The Effects of Consumer Behavior and Digital Literacy on Consumption Patterns in Students

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Abstract
This research attempted to figure out: the partial effect of consumer behavior on consumption patterns among students, the partial effect of digital literacy on consumption patterns among students, and the simultaneous effect of consumer behavior and digital literacy on consumption patterns among students. It used a quantitative method, with the population of this research being students of the Faculty of Teacher Training and Education of Universitas Swadaya Gunung Jati in Academic Year 2018–2019, from which a sample of 82 respondents were extracted. Data analysis was conducted using a descriptive analysis and an inferential statistical analysis using SPSS 25. The findings showed the following: 1) Consumer behavior had a significant positive effect on consumption patterns among students, because \( t_{\text{count}} (3.224) > t_{\text{table}} (1.994) \), consumer behavior was considered to have a partial influence on consumption patterns among students. 2) Digital literacy was also found to have a significant positive effect on consumption patterns among students, because \( t_{\text{count}} (2.686) > t_{\text{table}} (1.994) \), digital literacy was considered to have a limited influence on student consumption patterns. Lastly, consumer behavior and digital literacy had a simultaneous effect on consumption patterns among students, because it was found that \( F_{\text{count}} (10.76) > F_{\text{table}} (3.09) \).

Keywords
Consumer Behavior, Digital Literacy, Consumption Patterns

Introduction
The current digital era has seen significant changes that impacted, both directly and indirectly, various aspects of life, including social, cultural, political, and economic ones. Among the greatest changes that have occurred in this era are patterns of daily interactions and communications among society. In the economic sector, consumers have seen a greater degree of convenience in fulfilling their needs and wants in everyday life. Consumer behavior has also seen the impact of these changes. As cited by Nofri and Andi Haffifah (2018: 116), the American Marketing Association (1955) defined consumer behavior as "the dynamic interaction of affiliation..."
and cognition, behavior, and environmental events by which human beings conduct the exchange aspects of life". In general, consumers derive information about a product from dominant promotional sources. Given that communications technologies are frequently used to determine purchasing decisions, one of the said dominant sources is Google.

According to the findings of a survey conducted by the Indonesian Internet Service Providers Association (APJII) in 2018, as published in Jannah & Dian (2018: 1), the number of Internet users in Indonesia has hit a 171.17 mark, up from 27.9 million active users in the previous year. Most of the time, the Internet is accessed for commercial purposes, such as online shopping and establishing up an online store. With easy search for information related to a product of desire now being enabled, more and more consumers make purchases online. Online shopping has caused changes to consumer behavior due to (1) easier search, (2) more product selection, (3) more effective purchasing, (4) more varied products, and (5) sales evaluation and feedback (Saufuloh, 2019).

Internet users who have found searching for product information easier will certainly feel impacts across numerous aspects, notable among which is the economic one. Consumers will favor the advances in digital technologies that have caused changes in consumer behavior because they are easy to use to make online transactions. Understanding the concept of digital literacy is critical for easy product information search. It refers to the use of technology to find information, use that information as input for thinking, and disseminate enriched information. It also includes the ability to understand, analyze, and evaluate various information received.

Digital literacy knowledge is needed to select and evaluate information media contents carefully and thoroughly to be able to use them according to needs, especially with respect to consumption. Consumers' understanding of digital literacy will affect their consumption patterns.

Consumption patterns in students are certainly distinct. In this case, consumption patterns are intended to refer to routine or non-routine expenditures for purchasing goods or services to meet daily needs. Not only do they spend money on food, students also spend money on other things that are non-food, such as education and transportation, just to name a few. If the number of product purchases continues to rise, consumers will reach a point of total satisfaction at the level of consumption, and the use value of the product will fall. Consumers' consumption patterns are, of course, influenced by a variety of factors when it comes to products. This is consistent with Mangkunegara's (2009) opinion in Onis et al.'s study (2013: 2) that consumption patterns are determined by socio-cultural factors (e.g., culture, social level, and role model). The variables that will be discussed in this research are students activities related to consumption expenditure to fulfill daily needs that involve digital literacy in the use of information obtained through internet access.

Students cannot be separated from smartphones which are used as access to see the latest product promotions and often do online shopping, there is also a lack of students knowledge regarding digital literacy which will lead to consumptive behavior. Given these problems, the researchers will conduct research to determine changes in consumer behavior and the extent to which students understand digital literacy in information technology, as well as its relation to student consumption expenditures, both routine and non-routine expenses, so this research can be used as a solution to find out clear information about consumer behavior and avoid factors that trigger consumptive behavior among students.

This research can help students to use digital literacy understanding in information technology which is used as a medium to select and evaluate information as a consideration in purchasing decisions. Research on consumer behavior, digital literacy, and consumption patterns has been widely carried out in previous research, including research conducted by: (1) Kartikasari, et al (2013), examining the factors that influence purchasing decisions; (2) Triartanto (2019), examines digital literacy through the Microsoft Access application; (3) Wurangian, et al (2015), focusing on consumption patterns in income factors; (4) Onis (2013), focuses on the factors that influence consumption patterns; and (5) Irhandayaningsih (2020), studying digital literacy in online learning. Previous research related to consumer behavior and consumption patterns, so the novelty in this research is that researchers link consumer behavior and consumption patterns with digital literacy, especially among students. This is the difference with previous research.

Based on the explanation above, this research was conducted 1) to determine the partial effect of consumer behavior on consumption patterns among students, 2) to determine the partial effect of digital literacy on
consumption patterns among students, and 3) to determine the simultaneous effect of consumer behavior and digital literacy on consumption patterns among students.

RESEARCH METHODS

A study requires a design that will provide the path in which the research is conducted. Sukmadinata (2017: 287) defined, "Research design is a design of how the research is carried out." Meanwhile, Creswell (2009) in Duli (2019: 32) stated, "Research design is a design that helps researchers to organize their ideas in such a way, so as to allow researchers to look for weaknesses and shortcomings." Research design is all the processes needed in planning and implementing research (Siyoto & Sodik, 2015: 98).

Based on the three opinions presented above, it is concluded that research design is a design that is required for the smooth operation of a research process with the goal of making the research more effective and efficient. The research design used in this study followed that of the quantitative research defined by Sugiyono (2017: 49). It is described in Figure 1 below.

Figure 1. Quantitative Research Design
Source: Sugiyono, 2017

Population is all data that is of concern to researchers within a scope and time to be determined; it is related to data rather than humans (Ghodang, 2020: 21). Students from the Teacher Training and Education Faculty (FKIP) of Universitas Swadaya Gunung Jati in Cirebon participated in this study. After the research population was determined, a representative sample of the population was drawn based on certain characteristics. While the population was large, the sample was only part of the entire population and represented a fragment of the characteristics of the population. It was not possible to study the whole population due to limited funds, manpower, and time (Sugiyono, 2017: 118). As stated by Bailey (1994) in Fitrah & Lutfiyah (2017: 32), "The sample is a smaller group to be studied". The sample should be regarded as an estimate of the population rather than the population itself. The sample of this study was extracted from students of FKIP Universitas Swadaya Gunung in Academic Year 2018–2019 except those of the Economics Education Study Program, totaling 457 students. The sample was drawn by the probability sampling and simple random sampling techniques, whereby the authors provided an equal opportunity for each student to be selected as a random sample unit regardless of
the existing strata in the population. Using Slovin’s formula, a total sample of 82 students was obtained. More details can be seen in Table 1.

Table 1. Research Sample

<table>
<thead>
<tr>
<th>No</th>
<th>Study Program</th>
<th>Calculation</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indonesian Language &amp; Literature Education</td>
<td>129 / 457 × 82</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>English Language Education</td>
<td>180 / 457 × 82</td>
<td>32</td>
</tr>
<tr>
<td>3</td>
<td>Mathematics Education</td>
<td>86 / 457 × 82</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Primary Teacher Education</td>
<td>62 / 457 × 82</td>
<td>11</td>
</tr>
</tbody>
</table>

Total: 82

Source: Processed Data, 2021

Data collection is a stage of activities carried out to obtain necessary information to achieve research objectives (Mustafa et al., 2020: 79). The author used questionnaire and documentation in this study as instruments of data collection. The former is a data collection technique that involves providing and distributing a list of questions to respondents in the hopes that they will respond to the questions (Indrawan & Poppy, 2015: 9). Data were also obtained by the latter of the instruments from sources such as autobiographies, memos, diaries, personal letters, newspaper articles, magazines, brochures, and photographs (Aziz, 2015: 6). The research method used was quantitative. Data analysis was carried out by testing the validity, reliability, and classical assumptions (multicollinearity test; autocorrelation test; heteroscedasticity test; normality test; multiple linear regression analysis; and hypothesis testing). An instrument validity test was performed to determine the extent to which the measurement would be appropriate in measuring what was intended to be measured (Arikunto, 2010 in Yahya, 2019: 17), whereas a reliability test was performed to measure the indicators of a variable included in the questionnaire. A questionnaire is said to be reliable if a person’s answer to a question is constant or stable from time to time (Ghozali, 2019: 45).

This research has two kinds of hypotheses, namely the null hypothesis (Ho) and the alternative hypothesis (Ha). that the null hypothesis, which shows no effect (zero = no effect). The alternative hypothesis shows that there is an effect (not equal to zero, maybe greater than zero or smaller than zero. To determine the acceptance or rejection of the hypothesis, hypothesis testing is carried out by partial test (T test) and F test (ANOVA).

RESULTS AND DISCUSSION

The purposes of this research were 1) to understand the effect of consumer behavior on consumption patterns among students. 2) to understand the effect of digital literacy on consumption patterns among students, and 3) to understand the simultaneous effect of consumer behavior and digital literacy on consumption patterns among students. Before a multiple regression test was conducted, classical assumption tests as primary requirements of the multiple regression test were first performed, consisting of multicollinearity test, autocorrelation test, heteroscedasticity test, and normality test.

A good regression model demonstrates no correlation between independent variables. To determine the presence or absence of multicollinearity signs between independent variables, the Variance Inflation Factors (VIFs) and tolerance values are compared (Siregar, 2013: 103). In this study, the tolerance values of the independent variables were 0.826 and 0.10, and the VIF values were 1.211 and 10.00. Therefore, it was concluded that no multicollinearity existed between the independent variables in the regression model. An autocorrelation test was then conducted. An autocorrelation test examines the relationship between residuals in period t and residuals in period t-1 (previous). A good linear regression model is one that is free of autocorrelation (Gozali, 2019: 111). From the autocorrelation test, a Durbin-Watson value of 2.056 was obtained. With a sample size (n) of 82 and 2 independent variables (k = 2), then the dU value found was 1.696. In other words, the Durbin-Watson value was greater than dU (2.056 > 1.696) and less than 4 - dU (2.056 < 2.304). It
was concluded that there was no autocorrelation, implying that the multiple linear regression analysis to test the research hypotheses could be continued. A heteroscedasticity test was next to be performed. A heteroscedasticity test seeks to determine the presence of variance inequality from one observation's residual value to another. A good regression model is one that is homoscedastic and does not exhibit heteroscedasticity (Gozali, 2019: 137). The following figure illustrates the heteroscedasticity test results using a scatterplot graph.

![Figure 2. Heteroscedasticity Test Results](image)

The dots in the image above spread randomly above and below 0 on the Y axis and do not form a clear pattern, meaning that there is no heteroscedasticity in the data. Therefore, it was concluded that the model was homoscedastic. Finally, a normality test was conducted using a Normal P-P Plot of Regression Standardized Residual chart as illustrated in the figure below.

![Figure 3. Normality Test Results](image)

The figure illustrates how the dots spread around the diagonal line and follow its direction. The histogram therefore shows a normal distribution pattern, clearly indicating that the regression model met the assumption of normality. This research also involved multiple regression analysis and hypothesis testing on the effect of consumer behavior (X1) and digital literacy (X2) on consumption patterns (Y). The goal of the former is to determine whether two or more independent variables have an effect on a dependent variable (Gozali, 2019 in Mustafa et al., 2020:115).
Multiple Regression Analysis

Table 2. F-test

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>218.095</td>
<td>2</td>
<td>109.048</td>
<td>10.764</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>800.344</td>
<td>79</td>
<td>10.131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1018.439</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent variable: Consumption patterns
b. Predictors: (Constant), digital literacy, consumer behavior

Source: SPPS 25 for Windows processing results

According to the table above, the F count was 10.764 (> Ftable 3.09) and the significance value was 0.000 (< 0.05). Therefore, it was concluded that consumer behavior and digital literacy had a simultaneous effect on consumption patterns. Finally, a t-test was performed to examine the impact of each independent variable on the related variable, as shown in the table below:

Table 3. T-test (Partial)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Zero-order</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>8.429</td>
<td>3.686</td>
<td></td>
<td></td>
<td>.333</td>
</tr>
<tr>
<td>Digital Literacy</td>
<td>.227</td>
<td>.135</td>
<td>.185</td>
<td>2.686</td>
<td>.004</td>
</tr>
<tr>
<td>Consumer Behavior</td>
<td>.337</td>
<td>.105</td>
<td>.354</td>
<td>3.224</td>
<td>.002</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Consumption Patterns

Source: SPPS 25 for Windows processing results

The table above shows the results of the t-test on the independent variables as follows: 1) the variable consumer behavior had a t count of 3.224 (> ttable 1.994) and a significance value of 0.002 (< 0.05), so it was concluded that it had a partial effect on consumption patterns, and 2) the variable digital literacy had a t count of 2.686 (> ttable 1.994) and a significance value of 0.004.

The Effect of Consumer Behavior on Consumption Patterns among Students

According to the research data testing results, consumer behavior had an effect on consumption patterns among students. Consumer behavior per se is defined as the actions taken by consumers in locating, selecting, evaluating, and purchasing a product that becomes a need and a desire that must be met. According to Sudirman et al. (2020: 43), similarly, "Consumer behavior is defined as consumer activities in searching for, buying, using, evaluating, and spending on products that become their needs." Every student has different needs. There are several factors that consumers take into account when making purchasing decisions, including cultural, social, personal, and psychological ones. Students interact more in the social environment, and it is likely that student consumption activities are influenced by family and peers, resulting in a high level of consumption intensity among students. These students' consumption behavior tends to fall into two categories: buying behavior that seeks variety and buying behavior based on habit. This is evidenced by students who buy various products more often, and who will also look for other alternative products as substitutes in order to meet their needs.

The findings of this study support those of previous research by Lutfiah et al. (2015: 55), who stated, "If students have a large amount of pocket money but poor management and low self-control, their consumption..."
pattern will be irrational because this consumption pattern is controlled by themselves and their environment adapts.” If they have a lot of money, they will spend it however they want, without regard for the priority scale. Consumer behavior has a very important role in the management of consumption patterns among students; consumer behavior controls their consumption expenditures. Good consumer behavior will reflect rational behavior.

**The Effect of Digital Literacy on Consumption Patterns among Students**

The research data testing results showed that digital literacy had an effect on consumption patterns among students. Students’ digital literacy has an impact on their consumption intensity through online shopping applications, in which case students’ purchasing decisions affect their consumption patterns. Therefore, an understanding of digital literacy is critical to finding out how often students make purchasing decisions through digital applications. According to Setyaningsih et al. (2019: 1206–1207), the understanding of digital literacy is divided into three levels, namely basic, medium, and advanced. Students who understand digital literacy have the ability to thoroughly and comprehensively analyze and evaluate media contents. Meanwhile, students who do not have any digital literacy skills are students who only access and use digital applications without a critical understanding of media contents. Differences in students’ levels of understanding of digital literacy will affect their consumption patterns, as shown by their accuracy and thoroughness in using and evaluating information, especially necessary product information.

The findings of this study support Rahma’s (2020: 80) previous research, which states that digital literacy can help with the needs for information related to a product through digital applications. The greater the use of digital applications, the greater the online consumption activities. Students benefit from greater convenience and satisfaction when purchasing products using digital applications, which has an impact on purchasing power.

In carrying out their daily activities, students are inseparable from the use of the Internet as a means of accessing and searching for information related to the products needed. With many online shopping applications that can increase the intensity of consumption available, but without a good understanding of digital literacy, students will have a greater degree of dependence and eventually increased consumption patterns.

**The Simultaneous Effect of Consumer Behavior and Digital Literacy on Consumption Patterns among Students**

According to the research data testing results, consumer behavior and digital literacy had a simultaneous effect on consumption patterns among students. A consumption pattern is a form or structure of total expenditure on individual or group consumption activities in meeting needs. In this case, there are factors that influence consumption patterns, namely consumer behavior and digital literacy. Consumer behavior is the first factor that determines consumption patterns. Consumer behavior has strengths related to social (social level, peers, role models, and family) and cultural aspects. Students have the ability to deal with both daily and monthly consumption expenditures, in which case food consumption expenditure is greater than non-food consumption expenditure. The availability of more selections of products and the convenience of conducting online transactions cause changes in consumer behavior, which is accompanied by an increase in consumer spending. This is consistent with previous research by Fielnanda and Sahara (2018: 94), who found that there is a minimum expenditure that consumers must still spend and that consumption expenditure will increase with increasing income.

The next factor that influences consumption patterns is digital literacy. Understanding digital literacy has strengths related to psychological aspects (learning experiences, attitudes, personality, beliefs, and self-image). Students who understand digital literacy are able to distinguish and evaluate the product information needed via cellphones carefully and thoroughly. Students have a high consumption intensity, which leads to consumptive behavior that influences consumption patterns. Pradana stated (2018: 173–174), ”The concept of digital literacy emerged along with the dominance of the media in the midst of human life, which transfers data and information that humans use to carry out their daily lives. The next generation will have a different mindset than the previous generation because they will have unrestricted access to digital technology.”
The findings of this study support previous research by Septiansari and Trisni (2021: 63), who found "Changes in consumer behavior in students are driven by the convenience provided in online shopping applications by providing products to meet the needs and desires of students, thus enabling the intensity of purchasing products a lot when shopping online." With the ease of digital technology used by students in accessing and utilizing the product information required in everyday life, consumer behavior and digital literacy encourage changes in student consumption patterns.

CONCLUSION

Based on the findings of the investigation into the effects of consumer behavior and digital literacy on consumption patterns among students, it was concluded that consumer behavior influenced consumption patterns among students. This was demonstrated by students' ability to cover required consumption expenditures. Students are likely to engage in the type of purchasing behavior that seeks variety. The intensity of student consumption will increase, which will be accompanied by the use of the Internet as a means of accessing and searching for information related to the products required. The higher the use of digital applications, the more consumption activities online. With the use of digital applications, students acquire more convenience and satisfaction in purchasing products, and this will affect their purchasing power. Consumer behavior and digital literacy encourage changes in student consumption patterns with the ease of digital technology used by students in accessing and utilizing the product information needed in everyday life. Based on the conclusion explained above, several contributions expected to be of use to future audience can be made. First, this research is expected to contribute to the advancement of Microeconomics, particularly in the areas of producer behavior, consumer behavior, and consumption activities. Second, by recognizing the types of consumers that influence purchasing decisions, this research is expected to contribute to the advancement of Entrepreneurship Science, particularly in marketing strategy. Third, this research is expected to contribute to students' understanding of Digital Literacy. To avoid excessive consumption, students should pay attention to the factors that influence purchasing decisions and create a priority scale, allowing them to minimize excessive consumption expenditures. In researching consumption patterns, future authors may include variables such as social level, peers, use of digital media, and use of digital applications in addition to consumer behavior and digital literacy as independent variables.

REFERENCES


