Partial correlation analysis using multiple linear regression: Impact on business environment of digital marketing interest in the era of industrial revolution 4.0

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ABSTRACT

The use of technology in business in the era of 4.0 is a difficult task for Small and Medium Enterprises (SMEs) due to lack of resources and other market problems. To attract customers to buy a product, the marketing of a product is usually influenced by various factors, such as price, product quality, and brand. In this study, the researchers analyzed the impact of price, product quality, and product brand on customer's buying interest. This research is a case study conducted in Fahmi Mandiri SMEs aiming to increase the income. The method used is multiple regression analysis and the data is collected through questionnaires distributed to the customers. The results show that the biggest partial correlation influencing customer buying interest are price of a product and product brand. The quality of a product does not affect customers' buying interest significantly, because consumers will trust the quality of a product when the product brand is known and has the right price.

Keywords: Partial Correlation Analysis, Customers' Purchasing Interest, Price, Product Quality, Brand

1. Introduction

During the past few decades, there has been tremendous efforts to learn the effects of different variables including price, quality, brand, etc. on consumers’ purchase intention (Castro & Marques, 2017; Chumpitaz et al., 2014; Kalaignanam et al., 2017). Karnreungsiri and Praditsuwan (2017), for instance, investigated the factors influencing buying behavior and buying decision process of customers and found that price was one of the influencing factors. According to Castro and Marques (2017) “there are complex interactive patterns of temporal discounting within- and between-products and that temporal discounting framework has great potential to inform research in consumer behavior and marketing”. Thus, there could be different factors influencing on a particular product, for instance, Son and Kijboonchoo (2017) reported the effect of Korean wave on the purchase intention of Korean cosmetics. Rufaidaha et al. (2018) investigated the impact of HALAL label to attract different groups of consumers while Moongvicha
(2017) considered Thai SMEs herbal cosmetics in elderly market. For most questionnaire based surveys, we need to perform an analysis of the relationship among several variables. Analysis conducted to examine research variables can be accomplished with the help of statistics. One way to analyze research variables is to use correlation analysis techniques and linear regression. Although regression analysis is related to the dependence of a variable on other variables, it does not mean that it is a causation. According to Kendal and Stuart (1961) “A statistical relationship, although strong and suggestive, but can never form a causal relationship, because the causal relationship comes from theory or other sources”. In the world of economy, linear regression analysis has been widely used to predict various economic problems in the world. 

Ślusarczyk (2018) performed a survey on factors influencing on consumer’s buying interests in selecting hospitality services. In their survey, location factors including price, service quality, and facilities had positive effects on consumers' buying interest in choosing hospitality services. In this study, location factors are the factors that influence the most on consumer’s buying interest. Based on this phenomenon, many researchers are interested in further analyzing the effects of marketing mix (i.e. product, price, promotion, location) on consumer’s buying interest (Hariharasudan & Kot, 2018). In other cases, the need for an analytical strategy in improving the economy of the community is a very important problem in the era of the industrial revolution. Socialization of marketing strategies in digital marketing to increase middle-income income communities such as the Small and Medium Enterprises (SMEs) is very necessary (Moongvicha, 2016, 2017). Because, in a few decades, technological developments facilitate all human needs and many organizations are trying to facilitate such needs (Unit Kecil Menengah - UKM or SMEs; Astiani & Sagoro, 2017; Dakhoir, 2018). SMEs play an important and strategic role in Indonesian economy which is achieving equal distribution of economic growth (Margaretha & Khairunisa, 2016). Moreover, SMEs can be used as a mainstay for the future and must be supported by conducive policies (Masrun et al., 2018). One of the important policies in supporting SMEs income is associated with marketing. However, most SMEs experience a decline in marketing. As an effect, SMEs will be experiencing bankruptcy. This happens because in marketing there are several factors that influence marketing success (Rufaidah et al., 2018). Consumer interest becomes one of the most supportive factors in marketing. Thus, an entrepreneur needs to learn the consumer’s behavior, so that the entrepreneur can evaluate and predict the consumer behavior. Consumer behavior will determine the decision-making process in purchasing. This decision-making process emerges as a result of attractiveness and buying interest (Jiang et al., 2018).

A person’s buying interest is closely related to feelings. As an example, when someone feels happy and satisfied by looking at a product or service, this will strengthen someone's buying interest (Latief, 2018; Lionora & Santosa, 2015; Masyhuri & Magnadi, 2016; Meiliani & Ferdinand, 2015; Oktaviani & Sutopo, 2014). Some factors that determine the consumer’s decision to buy a product or service, include price, product quality, and brands (Jermsittiparsert et al., 2019). Prices have a direct influence on a buying and selling transaction because consumers will always consider the price factor in the purchase transaction (Son, & Kijboonchoo, 2017). This is driven by one of the human traits namely homo economicus (Rokim et al., 2014; Saputri & Astuti, 2016). In addition to price, the product quality also greatly affects the consumer interest (Santoso et al., 2014). Consumers will feel the product has a high quality if the product can fulfill the desires and needs as what is expected or exceed the expectations (Bayuningrat et al., 2014). Besides the price and quality, brand also becomes the thing that can attract consumers (Maula & Edwar, 2014), since every product on the market has its own image in the consumers perspective which is created by marketers to distinguish the product from the competitors (Oktaviani & Sutopo, 2014). Brand image is considered as a type of assumption that appears in the consumers’ mind when considering a particular brand (Karnreungsiri, 2017). People who are satisfied with the price, quality, and certain brands will make the store as a customer (Haseeb et al., 2019).

In order to persuade the customers to become interested in purchasing a product, it is necessary to analyse the factors that influence the customer interest (Ambarwati & Dwijanto, 2015; Chumpitaz et al., 2014;
Kalaignanam et al., 2017; Simpursiah, 2015; Sundalangi et al., 2014; Zhahir & Widayanto, 2018). Some researchers have analyzed the customer interest in the form of product quality (Rusmawan, 2014), brand image (Lukman, Adree, & Setiawan, 2013; Masyhuri & Magnadi, 2016; Ratnasari et al., 2014; Setyaningrum & Wijayanto, 2014; Faradila & Soesanto, 2016), and price (Adiputra & Sutopo, 2016; Castro & Marques, 2017; Rokim et al., 2014; Amanda & Mudiantono, 2015; Anggi & Soesanto, 2016). This study will analyze the impact of the three factors of customer interest, such as price, product quality, and brand. This research was conducted at Fahmi Mandiri SMEs, particularly the businessman who sells a banana chip.

2. Methodology

The method used in this research is quantitative descriptive and survey method. The data used in this study are primary data obtained from the first source of individuals. The data was collected by using interview questionnaires commonly carried out by researchers (Umar, 2011). A total of 100 sample participants in this study were involved in this study, and all of them were the customers of the banana chips of Fahmi Mandiri SMEs. The sampling technique used in this study is non probability sampling and the sampling method uses in this study is accidental sampling. The methods of data collection in this study used questionnaires and documentation. The data analysis techniques in this study used multiple linear regression tests and classical assumption tests. Multiple linear regression analysis is used to predict how far the value of the dependent variable changes, if the value of the independent variable is manipulated (Sugiyono, 2006).

There are several classic assumption test used in this study. Firstly, the normality test. Test statistics are often used to test normal assumptions, namely the Kolmogorov Smirnov test.

\[ D = \max |S(x) - P(x)| \]

Hypothesis:

- \( H_0 \): Data spreads normally
- \( H_1 \): Data does not spread normally

If \( D < D_{(0.05)} \), then we accept \( H_0 \) meaning that data is spread normally.

Second test is multicollinearity. This assumption is only appropriate for multiple linear regression. Multicollinearity means that there is a close linear correlation between independent variables. The test statistics used in this study is the variance inflation factor (VIF) (Novalia & Syazali, 2014). The next test is the Homoscedasticity test. Homoscedasticity is a condition where the variance of each error value is constant for all values of the independent variable \( X \). However, if the range of each error value is different for all values of the independent variable \( X \), then it is called heteroscedasticity. The test statistics used to test the assumption of homoscedasticity is the Bartlet test.

\[ \chi^2 = \ln 10 \left( B - \sum dk \log s^2 \right) \]

The prevailing hypothesis in the test of variance homoscedasticity is:

- \( H_0 \): \( \sigma_1^2 = \sigma_2^2 = \ldots = \sigma_p^2 \)
- \( H_1 \): At least one set of errors is not the same

If \( \chi^2_{\text{count}} < \chi^2_{\text{table}} \), then accept \( H_0 \) meaning that various errors have homoscedasticity.
3. Data Analysis and Results

3.1 Multiple Linear Regression Analysis

We perform the multiple linear regression analysis between price \((X_1)\), product quality \((X_2)\), brand \((X_3)\), and buying interest \((Y)\) with the help of SPSS software in the analysis (Abdurrahman et al., 2018) and present the result obtained from several model equations.

3.1.1. The Multiple Linear Regression Model of \(X_1, X_2, X_3\) respect to \(Y\)

Table 1
Model 1 Multiple Linear Regression Test Results (Coefficientsa)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>8.316</td>
<td>1.975</td>
<td>4.210</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.548</td>
<td>.102</td>
<td>.449</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.186</td>
<td>.100</td>
<td>.162</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>.262</td>
<td>.091</td>
<td>.245</td>
</tr>
</tbody>
</table>

*aDependent Variable: interest in buying

According to Table 1, the regression model is obtained as follows:

\[
Y = 8.316 + 0.548X_1 + 0.186X_2 + 0.262X_3.
\]  

(1)

The significance values of \(X_1\) and \(X_2\) are 0.000 and 0.005, respectively, which indicate that the price \((X_1)\) and brand \((X_3)\) partially have positive and significant effects on the purchase intention \((Y)\). The significance value of \(X_2\) is 0.065 > 0.05, which means that the product quality would not have any significant effect on buying interest \((Y)\). Coefficient of determination (R-Square) is a value used to see the extent to which the model formed can explain the actual conditions (Lestari et al., 2019). The R-Square value from the model is equal to 0.445 which means 44.5% of customer’s buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by the price, product quality, and brand variables and the rest are described by other variables.

3.1.2 The Multiple Linear Regression Model of \(X_1, X_2\) respect to \(Y\)

Table 2
Model 2 Multiple Linear Regression Test Results (Coefficientsa)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>10.430</td>
<td>1.902</td>
<td>5.483</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.606</td>
<td>.104</td>
<td>.497</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.281</td>
<td>.098</td>
<td>.244</td>
</tr>
</tbody>
</table>

*aDependent Variable: interest in buying

Based on Table 2, the regression model is obtained as follows:

\[
Y = 10.430 + 0.606X_1 + 0.218X_2
\]  

(2)

The significant values of \(X_1\) and \(X_2\) which are 0.000 and 0.005 respectively, which mean the price \((X_1)\) and product quality \((X_2)\) partially have positive and significant effects on buying interest \((Y)\). The R-Square value of the model is 0.396, which means that 39.6% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by variables of price and product quality.
3.1.3 The Multiple Linear Regression Model of $X_1, X_3$ respect to $Y$

The significant values of $X_1$ and $X_3 < 0.05$ are 0.000 and 0.000 respectively and this indicates that price $X_1$ and brand ($X_3$) partially have positive and significant effects on buying interest ($Y$). The R-Square value of the model is 0.424, which means that 42.4% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by the price and brand variables.

**Table 3**

Table 3 Multiple Linear Regression Test Results (Coefficients\(^a\))

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>10.581</td>
<td>1.577</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.601</td>
<td>.099</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.317</td>
<td>.087</td>
</tr>
</tbody>
</table>

\(^a\)Dependent Variable: interest in buying

Based on Table 3, the regression model is obtained as follows:

$$Y = 10.581 + 0.601X_1 + 0.317X_3$$

(3)

3.1.4 The Multiple Linear Regression Model of $X_2, X_3$ respect to $Y$

The significant values of $X_2$ and $X_3 < 0.05$ are equal to 0.003 and 0.001, respectively and this meansthe product quality ($X_2$) and brand ($X_3$) partially have positive and significant effects on buying interest ($Y$). The R- Square value of the model is 0.424, which means that 42.4% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price and brand variables.

**Table 4**

Table 4 Multiple Linear Regression Test Results (Coefficients\(^a\))

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>9.278</td>
<td>2.232</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.336</td>
<td>.109</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.359</td>
<td>.101</td>
</tr>
</tbody>
</table>

\(^a\)Dependent Variable: interest in buying

According to Table 4, the regression model is obtained as follows:

$$Y = 9.278 + 0.336X_2 + 0.359X_3$$

(4)

3.1.5 The Multiple Linear Regression Model of $X_1^2, X_2, X_3$ respect to $Y$

According to Table 5, the regression model is obtained as follows:

$$Y = 11.106 + 0.026X_1 + 0.182X_2 + 0.263X_3$$

(5)
The significance values of $X_1$ and $X_3 < 0.05$ are equal to 0.000 and 0.005, respectively. Then, the price ($X_1$) and brand ($X_3$) partially have positive and significant influence on buying interest ($Y$), which means the product quality ($X_2$) does not have a positive and significant influence on buying interest ($Y$). The R-Square value of the model is 0.441, which means that 44.1% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality and brand variables.

### 3.1.6 The Multiple Linear Regression Model of $X_1, X_2^2, X_3$ respect to $Y$

#### Table 6

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
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<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) 10.264</td>
<td>1.566</td>
<td>.446</td>
<td>6.554</td>
</tr>
<tr>
<td></td>
<td>Price .544</td>
<td>.102</td>
<td>.446</td>
<td>5.318</td>
</tr>
<tr>
<td></td>
<td>Quality 2 .005</td>
<td>.002</td>
<td>.165</td>
<td>1.888</td>
</tr>
<tr>
<td></td>
<td>Brand .259</td>
<td>.091</td>
<td>.242</td>
<td>2.839</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying

Table 6 summarizes the regression model as follows:

$$Y = 10.264 + 0.544X_1 + 0.005X_2 + 0.259X_3$$  \(6\)

The significance value of $X_1$ and $X_3 < 0.05$ are equal to 0.000 and 0.006, the price ($X_1$) and brand ($X_3$) partially have positive and significant influence on buying interest ($Y$). The significance value of $X_2$ is 0.062 $> 0.05$. Moreover, the product quality ($X_2$) does not have a positive and significant influence on buying interest ($Y$). The R-Square value of the model is 0.445, which means that 44.5% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality, and brand variables.

### 3.1.7 The Multiple Linear Regression Model of $X_1, X_2, X_3$ respect to $Y$

#### Table 7

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
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<tr>
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<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant) 10.680</td>
<td>1.842</td>
<td>.452</td>
<td>5.798</td>
</tr>
<tr>
<td></td>
<td>Price .552</td>
<td>.102</td>
<td>.452</td>
<td>5.402</td>
</tr>
<tr>
<td></td>
<td>Quality .188</td>
<td>.100</td>
<td>.163</td>
<td>1.876</td>
</tr>
<tr>
<td></td>
<td>Brand 3 .007</td>
<td>.002</td>
<td>.236</td>
<td>2.771</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying

According to Table 7, the regression model is obtained as follows:

$$Y = 10.680 + 0.552X_1 + 0.188X_2 + 0.007X_3$$  \(7\)

The significance value of $X_1$ and $X_3 < 0.05$ are equal to 0.000 and 0.007, respectively. The price ($X_1$) and brand ($X_3$) partially have positive and significant influence on buying interest ($Y$). The significance value of $X_2$ is 0.064 $> 0.05$. Thus, the product quality ($X_2$) does not have any positive and significant influence on buying interest ($Y$). The R-Square value of the model is 0.441, which means that 44.1% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality, and brand variables.
3.1.7 The Multiple Linear Regression Model of $X_1, X_2, X_3$ with respect to $Y$

**Table 8**
Model 8 Multiple Linear Regression Test Results (Coefficients*)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>12.996</td>
<td>1.501</td>
<td>8.656</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.026</td>
<td>.005</td>
<td>.443</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.004</td>
<td>.002</td>
<td>.161</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>.260</td>
<td>.092</td>
<td>.244</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying

Based on Table 8, the regression model is obtained as follows:

$$ Y = 12.996 + 0.026X_1 + 0.004X_2 + 0.260X_3 $$

The significant values of $X_1$ and $X_3$ are 0.000 and 0.005, respectively. Therefore, the price ($X_1$) and brand ($X_3$) partially have positive and significant effects on buying interest ($Y$). It turns out that the significance value of ($X_2$) is 0.071 > 0.05, consequently the product quality ($X_2$) does not have any positive and significant effect on buying interest ($Y$). The R-Square value of the model is 0.441, which means that 44.1% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality, and brand variables.

3.1.8 The Multiple Linear Regression Model of $X_1^2, X_2, X_3$ with respect to $Y$

**Table 9**
Multiple Linear Regression Test Results (Coefficients*)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>13.495</td>
<td>1.827</td>
<td>7.387</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.026</td>
<td>.005</td>
<td>.448</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.186</td>
<td>.101</td>
<td>.161</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>.007</td>
<td>.002</td>
<td>.234</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying

According to Table 9, the regression model is obtained as follows:

$$ Y = 13.495 + 0.026X_1 + 0.186X_2 + 0.007X_3 $$

The significant values of $X_1$ and $X_3$ < 0.05 are 0.000 and 0.007 respectively. Thus, the price of ($X_1$) and brand ($X_3$) partially have positive and significant effects on buying interest ($Y$). The significance value of $X_2$ is 0.069 > 0.05, so the product quality $X_2$ does not have any positive and significant effect on buying interest ($Y$). The R-Square value of the model is 0.436, which means that 43.6% of the customer buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality, and brand variables. Meanwhile, the remaining 56.4% is influenced by other variables not examined.

3.1.9 The Multiple Linear Regression Model of $X_1, X_2^2, X_3^2$ with respect to $Y$

**Table 10**
Model 10 Multiple Linear Regression Test Results (Coefficients*)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>12.624</td>
<td>1.174</td>
<td>10.752</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.549</td>
<td>.103</td>
<td>.450</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.005</td>
<td>.002</td>
<td>.167</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>.007</td>
<td>.002</td>
<td>.233</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying
Based on Table 10, the regression model is obtained as follows:

\[ Y = 12,624 + 0.549X_1 + 0.005X_2 + 0.007X_3 \]  \hspace{5mm} (10)

The significant values of \( X_1 \) and \( X_3 \) are equal to 0.000 and 0.008, respectively. Then, the price of \( X_1 \) and brand \( X_3 \) partially have positive and significant effects on buying interest \( Y \). It turns out that the significance value of \( X_2 \) is 0.061 > 0.05. Thus, the product quality \( X_2 \) does not have any positive and significant effect on buying interest \( Y \). The R-Square value of the model is 0.442, which means that 44.2% of customers' buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by price, product quality, and brand variables. Meanwhile, the remaining 55.8% is influenced by other variables not examined.

### 3.1.10 The Multiple Linear Regression Model of \( X_1^2, X_2^2, X_3^2 \) respect to \( Y \)

**Table 11**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>15.402</td>
<td>1.004</td>
<td>15.334</td>
</tr>
<tr>
<td></td>
<td>Price</td>
<td>.026</td>
<td>.005</td>
<td>5.240</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>.005</td>
<td>.002</td>
<td>1.850</td>
</tr>
<tr>
<td></td>
<td>Brand</td>
<td>.007</td>
<td>.002</td>
<td>2.691</td>
</tr>
</tbody>
</table>

*Dependent Variable: interest in buying

Based on Table 11, the regression model is obtained as follows:

\[ Y = 15,402 + 0.026X_1 + 0.005X_2 + 0.007X_3 \]  \hspace{5mm} (11)

The significant values of \( X_1 \) and \( X_3 \) are 0.000 and 0.008, respectively. Then, the variable of price \( X_1 \) and brand \( X_3 \) partially have positive and significant effects on buying interest \( Y \). It turns out that the significance value of \( X_2 \) is 0.067 > 0.05, then the product quality \( X_2 \) did not have any positive and significant effect on buying interest \( Y \). The R-Square value of the model is 0.436, which means that 43.6% of the customer buying interest in Fahmi Mandiri SMEs Lampung Selatan is influenced by the price, product quality, and brand variables. Meanwhile, the remaining 55.8% is influenced by other variables not examined.

### 3.2 Test of Classical Assumptions

#### 3.2.1 Normality test

The normal probability plot graph shown in Fig. 1 shows that the data spread around the diagonal line and the distribution follows the direction of the diagonal line. Thus, the regression model satisfies the assumption of normality.

![Normal P-P Plot of Regression Standardized Residual](image)

**Fig. 1. Normality Test Results**
3.2.2. Multicollinearity Test

Table 12 shows that the two variables above have VIF values of 1.114 and 1.114 <10. Thus, it can be concluded that there is no multicollinearity between the independent variables in the regression model.

<table>
<thead>
<tr>
<th>Model</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>0.828</td>
<td>1.114</td>
</tr>
<tr>
<td>Brand</td>
<td>0.769</td>
<td>1.114</td>
</tr>
</tbody>
</table>

3.2.3. Heteroscedasticity Test

The Scatter plot graph of the heteroscedasticity test has revealed the points that spread randomly. This indicates that there is an absence of heteroscedasticity in the regression model, so that the regression model is appropriate to be used to predict the dependent variable Buy Interest ($Y$) which is based on the input variable Price of ($X_1$) and brand of ($X_3$).

4. Discussion

Based on the description of the overall regression model that has been obtained, it appears that the model that has the largest partial correlation is the 3rd model, which is $Y = 8.316 + 0.548X_1 + 0.186X_2 + 0.262X_3$, and it has the greatest coefficient of determination (44.5%). Even though the quality of the product ($X_2$) is not significant using a real level of 5%, but if we use the real level of 10% then all variables give a significant effect on the variables of interest in buying ($Y$). The multiple linear regression model obtained is a form of mathematical model that explains the following:

The constant value of 8.316 means that if the independent variable consists of Price ($X_1$) and Brand ($X_3$) are considered 0 (zero) or not implemented, the interest in buying customers in Fahmi Mandiri SMEs in southern Lampung is 8.316. Price regression coefficient ($X_1$) of 0.548 means that if the price increases by 1 scale in the respondent's answer it will increase customer buying interest in Fahmi Mandiri SMEs in southern Lampung, amounting to 0.548 units as long as the other variables are considered constant. Brand regression coefficient ($X_3$) of 0.262 means that if the brand increases by 1 scale in the respondent's answer, it will increase customer buying interest in Fahmi Mandiri SMEs in southern Lampung, at 0.262 units as long as the other variables are considered constant. Thus, the most dominant variable affecting the increase in customer buying interest is Price ($X_1$), because it has bigger contribution than the Brand does. Based on the results of the analysis above, the most influential variable of customer buying interest
in Fahmi Mandiri SMEs Lampung Selatan is Price ($X_1$). The results in this study oppose the findings of research conducted by Mirabi et al. (2015) who found that the price did not significantly influence the purchase intention of the roof tile products named ‘Bono’. Moreover, Andoko and Devina (2015) in their research showed that the price has a positive but not significant effect on the buying interest of potential consumers in purchasing the guest houses in Surabaya. However, the results of this study are in line with other studies (e.g. Adiputra & Sutopo, 2016; Annafik & Rahardjo, 2012; Castro & Marques, 2017; Rokim et al., 2014; Satria, (2017) who found that price has a positive and significant effect on consumer buying interest.

6. Conclusions

Based on the results of this research and data analysis, it can be concluded that the mathematical model of customer buying interest in Banana Fahmi Mandiri South Lampung products can be represented as $Y = 8.316 + 0.548X_1 + 0.186X_2 + 0.262X_3$, and the highest regression coefficient in the mathematical model is associated with the variable of price which is equal to 0.548. This shows that in the case study of Fahmi Mandiri SMEs Lampung Selatan with the product of Banana chips, price has more influence on customer interest than the quality and brand of the product. The suggestion for Fahmi Mandiri SMEs South Lampung is to keep maintaining the price compatibility with the quality. In addition, the Fahmi Mandiri SMEs was also advised to make a renewal of the brand, especially in terms of the product brands, which are already known by many people considering the brand may influence on the customers’ buying interest. Whereas for now, the quality of the product just needs to be maintained, since the quality is good enough already. Furthermore, for the next researcher, further study can be accomplished by deepening or developing research variables and it is suggested to conduct analysis in other ways, such as SEM (Structural Equation Modeling) in order to get more detailed results. This is because the result of this study showed that there were predictive abilities of 2 independent variables on customer buying interest of 45.5%, while the remaining 55.5% was influenced by other factors outside the regression model.

References


Surabaya. *Jurnal Pendidikan Tata Niaga*, 2(1).

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