despite the variety of choice regardless industry, companies are often struggling to create products that are appealing enough to fulfill customers’ needs, therefore, increase loyalty and consequently profits [3],[4]. To achieve such level of product’s success, companies have to be constantly innovative [5].

Companies have to look for resources of new ideas outside the boundaries of their firms [6],[7]. Therefore, involving target customers in a value generation process have been recently gaining its importance as a new marketing strategy [8],[9]. Such new marketing strategy, which can lead to innovation, consumer’s loyalty and profitability, refers to co-creation. Consumers are seen as a key resource in the process of value creation and innovation of a company [10].

The impact of value co-creation in business activities on consumer’s behavior is growing interest to both, academics and marketers. The importance of value co-creation in service-based organizations differs from manufacturing industries [11]. The difference lies in effect associated with consumer-related outcomes such as customer loyalty [12],[11], customer satisfaction [12],[11],[13], and firm-related outcomes such as firm performance [14] increasing technical quality and functional quality of firm’s activities [10],[15] and sustainability of service organizations [16],[17].

Knowledgeable, networked, empowered consumers are no longer sheer responders to organization’s created value. But rather active value creators [18],[19],[16] and therefore, understanding the business value co-creation activities between both suppliers and consumers is of great importance to research [20],[21].

There is mounting evidence showing that consumers are displeased with various market offerings. This may be caused by the inability of suppliers to meet specific consumer requirements [16]. This is evident in the increasing number of mobile application on hand-held devices that offers genuine and differentiated solutions [22]. Seeing that, there is a growing agreement that companies engaged in service business activities need to consider value co-creation to maintain relevance to consumers’ needs [23].

Hence, on the theoretical significance of this study is the examination of the impact of service value co-creation impact from a customer perspective. Customer value co-creation behavior has been generally examined at the conceptual level [18] however, empirical studies examining this relationship at the service level are limited. Hence, empirical investigation of the outcome of consumer’s value co-creation involving service activities adopted in this study contributes to the existing body of the knowledge on service value co-creation behavior. The purpose of this study is to investigate the impact of service value co-creation on customer loyalty in Indonesia mobile application industry.

II. BASIC THEORY AND HYPOTHESES DEVELOPMENT

A. Co-creation behaviors in service systems

Value co-creation is fundamentally a relational perspective that emphasizes contextual frames within which the enmeshed consumers participate in core behaviors to use resources for mutual benefits [24],[18]. The latter is also referred to as resource integration, representing in this case consumer efforts in interacting with and using resources to improve their well-being [25].
Thus, such participation behaviors are key task-related activities that enable the customers to fulfill their fundamental behavioral responsibilities in service exchanges. In line with [25],[18] and [26], refers to such core task behaviors as in service co-creation behaviors. It further defines them as customers participation in, and contribution to, task-related resource integrations that manifest their effectiveness in a service system.

Value co-creation behavior is a means by which customers interact with others so as to adjust to a specific environment and orchestrate resources in a service system. A service system is an arrangement of resources connected to other systems by value propositions [27]. Recently, [18] proposed a comprehensive concept of value co-creation behavior (VCB) that encompasses a variety of consumer behaviors, which comprises participation behavior and citizenship behavior.

B. Perceived quality

Many researchers have developed the study of a broad concept of quality which focuses on the integration of different disciplines [28]. However, in previous research, quality has not been given a universal definition [29],[30],[31]. Service Quality is defined as the consumer’s judgment about a service provider's overall level of excellence [32].

Perceived value is the inclusive judgment about the balance between what is rewarded and what is sacrificed during customer consumption experience, and Customer value focuses on both perceived monetary and non-monetary price [33]. Customers create value from their relationships and networks, and they take on the important role of value actualization as value co-creator. Also, [34] point out that the creation of relational value is a significant factor that affects customer satisfaction.

Perceived quality is one of the most significant factors that affect customer satisfaction and behavior intention [35],[36],[37] and many researchers have studied the relationship between perceived quality and satisfaction [29]. In the field of service industry, the importance of perceived quality as relates to the service provider’s success or failure has been well studied [38],[39],[40],[35]. Customer commitment to a service is a key to customer retention, thus, customer commitment and loyalty has been actively studied as one of an important concept in the business field [41]. Previous research have established that perceived quality is the antecedent of both customer loyalty and behavior intention [41],[35].

C. Customer satisfaction

Satisfaction is defined as an evaluation of the surprise inherent in a product acquisition and/or consumption experience [42]. In other words, the definition of satisfaction is a consumer’s “pleasurable fulfillment” generated from the consumption experience [43],[44]. In addition, service satisfaction is defined as satisfaction with performance is a post-consumption evaluation of perceived quality relative to pre-purchase performance expectations about quality [45].

Even though both constructs are measured using an expectancy-disconfirmation paradigm, these two concepts are clearly separated according to the subject. Service quality is the degree to which perceived performance conforms to prior expectations. In contrast, satisfaction is an emotionally based response: pleasure and displeasure. Many previous studies have actively examined the relationship between customer satisfaction, service quality, and purchase intention. Service quality is an antecedent of customer satisfaction [46],[47],[35],[36],[48].

D. Customer loyalty

Brand loyalty, the customer’s conscious or unconscious decision, to repurchase the brand continually, has been one of the most discussed marketing concepts in the past decades [49]. This is not surprising since the crucial factor for the survival of a company is retaining current customers and making them loyal to the brand [50].

According to [43], for a long time, client’s satisfaction was the main strategic business goal. Later on, a shift in strategic business goal was done in favor of customer loyalty, criticizing the fact that satisfaction and loyalty are linked inextricably [51],[52],[53]. Moreover, brand loyalty was in the past based only on repeat purchasing, which is nowadays no longer a sufficient indicator of loyalty [52].

Loyalty, in the concept of branding, is one of the most widely interpreted concepts in the marketing literature [54]. There are many definitions of brand loyalty, but majority describe a process, revealing what a customer does to become loyal [43]. In the broader meaning, loyalty is a repeat purchasing frequency of the same brand [55]. According to [56], brand loyalty, which is a measure of the attachment that a customer has to a certain brand, shows how likely a customer switches to another brand when there is a brand’s product price or features change.

To sum up previous definitions [43] postulates the following: loyalty is described here as a deeply held commitment to re-buy or re-patronize a preferred product/service consistently in the future, thereby causing same repetitive brand or the same brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.

According to [43], there are four loyalty phases starting with a cognitive loyalty and continuing with affective, conative, and finally behavioral loyalty, which implies that attitudinal loyalty leads to behavioral loyalty.

From the above discussions, the following hypothesis is proposed:

H1: Value co-creation behavior positively influences perceived service quality.

H2: Value co-creation behavior positively influences customer satisfaction.

H3: Value co-creation behavior positively influences customer loyalty.

H4: Perceived service quality positively influences customer satisfaction.
H5: Perceived service quality positively influences customer loyalty.
H6: Customer satisfaction positively influences customer loyalty.

Thus, the conceptual model of customer loyalty in the mobile application industry setting with its respective hypothesis is represented in Figure 1.

Fig. 1. Conceptual model

III. METHODOLOGY

A quantitative online survey method was used to collect data. The single questionnaire contains two sets of data for examining the models developed. This is a single method research project. The survey method is adapted and guided by the questionnaire development process proposed by [57], that accommodates a survey with multiple objectives.

A. Procedure and sample

A web-based online survey has the advantages of being interactive, convenient, and accessible [58]. Because of the research context (i.e., convergent mobile online services-CMOS), this research study used a web-based survey where respondents could access questions through a web browser either from a PC or a mobile device. In this research, the targeted participants were CMOS users; they had a broadband connection at the premises where they accessed the survey or 3G access on their mobile phones.

In this research, the target population was online communities and the sampling frame were CMOS users who participate in online communities. Non-probability judgemental sampling and convenience sampling techniques were adopted [59].

B. Sample selection

Items to measure the variables in the conceptual model were developed using results found in the literature review. For this study, the Sampling Error Formula [60] is applied to set the required sample number to support the reliability of the study. Using this formula, four variables are considered. Applying the proportion of the sample (5 point scale, 20/80), the tolerated sampling error ($\alpha = 0.05$), and the identified confidence interval (95%), the result of the suggested ideal sample size is around 350.

C. Analysis

Structural Equation Modeling (SEM) were chosen to analyze the data collected. Statistical calculations using SPSS and AMOS enabled further analyzes. SPSS is used to administer and analyze the collected quantitative data [57]. AMOS, on the other hand, is a Structural Equation Modeling (SEM) computer package employed for confirmatory factor analysis and structural analysis [57]. SEM was used to investigate impacts and relationships between testing variables.

IV. RESULTS AND DISCUSSION

The sample in the study was collected mainly from online product communities. The sample consisted of respondents aged over 18 years old. There was a large male sample of 273 compared to a small female sample of 24. The majority of respondents achieved an undergraduate degree qualification (42.58%) and there were 61.62 single percentage respondents and 37.04 percent married respondents, while others were 1.35 percent.
There were a total of 26 questionnaires, which were eliminated due to the outliers. Deletion of cases that are outliers may also contribute to multivariate normality [61]. A total of 350 questionnaires were collected according to the sampling frame of the study. After eliminating 27 questionnaires, which were incomplete and another 26 questionnaires due to the outliers, a total of 297 samples for analysis were left.

After the transformation, all the data fell within the range of normality assumption. Nevertheless, after the skewness transformation, the kurtosis index for the data in this study fell between –1 to –6, which is within acceptable value [62]. From the observation of each item of the respective constructs based on transformed data, the results do not exhibit any nonlinear patterns. Thus, this will ensure that the overall equation is linear [62].

The reliability of the data is evaluated through coefficient alpha and composite reliability. The Cronbach alphas for all the constructs of the study range from 0.91 to 0.97. A Cronbach alpha value of 0.70 and above is generally accepted to demonstrate a high level of homogeneity with the scale [63]. Hence, the measures of this study are considered reliable and consistent.

Likewise, the composite reliability for all the constructs of the study range from 0.91 to 0.98. A composite reliability value of 0.70 and above is generally the accepted norm [63]. The factor loading indicates that all the items in the respective constructs fall above the recommended value. It ranges from 0.731 to 0.993. The factor loading above 0.50 can be considered as a good factor loading. [62].
C. Structural model

The structure model indicates that the results fall within the recommended tolerance levels. The absolute fit indices of GFI (0.947) and the RMSEA (0.015) indicate a good fit. The incremental fit indices of AGFI (0.926), TLI (0.964), and CFI (0.965) also indicate a good fit.

TABLE III. COMPARISONS OF GOODNESS-OF-FIT INDICES OF SEM MODELS

<table>
<thead>
<tr>
<th>GOF Indices</th>
<th>Criterion Guidelines</th>
<th>SEM Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square ($^2$)</td>
<td></td>
<td>441.372</td>
</tr>
<tr>
<td>Probability</td>
<td>$&gt;0.65$ (Jöreskog and Sorbom 1992)</td>
<td>1.927</td>
</tr>
<tr>
<td>Absolute fit measures</td>
<td>GFI &gt;0.80 (MacCallum and Hong 1997)</td>
<td>0.947</td>
</tr>
<tr>
<td></td>
<td>RMSEA &lt;0.10 (Steiger 1990)</td>
<td>0.015</td>
</tr>
<tr>
<td>Normed chi-square</td>
<td>&lt;3 (Hair et al. 2010)</td>
<td>1.984</td>
</tr>
</tbody>
</table>

Incremental fit measures

| TLI             | 0.964     |
| GFI             | >0.90 (Gefen and Anderson 1992) | 0.965 |
| Parsimony fit measurement | GFI >0.80 (MacCallum and Hong 1997) | 0.926 |

D. Hypotheses testing

According to the SEM, the model is confirmed. The tests of the hypotheses shown in Table 4. The standardized estimate ($\beta$) of the path between the Value co-creation behavior and perceived service quality (0.609), Value co-creation behavior and customer satisfaction (0.192), Perceived service quality and customer satisfaction (0.158), Perceived service quality and customer loyalty (0.478), and Customer satisfaction and customer loyalty (0.758) were significant. Therefore, Hypothesis 1, 2, 3, 5, and 6 were supported. While hypotheses 4 is not supported.

TABLE IV. TESTING THE HYPOTHESES OF THE STRUCTURAL RESEARCH MODEL

<table>
<thead>
<tr>
<th>Hypothesized Path</th>
<th>Std. Reg. Weight</th>
<th>Critical Ratio</th>
<th>Significance</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Value co-creation behavior $\rightarrow$ Perceived service quality</td>
<td>0.609</td>
<td>10.993</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Value co-creation behavior $\rightarrow$ Customer satisfaction</td>
<td>0.192</td>
<td>4.360</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H3: Value co-creation behavior $\rightarrow$ Customer loyalty</td>
<td>0.026</td>
<td>0.478</td>
<td>0.633</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4: Perceived service quality $\rightarrow$ Customer satisfaction</td>
<td>0.158</td>
<td>2.837</td>
<td>0.005</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: Perceived service quality $\rightarrow$ Customer loyalty</td>
<td>0.478</td>
<td>9.295</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Customer satisfaction $\rightarrow$ Customer loyalty</td>
<td>0.758</td>
<td>20.414</td>
<td>0.000</td>
<td>Supported</td>
</tr>
</tbody>
</table>

The results have changed the conceptual model to a SEM model, which is presented in Figure 2.

Fig. 2. SEM model

Note: *** significance at <0.001; ** significance at <0.01; # not significant
V. DISCUSSION

The results of this study show that the value co-creation behavior is a direct path and is a factor that significantly affects the perceived service quality and customer satisfaction. The finding supports H1 and H2, meaning a consistent finding with previous research studies [27,34,25,18,26].

Moreover, the result of data analysis shows that perceived service quality has a positive effect on customer satisfaction and customer loyalty. The finding supports H4 and H5, meaning a consistent finding with previous research studies [33,34,35,36,37,29,38,39,40].

Additionally, data analysis supports earlier findings that customer satisfaction have a positive effect on the customer loyalty. As such, managerial awareness of such impact is not only essential but also vital to profitability and loyalty matters.

Like the results of research model, it was seen that good service quality can lead to positive customer satisfaction and customer loyalty, and customer’s perceived quality make a stronger impact on customer satisfaction than on customer loyalty. It was also seen that higher customer satisfaction leads to higher customer loyalty.

VI. CONCLUSION

To ensure an effective value co-creation process, firms need to motivate their customers to participate. For customers with higher collectivism and power distance value orientations, more effort is required to help them visualize the economic value of their participation. Customers who perceive the relationship as durable should be more motivated to make the most of their co-creation opportunities. Facilitating the creation of relational values enhances the benefits of value co-creation behavior and produces a competitive advantage.

Because participants were predominantly Samsung users, this may be explained by participants’ gratitude toward Samsung which is renowned for gaining high loyalty and satisfaction from its customers. In this case, similar to having long-term relationships with friends and online acquaintances, more competent consumers who have a long-term relationship with the firm and are likely to become working consumers.

Finally, this finding suggests that consumers voluntarily share their experiences with other consumers. It supports that theory that User Experience Sharing behavior is to be considered as a consumer initiated value co-creation behavior and that consumers can be service providers. The empirical evidence not only supports User Experience Sharing and Co-Creative Consumers but also confirms that Theory of Planned Behavior (TPB) framework are compatible theories with Service-Dominant (SD) logic.

To enable firm-customer value co-creation, the results of this study indicate that firms who want to co-create value with customers should place their focus on facilitating consumers’ fulfillment of needs rather than exploitation of harnessing consumers’ use innovativeness. Managers should facilitate co-creative consumers’ engagement through creating channels and opportunities for nurturing and communicating value initiation opportunities.

VII. LIMITATIONS AND FUTURE RESEARCH

The sampling frame in this research is CMOS users who participate in online communities. As the data was collected from online forums, these results are subject to the limitation that all users who are members of the online community are potentially more likely to share, compared to those who do not use online communities.

The findings are limited by the scope of the research including costs and time. In future studies, offline communities and other online communities (e.g., brand communities, online gaming communities, non-profit communities, open innovation communities, social networking communities, and second life, etc.) can be used to enhance the generalisability of the two proposed theoretical models.

REFERENCES


