

# The Influence of Digital Literacy, Technology Integration, Technological Acceptance Model, and Brand Image on Purchase Decisions at Yamaha Dealers in Indonesia

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## Abstract

*This research objectives to find out the effect of digital literacy, technology integration, technological acceptance model, and brand image on purchasing decisions at Yamaha dealers in Indonesia. The research was conducted by distributing questionnaires using a google form to respondents throughout Indonesia. The sampling technique used is probability sampling, using random sampling. The research data analysis technique used Partial Least Square-Structural Equation Modeling. The findings show that Digital Literacy, Technology Integration, Technological Acceptance Model, and Brand Image positively affect purchasing decisions.*

## Keywords

technological; digital literacy;  
brand image



## I. Introduction

For more than two years, Indonesia has been dealing with the Covid-19 pandemic. The automotive industry is one of those affected by the pandemic. All automotive brands in the country cannot do much during the impact of the Covid-19 pandemic, which has swept away potential sales for nine months in 2020. In Indonesia, motorcycles are a common mode of transportation. According to data from 2019, motorbikes accounted for 84 percent of the total 133,617,012 motorized vehicles in Indonesia, followed by passenger cars (11.67%), buses (0.17%), and freight cars (3.7%). Motorcycles have the fastest yearly growth rate of any mode of transportation, reaching 6.2 % per year.

Overall, in terms of motorcycle sales in Indonesia, 2020 was the year with the lowest sales volume in the last 10 years. According to data from the Indonesian Motorcycle Industry Association (AISI), the number of distributions issued to dealers reached around 6.4 million units in 2019, however that number decreased dramatically to 3.6 million units in 2020 when the pandemic occurred in Indonesia. The pandemic that occurred in Indonesia reduced people's purchasing power by 362 trillion rupiah in the national aggregate (Suparman, 2021).

Yamaha products are one of the automotive brands for the Indonesian motorbike sector. Sales of Yamaha products themselves are very high. This was seen in 2009, when Yamaha managed to outperform Honda's total annual sales figures. In the market share in Indonesia 2019, Yamaha is the second largest brand that dominates the motorcycle industry in Indonesia after Honda, which is 22.1% market share. When the pandemic struck Indonesia, sales of Yamaha motorcycles were affected in the same way that other brands in the motorcycle industry were. Yamaha motorcycle sales increased steadily from 2016 to 2018, but then began to decline in 2019. (Indonesian Motorcycle Industry Association, 2021). Yamaha Motor Co Ltd reported a net profit of 40.1 billion yen in the first nine

months of 2020, dropping 47 percent from the same period in 2019 owing to the impact of the prolonged pandemic on sales performance.

According to information obtained from interviews with Yamaha dealers, the dealers are not fully operational, and the only ones currently operating normally are the workshop business units. Meanwhile, for its own sales, it was announced that sales at Yamaha dealers in 2020 had decreased by 90%. Yamaha Indonesia took numerous attempts to sustain its sales performance, including enhancing the digital platform for marketing and sales activities. Yamaha dealers used Instagram, Tiktok, and Tokopedia for e-commerce during the pandemic, as well as Tokopedia, Blibli, Jd.id, and Shopee.

Utilization of the digital world demands knowledge of information technology in order to access information that is relevant and required by its users. To address the challenges and harness the opportunities offered by digital technologies during this crisis, participants shared a concern to recognize and protect digital rights in particular around the areas of privacy and inclusion (Hariati, 2021). This can be interpreted as internet users in Indonesia belongs to the category of digital natives group (Gunawan, 2020). According to Pramusinto (2020) the power of technology including digitalization and automation continues to grow and change the pattern of production, distribution, and consumption. As with other areas of life, technology is used to make changes, so also with the legal system as technology in making changes (Hartanto, 2020). Meanwhile, the use of information technology is the benefit expected by users of information systems in carrying out their duties where the measurement is based on the intensity of utilization, the frequency of use and the number of applications or software used (Marlizar, 2021). The company's adequate understanding will boost consumer digital literacy and encourage purchasing decisions (Semente & Whyte, 2020). Furthermore, customers' high degree of digital literacy will have an impact on the validity of the information received, making purchasing selections easier (Noh, 2017).

In order to generate sales prospects, businesses must be able to incorporate technology (Asrilsyak et al, 2021). Yamaha's sales are currently backed through e-commerce platforms such as Tokopedia, Lazada, and Blibli. Yamaha dealers are involved in this technological integration project. Furthermore, Yamaha sells on their website. This website, which is maintained by Yamaha dealers, is an attempt to enhance sales by making it easy for consumers to access information on the prices, shapes, colors, and specifications of Yamaha motorbikes.

Furthermore, Yamaha has its own advantages due to its status as one of the most well-known brands in Indonesia. Consumers will select well-known products based on their own experience with the products as well as information gathered from numerous sources (Kausuhe, Worang, & Gunawan, 2021). Consumers will be more likely to make purchases if their brand image improves (Xu et al, 2021, and Steven et al, 2021).

This research will investigate the impact of digital literacy, technology integration, technological acceptance model, and brand image on sales at Yamaha dealers in Indonesia. This is the first research to look at digital literacy, technology integration, the technological acceptability model, and brand image as predictors of increased sales. Furthermore, this is the first time this has been done on a Yamaha Dealer product in Indonesia.

## **II. Review of Literature**

### **2.1 Digital Literacy**

The capacity to comprehend and utilize enlightenment from a wide range of sources and formats via computers is referred to as digital literacy (Techataweewan & Prasertsin, 2017). In general, digital literacy contributes significantly to the development of business and

marketing networks (Nazzal et al. 2021). According to Noh's (2017) research, literacy levels have a major impact on information user behavior. Furthermore, digital literacy has been shown to boost the effectiveness of online marketing (Castaeda et al, 2020) since consumers with high digital literacy have appropriate understanding about a product (Jamila, Ratnawati, & Hussein, 2020). It will be easier for customers to make decisions if they have enough information. (Semente and Whyte, 2020; Nazzal et al., 2021; dan Xu et al., 2021).

*Hypothesis 1: Digital literacy has a positive effect on purchasing decisions*

## **2.2 Technology Integration**

Technology integration greatly aids in the creation of new innovations. The incorporation of technology in marketing through the use of the internet can increase consumers (Kalganova & Limlahapun, 2018), allowing for greater connections with customers. Because marketers can quickly share information, technology integration will make it easier for customers to recognize their demands (Jung & Tom Dieck, 2018). According to Zhang et al. (2018), customers will respond positively to integrated information and service channels. According to Jung and Tom Dieck's (2018) research, integrated technology will boost consumer happiness. Marketing channel integration with technology will boost trust and consumer happiness. Integration of technology in a marketing channel will boost consumer trust and welfare, influencing customer decisions. (2018, Zhang et al.)

*Hypothesis 2: Technology integration has a positive effect on purchasing decisions*

## **2.3 Technological Acceptance Model**

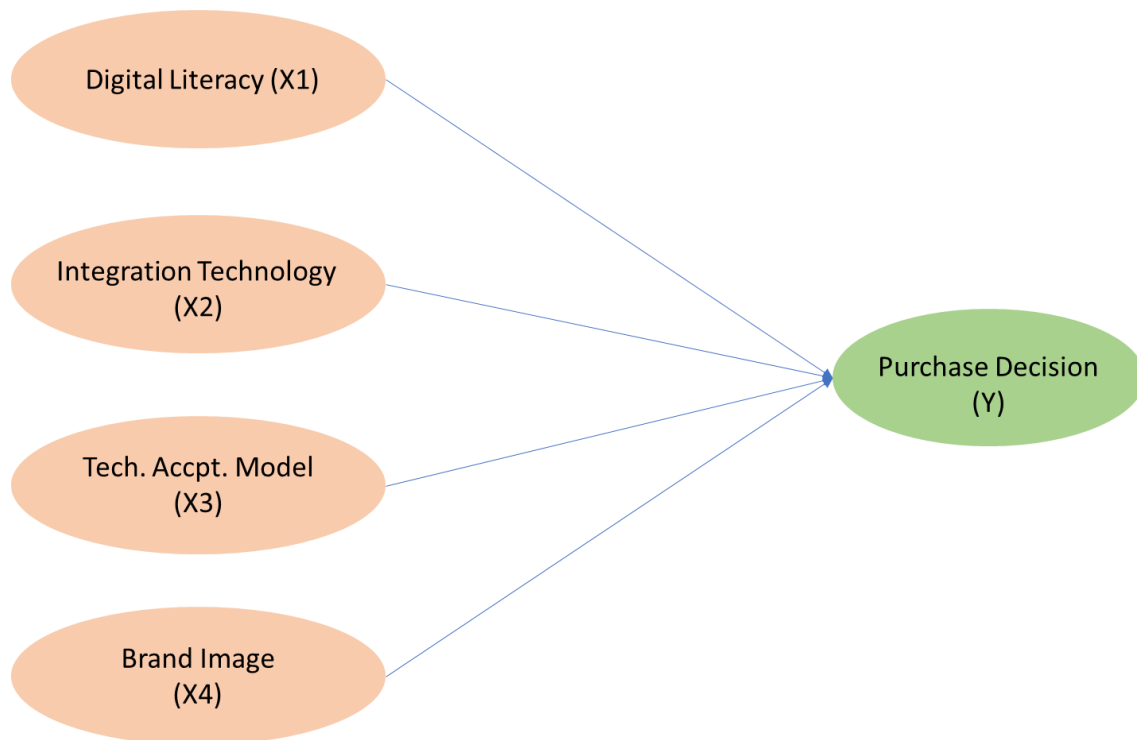
Marketing through internet media is very profitable for sellers, because the service system via the internet is very efficient, practical and can save time to market products and services. In greater detail, the TAM model covers Internet acceptance with specific variables that can influence the user's easy adoption of the Internet. This model associates each user's trust factor with two variables: usefulness and simplicity of use (ease of use). Several research have found that TAM will influence consumer purchase decisions because customers believe that existing technology is simple to learn and utilize (Arora & Sahney, 2018; Wong, 2018; Asrilisyak et al., 2021; Sharma & Bhatt, 2018; and Agag & El-Masry, 2016).

*Hypothesis 3: Technological Acceleration Model has a positive effect on purchasing decisions*

## **2.4 Brand Image**

Brand image is a view of the brand that reflects consumers' memories of brand affiliation. The placement of the brand image in the minds of consumers must be carried out continuously, so that the developed brand image remains strong and is positively received. If a brand has a strong and positive image in the minds of customers, the brand will always be remembered and the likelihood that consumers will buy the brand is extremely high. Steven et al., 2021 According to several studies, the greater the brand image, the higher the purchasing decision (Nguyen, Tran, & Vo, 2020; Kausuhe, Worang, & Gunawan, 2021; Steven et al, 2021; Amron, 2018; Tekin, Yiltay, & Ayaz, 2016; and Novansa & Ali, 2017).

*Hypothesis 4: Brand Image has a positive effect on purchasing decisions*



*Figure 1. Research Model*

### III. Research Methods

The purpose of this study is to see how digital literacy, technological integration, TAM, and brand image affect sales at Yamaha dealers in Indonesia. This study's dependent variables are digital literacy, technological integration, TAM, and brand image. The buying choice is the independent variable in this study. This study's sample consists of every person/individual who is a member of Yamaha Indonesia's target market. This study employs the probability sampling sample technique, as well as random sampling. The data for this study were gathered via delivering questionnaires to respondents. A 5-point Likert scale was used to grade questionnaire items. Questionnaires were disseminated via WhatsApp private messages, email, and other social media platforms using Google forms.

Validity and reliability tests were performed on the data collected from respondents. A validity test determines if a question item or statement is appropriate for use as a measuring tool for the variable to be measured. The Pearson Product Moment formula is used to perform a validity test on the attitude scale data. A reliability test is used to assess a measure's reliability, stability or stability, consistency, predictability, and accuracy or accuracy. Reliability test technique that are used is Alpha Cronbach. To answer the research objectives, Partial Least Square-Structural Equation Modeling is used. The aim of using PLS is to measure the presence or absence of a relationship between predictive variables in research so that it can be used to ensure various existing theories (Ghozali & Latan, 2015). The stages of this test are to evaluate the measurement model (outer model), and evaluate the structural model (inner model).

### IV. Discussion

The results of the research from the distribution of respondents' answers, it is known that most of the respondents are less than 30 years old (58.40%). The education level of the respondents is dominated by Bachelors (73.60%), with the most occupations being private

employees (47.60%). The income of the most respondents is in the range of >Rp 5,000,000 per month (33.20).

**Table 1.** Respondent Profile

<b>Statement</b>	<b>Total</b>	<b>Percentage (%)</b>
<b>Age</b>		
≤ 30 years	146	58.40%
31-40 years old	79	31.60%
41-50 years old	19	7.60%
> 50 years	6	2.40%
<b>Education</b>		
High school/equivalent	28	11.20%
Diploma	22	8.80%
Bachelor	184	73.60%
Postgraduate	15	6.00%
Doctoral	1	0.40%
<b>Profession</b>		
Housewife	6	2.40%
Student/Student	6	2.40%
Government employees	18	7.20%
Private employees	119	47.60%
Entrepreneur/trader	90	36.00%
Other	11	4.40%
<b>Income per month</b>		
< IDR 1,000,000	3	1.20%
> IDR 1,000,000 up to IDR 2,000,000	2	0.80%
> IDR 2,000,000 to IDR 3,000,000	10	4.00%
> IDR 3,000,000 to IDR 4,000,000	77	30.80%
> IDR 4,000,000 to IDR 5,000,000	75	30.00%
> IDR 5,000,000	83	33.20%

#### 4.1 Outer Models

Based on the estimation results using the SmartPLS 3 application program, the output of the model test shows that all manifests (observed variables) have a loading factor value greater than 0.70. As a result, the SEM-PLS model is claimed to have high construct validity. The table below illustrates the loading factor values on the model in detail.

**Table 2.** Loading Factor

<b>Construct</b>	<b>Loading Factor</b>	<b>R critical</b>	<b>Criteria (Loading Factor &gt; 0.70)</b>
<b>X1.1 &lt;- Digital Literacy (X1)</b>	<b>0.950</b>	<b>0.70</b>	<b>Valid</b>
<b>X1.2 &lt;- Digital Literacy (X1)</b>	<b>0.963</b>	<b>0.70</b>	<b>Valid</b>
<b>X1.3 &lt;- Digital Literacy (X1)</b>	<b>0.953</b>	<b>0.70</b>	<b>0.70</b>
<b>X1.4 &lt;- Digital Literacy (X1)</b>	<b>0.929</b>	<b>0.70</b>	<b>0.70</b>
<b>X2.1 &lt;- Technology Integration (X2)</b>	<b>0.920</b>	<b>0.70</b>	<b>0.70</b>
<b>X2.2 &lt;- Technology Integration (X2)</b>	<b>0.955</b>	<b>0.70</b>	<b>0.70</b>

<b>Construct</b>	<b>Loading Factor</b>	<b>R critical</b>	<b>Criteria (Loading Factor &gt; 0.70)</b>
<b>X2.3 &lt;- Technology Integration (X2)</b>	<b>0.932</b>	<b>0.70</b>	<b>0.70</b>
<b>X3.1 &lt;- Tech. accp. Models (X3)</b>	<b>0.969</b>	<b>0.70</b>	<b>0.70</b>
<b>X3.2 &lt;- Tech. accp. Models (X3)</b>	<b>0.968</b>	<b>0.70</b>	<b>0.70</b>
<b>X4.1 &lt;- Brand Image (X4)</b>	<b>0.949</b>	<b>0.70</b>	<b>0.70</b>
<b>X4.2 &lt;- Brand Image (X4)</b>	<b>0.967</b>	<b>0.70</b>	<b>0.70</b>
<b>X4.3 &lt;- Brand Image (X4)</b>	<b>0.961</b>	<b>0.70</b>	<b>0.70</b>
<b>Y1 &lt;- Purchase Decision (Y)</b>	<b>0.953</b>	<b>0.70</b>	<b>0.70</b>
<b>Y2 &lt;- Purchase Decision (Y)</b>	<b>0.937</b>	<b>0.70</b>	<b>0.70</b>
<b>Y3 &lt;- Purchase Decision (Y)</b>	<b>0.949</b>	<b>0.70</b>	<b>0.70</b>
<b>Y4 &lt;- Purchase Decision (Y)</b>	<b>0.887</b>	<b>0.70</b>	<b>0.70</b>

According to the table, all loading factors are more than 0.70. As a result, it is possible to infer that the research has good validity based on each construct. The average variance extracted (AVE) value will be tested next to further enhance the results of convergent validity with the criteria. If the AVE value is more than 0.5 (Hair et al, 2019), then the construct utilized in the research is legitimate. The findings of the mean variance extracted using the PLS 3.0 algorithm are shown below.

**Table 3.** Average Variance Extracted (AVE)

<b>Latent</b>	<b>Average Variance Extracted (AVE)</b>	<b>R critical</b>	<b>Criteria (AVE &gt; 0.5)</b>
<b>Digital Literacy (X1)</b>	<b>0.963</b>	<b>0.5</b>	<b>Valid</b>
<b>Technology Integration (X2)</b>	<b>0.929</b>	<b>0.5</b>	<b>Valid</b>
<b>Tech. accp. Models (X3)</b>	<b>0.934</b>	<b>0.5</b>	<b>Valid</b>
<b>Brand Image (X4)</b>	<b>0.957</b>	<b>0.5</b>	<b>Valid</b>
<b>Purchase Decision (Y)</b>	<b>0.949</b>	<b>0.5</b>	<b>Valid</b>

Based on these results, all latent variables have an AVE value greater than 0.5. This indicates that the indicators that make up the latent construct have convergent validity, which is advantageous when considering the mean of the extracted variance.

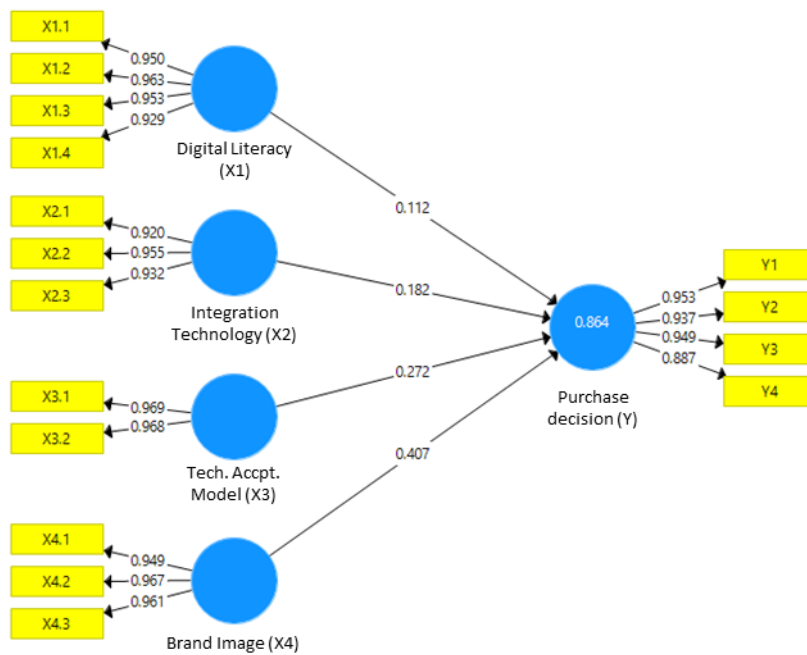
The results of the discriminant validity test using the Smart PLS 3.0 program indicate that the research model has good discriminant validity on cross-loading discriminant validity. The results of the reliability test showed the presence of a latent construct with a Cronbach alpha value of less than 0.7 indicating a reliable latent construct. In addition, the composite reliability value of all latent constructs is less than 0.70. Based on the value of Cronbach's alpha and composite reliability, it shows that the model has good reliability.

#### **4.2 Inner Models**

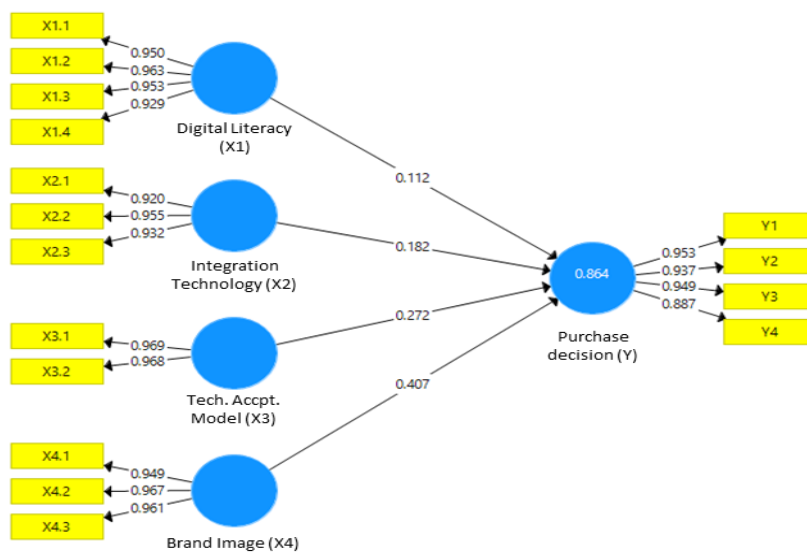
The inner model evaluation is an analysis of the outcomes of the interaction between constructs. The inner model test consists of R square, f square, Q-square predictive relevance, and hypothesis testing. R-Square for variable Purchase Decision (Y) of 0.864, indicating that Digital Literacy (X1), Technology Integration (X2), Tech. accp. Model (X3), and Brand Image (X4) can explain 86.4 % of the latent variable of Purchase Decision (Y), while the

remaining 13.6 % is affected by other variables not investigated in this research. F Square results indicate that the variables Digital Literacy (X1), Technology Integration (X2), Tech. accp. Model (X3), and Brand Image (X4) each have an influence with categories in the small and moderate categories in affecting Purchase Decision variable (Y). Based on the calculation results, it is known that the value of Q squared is greater than 0, which means the observed values have been reconstructed correctly, so the model has predictive relevance. This means that 0.864 or 86.4% of the relative influence of the structural model in measuring observations for endogenous latent variables and 13.6% is an error model.

Hypothesis testing in this study was carried out using the path coefficient value, t-value and p-value. To assess the significance and predictions in hypothesis testing, the path coefficient values, and t-values can be read (Kock, N. 2016).



**Figure 2. Structural Model (path coefficient, beta)**



**Figure 3. Significance Value (t-value)**

Hypothesis testing results show that Digital Literacy has a positive and significant effect on Purchase Decisions. Technology integration influences purchase decisions in a favorable and significant way. The Technological Acceptance Model has a large and beneficial impact on purchasing decisions. Brand Image also has a positive and significant effect on Purchase Decisions.

## V. Conclusion

According to the result of the research, digital literacy has been shown to influence purchasing decisions for Yamaha motorcycle products. In other words, it is comprehensible that as the level of digital literacy rises, it has the potential to impact higher levels of purchasing decisions for Yamaha products. The greater the degree of competence and public awareness of the use and transmission of digital information, the more options for the public to obtain the appropriate information for their demands. As a result, it will strengthen the community's ability to make purchasing decisions for Yamaha products. This is also when the opposite happens, where when the digital literacy level of the community is low, then the quality of the information obtained will be lower, and are followed with weak and inaccurate information. As a result, the message delivered by Yamaha may not be fully conveyed, resulting in decreased purchasing decisions (Nazzal et al, 2021; and Xu et al, 2021).

According to the result of the research, the greater the technological integration carried out by Yamaha, the more confident consumers would be in making purchasing decisions. Efforts are made to boost promotion through technology integration by constantly updating material on the official website, social media, and e-commerce. According to the results of the analysis, these initiatives are known to improve purchasing decisions. This occurred because, during this pandemic, many individuals obtained information via the internet, and because of the high number of searches for information via the internet, Yamaha used it to incorporate its marketing technology. This also occurs when the opposite happens: when Yamaha's degree of technological integration is inadequate, the public receives information that is not integrated, which can lead to the transmission of information that is not optimal. This can make it difficult for customers to make purchasing decisions. The results of this research in line with of Zhang et al. (2018), who found that integrated information and service channels elicited positive responses from consumers. According to Jung and Tom Dieck's (2018) research, integrated technology will boost consumer satisfaction. Customer trust and happiness will rise as marketing channels are integrated with technology, influencing purchasing decisions (Zhang et al, 2018).

TAM itself is a model for describing the extent to which consumers embrace the usage of producer-made technologies. In this scenario, Yamaha makes use of its service and promotion facilities via various digital channels such as the official website, social media, and e-commerce. The findings of this research show that when individuals believe that official websites, social media, and e-commerce provide more helpful information and services and are easier to access, it can improve Yamaha purchasing decisions. This is also the case when the opposite happens, where people actually feel that it is difficult to access and obtain information and services from Yamaha's official website, social media, and e-commerce, consumers will be increasingly hesitant to make a purchase decision. The findings in accordance with previous studies (Arora & Sahney, 2018; Wong, 2018; Asrilsyak et al., 2021; Sharma & Bhatt, 2018; and Agag & El-Masry, 2016)

Brand image also play a role in determining the level of purchasing decisions. With the better brand image on Yamaha, it will significantly affect the higher Yamaha purchasing decisions. When people have a positive view of Yamaha, they believe that the company is exceptional, strong, and unique in terms of both products and services. This improves



customer purchase decisions. When a brand has a strong and favorable image in the minds of customers, the brand is always remembered, and the likelihood of consumers purchasing the brand in question is extremely high (Steven et al, 2021). Vice versa, when the Yamaha brand image is weak in the eyes of the public, then this will make consumers hesitate to make purchasing decisions on the products offered by Yamaha. The results of this research are also supported by findings from previous studies (Nguyen, Tran, & Vo, 2020; Kausuhe, Worang, & Gunawan, 2021; Steven et al, 2021; Amron, 2018; Tekin, Yiltay, & Ayaz, 2016; and Novansa & Ali, 2017).

In an effort to increase sales, according to the analysis, Yamaha should emphasize the promotion process that prioritizes improving brand image. This is due to the fact that brand image has the greatest influence on purchasing decisions. As for what needs to be changed in terms of brand image, because it has a low consumer perception, it is about offering a selling price when compared to other brands. This can be enhanced by utilizing the official website and social media in terms of design quality, ease of customization/modification, technical innovation, and good after-sales support, as these are the indications with the highest scores. It is suggested that future research include variables connected to purchasing decisions, such as consumer satisfaction with digital services, so that purchasing decisions can be described more thoroughly. Furthermore, in-depth interviews with Yamaha consumers who engage and make purchases through various digital platforms such as the official website, social media, and e-commerce can be taken to deepen purchasing decisions.

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