The Factors Influencing Local Coffee Shop Customers’ Satisfaction in the 4.0 Industry Era

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ABSTRACT
Customer satisfaction is the opinion of consumers with regards to how the performance of a product or service meets their expectations. Generally, successful businesses highly care about customer satisfaction as profit. Therefore, this study aims to analyze the effects of: (1) perceived quality, (2) price, (3) industrial application 4.0, and (4) products innovation on customer satisfaction in the local coffee shop business in the Special Region of Yogyakarta. The data were collected using online questionnaires sent through direct message on Instagram account of each customer posting a photo with a tag or a hashtag from one of the 31 local coffee shops whilst they were enjoying a cup of coffee drink. All customers had the same opportunity to be sampled according to a representative proportion at each local coffee shop. The determination of the minimum sample used was 165 respondents. The samples analyzed were 173 respondents collected from 450 questionnaires completed by customers in which only 176 questionnaires were returned, and three questionnaires happened to be outliers that needed to be eliminated. The data were analyzed using the Structural Equation Modeling (SEM) provided in the AMOS application. The results indicated that customer satisfaction was positively influenced by perceived quality, industry 4.0 implementation, and products innovation, while price negatively affected customer satisfaction. It is highly recommended to maintain and improve perceived quality, implement industry 4.0, develop products innovation, and consider in determining crucial prices for the local coffee shops to acquire high customer satisfaction.

Keywords: customer satisfaction, industry 4.0, local coffee shops, product innovations

INTRODUCTION
The satisfaction of the customers determines the success of a local coffee shop company. It is the ultimate goal of every business due to its potential impact on repeat buying behavior (Kim et al., 2016; Suhud et al., 2020), considering that satisfied purchasers are moreover accompanied by their willingness to recommend a product to others (Back et al., 2018). The success of the local coffee shops lately is more to be found in various regions, one of which is the Special Region of Yogyakarta, especially Yogyakarta city and Sleman regency. Based on the google maps, Yogyakarta has 30 coffee shops, Sleman has 32 coffee shops, while
Bantul and Gunung Kidul have 13 and 9 coffee shops. Yogyakarta city and Sleman regency were selected primarily based on google maps since these areas had the most local coffee shops in contrast to the opposite three regencies.

Regarding customer satisfaction, perceived quality has a pivotal role as evidence of customers’ perceptions of a product or service. Customers interpret quality through a product or service that is described and identified by the differences and the advantages of similar products and services (Han & Ryu, 2012), so the primary hypothesis can be noted as follows:

H1: Customer satisfaction is positively influenced by perceived quality.

The perception of product quality is essential aspect for consumers, and use price as an indicator of quality (Asyani et al., 2020). Price is also the element of how much money consumers spend to buy the product to fulfill their needs and desires (Anjani et al., 2019). It is further reported by Miswanto & Angelia (2017); Kartikasari et al. (2018) that customer satisfaction also relies on the reasonableness of price.

Customers will be satisfied on the off chance that: (1) the price is lower, (2) based on the food and beverage goods, (3) according to the costs brought about by the company, or (4) concurring to the taste of food and drinks. In reality, price is reflected within the quality perceived by customers through evaluations that have been administered at the time of figuring out the perceived value after the purchase (Tu et al., 2012). From this explanation, the second hypothesis can be expressed as follows:

H2: Customer satisfaction is negatively affected by price.

The adoption of industry 4.0 influences customer satisfaction (Jovanovski et al., 2019). Adjusting the way in the industrial era 4.0 is critical for business activities or companies to generate production that is a whole lot greater efficient and higher product quality with products that can adjust to the taste of consumers. Thus, business minded people nowadays are applying the concept of industry 4.0 (Isaskar et al., 2019; Yin et al., 2018). According to Stock & Seliger (2016) industry 4.0 has a major influence on business by the development of smart factories, smart products, and smart services. Following this interpretation, the third hypothesis is cited as follows:

H3: The implementation of industry 4.0 positively influences customer satisfaction.

Product innovation is another aspect that also affects customer satisfaction (Rubera & Kirca, 2017). Innovation in products means observing customers seek out and satisfy with something associated with goods, services, or ideas that customers by no means feel before (Han et al., 2018). In this regard, the fourth hypothesis can be referred to as follows:

H4: Customer satisfaction is positively influenced by product innovation.

Based on the above aspects, the objectives of this study are: (1) to find out the effect of perceived quality on customer satisfaction, (2) to discover the effect of price on customer satisfaction, (3) to know the implementation of industry 4.0 on customer satisfaction, and (4) to search
out the effect of products innovation on customer satisfaction. This research has a different study from the previous research and there is a novelty value for knowledge, especially the local coffee shop business, since this research was conducted in an era of industrial revolution which makes it different from the prior research.

**METHODS**

**Data Collection**

The research area was determined purposively. There were 30 coffee shops in Yogyakarta, 32 coffee shops in Sleman, 13 coffee shops in Bantul, 9 coffee shops in Kulonprogo, and 4 coffee shops in Gunung Kidul. Yogyakarta and Sleman were selected based on the google maps since these two areas have more local coffee shop points than the other three districts. The total number of research locations was 31 local coffee shops. These places that were used for the sampling were chosen in a representative manner from the total number of local coffee shops, namely 15 shops in Yogyakarta and 16 shops in Sleman. These selected ones in each region were sorted based on the number of Instagram followers of each local coffee shop. Based on the sampling technique, all customers had the same opportunity to be sampled according to the proportions represented by each local coffee shop. One hundred and sixty-five respondents were drawn from thirty-three indicators multiplied by five to assess the minimum sample used. The samples examined in this study were 173 questionnaires. Those numbers were the results of four hundred and fifty online questionnaires that had been dispatched to customers, in which there were solely one hundred and seventy-six turned in, and three other questionnaires happened to be outliers that had to be written off.

**Data Analysis**

Perceived quality is the perception of the consumers towards the entire products or service, in the other hand, price is the value determined by the parties involved to get the benefits and the value of a product. The forefront of industry 4.0 is a trend in the industrial world that is implemented through smart factories, smart products, and smart services, and products innovation means that observing customers to find and satisfy them by providing products that they never feel before. The variables of perceived quality, price, industry 4.0 implementation, product innovation, and customer satisfaction consisted of 33 indicators, all of which were written in a list of question items in an online questionnaire. Each questionnaire item was evaluated by employing a Likert scale of 1 to 5.

The validity test in this research applied the confirmatory factor analysis on each variable, in which if the factor loading value is higher than 0.30, it can be said to be valid. The reliability test used was the construct reliability. If the value of the construct reliability of more than 0.6, it can be stated that the data is reliable. The formula used for the construct reliability is as follows:

$$CR = \frac{(\Sigma \text{Standard loading})^2}{(\Sigma \text{Standard loading})^2 + \Sigma \epsilon_j}$$

Meanings:

CR = Construct Reliability

Ej = Measurement Error
The respondents' characteristics were investigated with the aid of using descriptive statistics, while the hypothesis testing used the Structural Equation Modeling (SEM) with the assistance of the AMOS application, which was seen from the probability value. The probability value (α) applied in this study was 5% or 0.05. SEM assumption tests were carried out to determine the requirements met, namely normality, multicollinearity, and outlier tests. The Goodness of Fit Test was used in the SEM analysis to test the suitability of the model. The framework for testing the hypotheses using the Structural Equation Modeling (SEM) can be seen in Figure 1.

**RESULTS AND DISCUSSION**

**Validity Test and Reliability Test**

The research findings showed that the loading factor value of each indicator was over 0.30. It can be emphasized that the overall indicators had a significant relationship with the construct; therefore, all indicators were assumed to be valid. Each construct had a construct reliability value of more than 0.60; thus, all indicators used in this study were reliable. Validity and reliability tests can be seen in table 1.

**Table 1. Validity Test and Reliability Test**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Loading Factor</th>
<th>Description</th>
<th>Construct Reliability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PQ1</td>
<td>0.812</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PQ2</td>
<td>0.787</td>
<td>Valid</td>
<td>0.8209</td>
<td>Reliable</td>
</tr>
<tr>
<td>PQ3</td>
<td>0.732</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>0.814</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>0.803</td>
<td>Valid</td>
<td>0.819</td>
<td>Reliable</td>
</tr>
<tr>
<td>P3</td>
<td>0.709</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN1</td>
<td>0.707</td>
<td>Valid</td>
<td>0.838</td>
<td>Reliable</td>
</tr>
<tr>
<td>IN2</td>
<td>0.857</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN3</td>
<td>0.821</td>
<td>Valid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1. The Research Framework**
Normality Test, Multicollinearity Test, and Outlier Test

A critical ratio value of 1.609, located between -2.56 ≤ c.r ≤ 2.56, was presented in the normality test results, so it is said that the multivariate data was normal. The results of the multicollinearity test showed the covariance matrix value of 1.02. This value was away from number 0. Therefore it meant that there was no multicollinearity problem in the data. The value accumulated based on the chi-square value at 33 degrees of freedom (the number of indicator variables) at the level of p <0.001 was 63,870. The outlier test results in this research denoted that the value of mahalanobis distance for each indicator was <63.870. Hence there was no multivariate outlier in this study.

The Characteristic of the Respondents

The characteristics of the respondents who consume coffee drinks in a local coffee shop in the Special Region of Yogyakarta based on gender are dominated by men, aged 17-27, with an income of more than IDR 2,000,000, and students as well as have single status. The complete information about the characteristics of the respondents can be found in Table 2.

### Table 2. The Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>68.2</td>
</tr>
<tr>
<td>Female</td>
<td>31.8</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>17 – 27</td>
<td>83.8</td>
</tr>
<tr>
<td>28 – 38</td>
<td>15.6</td>
</tr>
<tr>
<td>39 – 49</td>
<td>0.6</td>
</tr>
<tr>
<td>Youngest</td>
<td>17</td>
</tr>
<tr>
<td>Oldest</td>
<td>49</td>
</tr>
<tr>
<td>Average</td>
<td>24</td>
</tr>
<tr>
<td>Income:</td>
<td></td>
</tr>
<tr>
<td>&lt; IDR 999,999</td>
<td>10.4</td>
</tr>
<tr>
<td>IDR 1,000,000 – IDR 1,999,999</td>
<td>27.2</td>
</tr>
<tr>
<td>IDR 2,000,000 – IDR 2,999,999</td>
<td>24.3</td>
</tr>
<tr>
<td>IDR 3,000,000 – IDR 3,999,999</td>
<td>9.8</td>
</tr>
<tr>
<td>IDR 4,000,000 – IDR 4,999,999</td>
<td>7.5</td>
</tr>
<tr>
<td>IDR 5,000,000 – IDR 5,999,999</td>
<td>8.1</td>
</tr>
<tr>
<td>IDR 6,000,000 – IDR 6,999,999</td>
<td>1.7</td>
</tr>
<tr>
<td>IDR 7,000,000 – IDR 7,999,999</td>
<td>2.9</td>
</tr>
<tr>
<td>IDR 8,000,000 – IDR 8,999,999</td>
<td>1.7</td>
</tr>
<tr>
<td>IDR 9,000,000 – IDR 9,999,999</td>
<td>0.6</td>
</tr>
<tr>
<td>&gt; IDR 10,000,000</td>
<td>5.8</td>
</tr>
<tr>
<td>Occupations:</td>
<td></td>
</tr>
<tr>
<td>Civil Servants</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Based on table 2, the wide variety of customers drinking coffee in the local coffee shop was dominated by men with 68.2% compared to women who were only 31.8%. Generally, coffee drinks are more identically viewed as men’s drinks, while women who visit the local coffee shops are more likely to order non-caffeine drinks (Solikatun et al., 2015).

Young people seemed to dominate in consuming coffee drinks in the local coffee shops in Table 2. Hanging out or talking with friends simply to discuss their job or campus assignments in the local coffee shop was the common activity youngsters often do. Coffee drinks, which initially only had black coffee variants, now have dozens of variants. Black coffee, which was identically recognized as the type of drink for older people appears to be innovating into various coffee variants with sweet flavors such as cappuccino, mochaccino latte, which then were favored by the youth.

There were more respondents with an income that is higher than IDR 2,004,000 (above the provincial minimum wage for the Special Region of Yogyakarta) than those with other incomes based on table 2. Those customers have more than enough money or earnings to meet more expensive needs, such as enjoying coffee drinks at a local coffee shop.

As it may be seen in table 2, the percentage of the kinds of occupations of the customers showed that college students of 41.1%, general employees of 30.1%, and entrepreneurs of 18.5%, indicating that these three types of occupations enjoy coffee drinks more in the local coffee shops than any other occupations. It is because enjoying coffee drinks in coffee shops becomes a part of the urban lifestyle currently, especially from the three types of work to create certain images through drinking coffee. Moreover coffee shops are also used as a place to hold discussions forums, or just to spend spare time after work.

The education level of the local coffee consumers was mostly high school graduates with 58.4%. The percentage includes the students who are still studying at the university. Furthermore, the second level of education was the bachelors with 36.5%. The level of education can represent a mindset so that the acceptance of a
product is more selected based on the respondents' educational background (Cheah & Phau, 2011) and in fact, the Special Region of Yogyakarta is a vicinity that earned the title as the city of students.

Based on the references in table 2, the percentage of the single respondents was 86.7%. It was more than the respondents with the married status (11.6%) or divorced people (1.7%). The married or divorced respondents will reconsider their expenses more than the single ones merely to enjoy food and drinks, such as having a coffee at a nearby coffee shop (Ningrum et al., 2019).

**Testing the Hypothesis**

The hypothesis test outcomes showed that perceived quality, price, industry 4.0, and product innovation directly affected customer satisfaction. The details can be seen in table 3. In this regard, table 3 shows that the perceived quality positively influenced customer satisfaction. The meaning that, if the perceived quality increases or gets better at 1%, it will increase customer satisfaction by 3.07%. Price had a negative effect on customer satisfaction at a significance level of 5%. It means that if the price of the coffee drink is expensive or the local coffee shop rises the price by 1%, it will reduce customer satisfaction by 1.2%. Conversely, if the price decreases by 1% or less, then customer satisfaction can increases by 1.2%. The adoption of industry 4.0 concept and product innovation will significantly increase the satisfaction of the customer with 5% level of significance. It means that, if each of the adoption of industry 4.0 concept and product innovation increase by 1%, customer satisfaction can increase by 1.91% and 1.66% respectively.

**Table 3. The Structural Model Assessment**

<table>
<thead>
<tr>
<th>Hypothesized Relationships</th>
<th>Path Coefficient</th>
<th>S.E.</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Quality → Customer Satisfaction</td>
<td>0.307***</td>
<td>0.072</td>
<td>4.26</td>
</tr>
<tr>
<td>Price → Customer Satisfaction</td>
<td>-0.12**</td>
<td>0.054</td>
<td>2.22</td>
</tr>
<tr>
<td>Industry 4.0 → Customer Satisfaction</td>
<td>0.191**</td>
<td>0.075</td>
<td>2.54</td>
</tr>
<tr>
<td>Products Innovation → Customer Satisfaction</td>
<td>0.166**</td>
<td>0.064</td>
<td>2.59</td>
</tr>
</tbody>
</table>

Source: Primary Data Analysis (2020)

Note:

Goodness-of-fit statistics of the structural model: $\chi^2 = 5299$, df = 477, $p < 0.001$, $\chi^2$/df = 1.347, RMSEA = 0.045, CFI = 0.925, IFI = 0.934, TLI = 0.925, *** $< 0.01$, ** $< 0.05$ t-table 5% = 1.654, t-table 10% = 1.286

**The Effect of Perceived Quality on Customer Satisfaction**

Based on the table 3 perceived quality had a positive and significant effect on customer satisfaction. It will increase the satisfaction of the local coffee shops' satisfaction by 3.07% when the perceived quality improves. Vice versa, if perceived quality declines, it will reduce customer satisfaction by 3.07%.

The findings of testing hypothesis follow the research conducted by Back et
which argued that perceived quality significantly affects customer satisfaction. The research carried out by Ranjbarian et al. (2012) also showed that one of the aspects that affect customer satisfaction is perceived quality. There are two perceived qualities: service quality and perceived product quality (Han et al., 2018). Frank et al. (2014) expressed that perceived quality can enlarge customer satisfaction positively.

Based on the results of the research, it showed that most local coffee shops in the Special Region of Yogyakarta had great product qualities in the form of the coffee drinks that suit the desire of the customers, the consistent and maintained quality of products and services, and the fast and responsive service to requests of the customers. This led to the reason as to why the customers were satisfied when buying or ordering a cup of coffee at the local coffee shop.

**The Effect of Price on Customer Satisfaction**

Price had a negative and significant impact on customer satisfaction (table 3). It was known that the price of coffee drinks had an inversely proportional relationship to customer satisfaction. It suggested that it will reduce customer satisfaction by 1.2% if the price is raised and vice versa. Based on the most answers from the results of the online questionnaires, it could be known that the customers gave the most responses to the disagreeing point on the price of coffee drinks, which was considered to be less affordable for customers, especially most of them are students.

The hypothesis test findings did not agree with the results of study undergone by Suhud et al. (2020) where it was found that price has no major effect on customer satisfaction, though Miswanto & Angelia (2017) insisted that consumer satisfaction depends on the sensibility of price. It was acknowledged that some customers feel satisfied when the price is relatively lower, based on the company’s product items and costs, or when the taste is well worth the price. This study's results were supported by Konuk (2018); Abdullah et al. (2018) expressing that price had a substantial negative effect on customer satisfaction (Mohammad Haghighi, 2012; Runtunuwu et al., 2014).

It was known from the study findings that customer satisfaction was built as the results of the affordable price of the coffee drinks, the quality of coffee drinks that was worth the price, and the compatible price of coffee drinks to other similar drinks. However, the customers will feel dissatisfied if the price of coffee drinks is expensive, does not match the quality, and unable to compete.

**The Effect of the Implementation of Industry 4.0 on Customer Satisfaction**

There was a positive and significant effect of the application of industry 4.0 on customer satisfaction (table 3). Based on the study findings, it is believed that when a local coffee shop implements industry 4.0 in the form of utilizing sophisticated technology, for example, for roasting coffee, sending information automatically, as well as
using the online services, it will increase customer satisfaction by 1.91%. In contrast, if a local coffee shop does not adopt industry 4.0, it can decrease customer satisfaction by 1.91%.

The hypothesis test results were in line with the research results carried out by Hariguna et al. (2019) that the adoption of industry 4.0 could make it easier for buyers to do transactions. The existence of this convenience led to customer satisfaction. Choshin & Ghaffari (2017) claimed that the utilization of industry 4.0 in companies plays a prominent role in identifying, obtaining, maintaining, and providing customer satisfaction. The high-quality implementation of industry 4.0 establishes economic, social, and functional values. These two key factors play a notable role in achieving customer satisfaction (Prebensen & Xie, 2017; Wang et al., 2016; Woo, 2019; Zehir & Narcikara, 2016).

The research results proved that the majority of local coffee shops in the Yogyakarta Special Region had implemented the industry 4.0. Industrial use 4.0 includes sophisticated technology for roasting coffee hence the coffee roasting process could work automatically and be able to improve the level of maturity of coffee beans. The implemented of industry 4.0 in local coffee shops also includes digitalization, such as automatic messages delivery in the form of promos and discounts of the coffee drinks to the customers, and employing the online services so that the customers could order the coffee drinks easier wherever they are, be it at home, the office, the campus, the school, and other places. All of these things could increase customer satisfaction.

The Effect of Product Innovations on Customer Satisfaction

In the table 3 product innovation positively and significantly impacted customer satisfaction for the local coffee shops in the Special Region of Yogyakarta. It indicated that when a local coffee shop innovates a product, it will increase customer satisfaction by 1.66%.

In line with the research of Wongprawmas & Spadoni (2018), it was declared that innovation would provide a better way to satisfy consumers. A manager of a corporation believes that innovation is a fundamental requirement for customers’ final satisfaction. These results confirmed the previous studies that product innovation is the main focus to gain customer satisfaction (Dries et al., 2014; Vrontis et al., 2016).

According to the research findings, most of local coffee shops in the Special Region of Yogyakarta showed how to make coffee drinks directly to the customers and allowed them to brew their own coffee with the help of barista. The coffee shop also created new variant menus for coffee drinks and applied cashless payment administration systems which could improve to customer satisfaction.

CONCLUSION AND SUGGESTION

The local coffee shop customers’ satisfaction is directly influenced by the four constructs used in this research: perceived quality, industry 4.0 implementation, product innovation, and price. The first three
constructs positively affected customer satisfaction, whereas price had the opposite effect. The results showed that the local coffee shops are suggested to keep up and enhance perceived quality, the implementation of 4.0 and product innovations, consideration in the affordability of customers in deciding the prices other than based on the product quality, the costs issued by the local coffee shops, and the prices of competitors for other drinks since it is is greatly vital to earn customer satisfaction.

REFERENCES


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