# The Influence of Digital Literacy and Product Innovation on the Competitive Advantage of Modern Beverage Businesses

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## A B S T R A C T

The purpose of this research is to investigate how innovation in products and digital literacy affect the competitive advantages of modern beverage companies in Taman Kopo Indah, Bandung. The ability to comprehend, use, and make the best use of digital technology in business management is known as digital literacy. Product innovation, on the other hand, entails creating new goods or enhancing current ones to satisfy changing consumer demands. This study employs a survey methodology, quantitative methods, and descriptive and verification analysis techniques. Thirty-five respondents from modern beverage enterprises in the Taman Kopo Indah area were given questionnaires to complete to gather data. Purposively, this research sample was selected to guarantee that the participants were pertinent to the study's subject. Multiple linear regression was used for data analysis to examine the connection between competitive advantage, product innovation, and digital literacy. The findings indicate that competitive advantage is significantly impacted by both product innovation and digital literacy. According to the findings, companies should prioritize increasing digital literacy and product innovation if they want to stay competitive in the fast-paced digital age.

# 1. INTRODUCTION

Business actors with strong digital literacy are better equipped to use technology and digital marketing tactics, engage with customers more, and fortify their competitive edge (Shakira, 2024). According to research, product innovation, which is creating novel concepts and distinctive features for a product, can enhance the product's attractiveness and set it apart from rivals. According to several researchers who highlighted the significance of strategy and innovation in preserving a competitive position in a dynamic market, competitive advantage itself is the outcome of a mix of efficient strategies and optimal resource utilization (Li & Liu, 2014). To help modern beverage companies in the area preserve and increase their competitiveness in a market that is always changing, it is critical to comprehend how these two aspects interact.

The researcher developed the problem as follows, taking into account the issues described in the backdrop above: How do respondents react to business actors' use of digital literacy?
 (i)   How do respondents react to business actors' use of product innovation?
 (ii)  How do respondents react to the impact of both product innovation and digital literacy on business actors' ability to compete?
 (iii) How much of an impact does digital literacy have on business actors' competitive advantage?
 (iv)  How much of an impact does product innovation have on business actors' competitive advantage?
 (v)   How much of an impact do both digital literacy and product innovation have on competitive advantage in modern beverage business actors in Taman Kopo Indah, Bandung?

According to the findings of earlier studies, the Product Innovation variable had a favorable impact on Competitive Advantage in the 2019 study "The Influence of Entrepreneurial Orientation and Product Innovation on Competitive Advantage, Case Study at Sentra Roti Kopo Bandung" (Sipahutar & Maharani, 2024). Digital Literacy, variable X1, is where this study is innovative. The study "The Influence of Digital Literacy, Entrepreneurial Character and Competitive Advantage on Entrepreneurial Success in AWBE Sidoarjo Members" demonstrates a positive impact on all variables examined, except variable X2, which was originally named Entrepreneurial Character but was later renamed Product Innovation.

The study "The Influence of Innovation Strategy on Competitive Advantage in the Creative Industry of the Thai Tea Beverage Business Sector in Bandung City" discovered that Product Innovation influences Competitive Advantage, with the novelty in variable X changing from the influence of Innovation strategy to Digital Literacy.

The study "The Influence of Innovation Strategy on Competitive Advantage in the Creative Industry (Case Study of Handicraft MSMEs in Bandung City)" also found that innovation strategy and competitive advantage were positively correlated, with novelty in variable X, or digital literacy (Nona *et al*., 2021; Guntara *et al*., 2024). Last but not least, the study "The Influence of Product Innovation, Price and Product Quality on Competitive Advantage in Coffee Shops in Banjarmasin" by severeal researchers demonstrates that while Product Innovation has a significant impact on other variables, such as Digital Literacy and Product Innovation, it has no discernible effect on Competitive Advantage.

To gather the necessary data for the issue formulation on the Influence of Digital Literacy, Product Innovation, and Competitive Advantage—data that will subsequently be processed for additional research, this study used multiple regression analysis.

## 2. LITERATURE REVIEW
### 2.1. Digital Literacy

Digital literacy is a digital application-based skill that encompasses the use of digital technology, digital ethics, digital culture, and the capacity to recognize and assess reliable information in the digital world (Yeşilyurt & Vezne, 2023; Suhardjo *et al*., 2023). Additionally, digital literacy encompasses the capacity to evaluate content, access, organize, comprehend, and distribute information, as well as an understanding of potential hazards and security. This digital literacy includes the following indicators: socially responsible, communicative, trustworthy, and responsible.

The ability to comprehend and use information from a variety of sources is widely accessible through computer devices, and digital literacy describes the notion in the digital age (Bawden, 2001). In addition to being able to use computers as digital devices, digital literacy also includes the ability to adjust to social behaviors and other activities mediated by digital technology.

### 2.2. Product Innovation

Innovation is a decision-making process that aims to produce better goods, services, or procedures than those that were previously available. Product innovation is the process of making improvements to the features, design, and quality of goods and services that are put on the market. In the meantime, new products, product expansion, and product imitation are signs of product innovation.

Innovation, according to several researchers, is the fusion of ideas with creativity and application. A new idea is called a conception, a new idea that becomes a reality is called an innovation, and the broad acceptance or financial gain that results from an invention is known as usage.

### 2.3. Competitive Advantage

Define competitive advantage as a tactic to outperform rivals in the market. Competitive price, opportunity exploration, competitive threat defense, adaptability, and customer connections are the five components that make up competitive advantage. The ability of a business to add value to its products in comparison to rivals, and this value benefits customers, is defined as competitive advantage.

## 3. METHOD

This work employs various linear regression analysis techniques quantitatively. Testing the impact of multiple independent variables on a single dependent variable is the goal. Descriptive and verification research methods were employed in this study, which will allow for the determination of the relationship between the variables under investigation. The value of the variables digital literacy (X1), product innovation (X2), and competitive advantage (Y) is described in this study using the descriptive technique. The impact of product innovation and digital literacy on competitive advantage is also tested using a verification approach.

Business actors at the Contemporary Beverage UMKM in Taman Kopo Indah Bandung were interviewed, and questionnaires were distributed as key sources of data for this study. The actual secondary data sources come from publications and journals that support this research. In this study, questionnaire distribution, interviews, and observation are the methods used to collect data. Saturated samples are used in the sampling procedure based

on a population of 35 business actors. Multiple regression analysis was the method employed in this investigation.

## 4. RESULTS AND DISCUSSION

"Many MSMEs in Indonesia still rely on conventional marketing methods and face-to-face communication,". This strategy can restrict market reach and business operational efficiency, even though it is successful in fostering personal relationships with clients. These days, traditional marketing strategies have given way to online ones, which may reach customers at any time and from any location as long as they have an internet connection. Several researchers state that "MSMEs can communicate with customers more quickly and effectively by using digital media." Real-time interactions are made possible by platforms like social media and instant messaging apps, which can boost client loyalty and satisfaction. Additionally, digital media itself offers a readily available platform for information transmission, customer service, and consumer complaint resolution. Additionally, digital media itself offers a readily available platform for information transmission, real-time customer complaint handling, and consumer inquiry answering.

Several important ideas of strategic management and innovation are integrated in The Influence of Digital Literacy and Product Innovation on the Competitive Advantage of Contemporary Beverage Businesses. In the current digital era, digital literacy, which encompasses the capacity to comprehend and use digital technology, is crucial. In the meantime, one of the main forces behind market distinction is still product innovation, which entails creating or enhancing offerings (Distanont, 2020; Azmi *et al*., 2023). Digital literacy and innovation capacity can be strategic assets, according to the Resource-Based View paradigm (Barney *et al*., 2021; Rehman *et al*., 2023; Amankona *et al*., 2025). Additionally, **Figure 1** shows that new product releases and the adoption of digital technologies can be optimized with an understanding of innovation diffusion. Modern beverage companies can develop distinctive value propositions, increase operational effectiveness, and eventually gain a sustained competitive edge in the market by fusing digital literacy with product innovation.
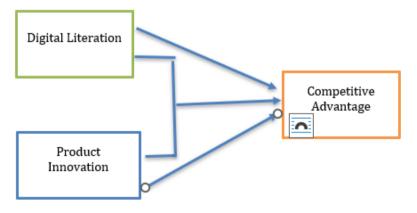


**Figure 1.** Research model.

The following research hypothesis can be derived from the research model shown in **Figure 1**: (i) Digital literacy is suspected to have an impact on beverage business actors; (ii) product innovation is suspected to have an impact on beverage business actors; and (iii) both digital literacy and product innovation are suspected to have an impact on competitive advantage among modern beverage business actors in Taman Kopo Indah Bandung.

### 4.1. Multiple Regression Analysis

The value of a can be found to be 3.845, with β1 and β2 being 0.569 and 0.629, respectively, based on **Table 1**. The following is one way to create this multiple linear regression equation (1) and (2):

$$Y = \alpha + \beta1\ X2 + \beta2\ X2 \tag{1}$$
$$Y = 3{,}845 + 0{,}569\ X_1 + 0{,}629\ X_2 \tag{2}$$

When interpreting the regression test's findings:

(i) Constant Value: The constant of 3.845 means that customer satisfaction (Y) is expected to be 3.845 units when the variables Digital Literacy (X1) and Product Innovation (X2) are at zero. It shows how much basic customer pleasure would be worth if none of the three independent variables contributed. Digital Literacy Coefficient (X1): The regression coefficient of 0.569 indicates that there is only a 0.569-unit improvement in customer satisfaction for every unit rise in digital literacy. In this model, Digital Literacy has a very strong and significant influence on Competitive Advantage, as indicated by the big and significant value of this coefficient.

(ii) Product Innovation value (X2): With a value of 0.629, one unit improvement in Product Innovation can result in 0.629 units more Competitive Advantage. According to this model, Product Innovation has very little impact on Competitive Advantage, as evidenced by the relatively modest and negligible value.

The regression coefficient and significance level indicate that, overall, Product Innovation (X2) illustrates the most important factors influencing Competitive Advantage in comparison to Product Innovation.

**Table 1.** Multiple linear regression equations.

| Model | Unstandardized B | Coefficients std. error | Standardized coeficients beta | t | Sig. |
|---|---|---|---|---|---|
| (Constant) | 3.845 | 2.443 | | 1.574 | 0.125 |
| Digital Literation(X1) | 0.569 | 0.126 | 0.523 | 4.525 | 0.000 |
| Product Innovation(X2) | 0.629 | 0.166 | 0.438 | 3.785 | 0.001 |

### 4.2. Classical Assumption Test

The purpose of the normality test is to ascertain whether or not the gathered data has a normal distribution. The Kolmogorov-Smirnov method is used to conduct this test, and the results of the normality test show that the data is normally distributed if the p-value is more than 0.05.

**Table 2** about Asympt. Sig. (2-tailed) Value is 200d, which is based on the findings of the normalcy test shown in 2. It can be inferred that the data utilized in this study is normally distributed because this number is higher than alpha 0.05. This suggests that the normal distribution assumption for additional analysis has been satisfied.

Furthermore, the purpose of the normality test is to describe the data distribution using a fork to determine whether the distributed data is normal or not. The regression model satisfies the assumption of normalcy if the data is dispersed around the diagonal line and moves along the diagonal line.

**Table 3** based on the correlation results between the variables of competitive advantage, product innovation, and digital literacy, the correlation coefficient value is simultaneously determined.

**Table 2.** Normality test (one-sample Kolmogorov test).

| | | Unstandardized Residual |
|---|---|---|
| N | | 35 |
| | Mean | 0.0000000 |
| Normal Parameters [a,b] | Std. Deviation | 1.60482150 |
| Most Extreme Differences | Absolute | 0.101 |
| | Positive | 0.101 |
| | Negative | -0.085 |
| Test Statistic | | 0.101 |
| Asymp.Sig.(2-Tailed) | | 0.200[c,d] |

Note: several points must be considered:
a. Test Distribution is Normal
b. Calculated from data
c. Lilliefors Significance Correction
d. This is a Lower bound of the true Significance

**Table 3.** Simultaneous correlation model summary.

| | | | | | | CHANGE STATISTICS | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Standard Error of The Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | 0.790[a] | 0.624 | 0.600 | 1.654 | 0.624 | 26.527 | 2 | 32 | 0.000 |

a. Predictors: (Constant), Product Innovation (X2), Digital Literacy (X1)
b. Dependent Variable: Competitive Advantage (Y)

The Sig F at 0.000 in **Table 3** is less than 0.05, indicating a link between the variables of product innovation and digital literacy about competitive advantage. Furthermore, the coefficient of determination ($R$) is 0.790, indicating a good correlation between the variables.

By holding other variables that are thought to have an impact constant, partial correlation analysis examines the relationship between two variables. The partial correlation value's findings in **Table 4**.

**Table 4.** Partial correlation.

| | | CORRELATIONS | | |
|---|---|---|---|---|
| | | Digital Literacy (X1) | Product Innovation (X2) | Competitive Advantage (Y) |
| Digital Literacy (X1) | Pearson Correlation | 1 | 0.347* | 0.675** |
| | Sig. (2-tailed) | | 0.041 | 0.000 |
| | N | 35 | 35 | 35 |
| Product Innovation (X2) | Pearson Correlation | 0.347* | 1 | 0.619** |
| | Sig. (2-tailed) | 0.041 | | 0.000 |
| | N | 35 | 35 | 35 |
| Competitive Advantage (Y) | Pearson Correlation | 0.675** | 0.619** | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | |
| | N | 35 | 35 | 35 |

*Correlation is significant at the 0.05 level (2-tailed) **Correlation is significant at the 0.01 level (2-tailed)

The correlation coefficient values between the variables are displayed in **Table 4** of the SPSS computation results. There is a high association between Digital Literacy (X1) and Competitive Advantage (Y), as indicated by the correlation coefficient of 0.675. Increasing digital literacy will boost competitive advantage, according to a positive correlation value,

which shows that the two variables are related in the same way. Product Innovation (X2) and Competitive Advantage (Y) have a strong link, as indicated by their correlation coefficient value of 0.619. In the meantime, there is little link between Digital Literacy (X1) and Product Innovation (X2), as indicated by the correlation coefficient value of 0.347. **Table 5** shows that the Adj R Square value is 0.624 or 62.4%. **Table 6** shows that the coefficient of determination value shows that the Digital Literacy variable (X1), Product Innovation (X2) Competitive Advantage variable (Y) are 62.4%, while the remaining 37.6 % is explained by other variables.

**Table 5.** Results of the simultaneous determination test.

| MODEL SUMMARY B | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of The Estimate |
| 1 | .790ᵃ | .624 | .600 | 1.654 |

a. Predictors: (Constant), Product Innovation(X2), Digital Literation (X1)
b. Dependent Variable: Competitive Advantage (Y)

**Table 6.** Partial determination test results.

| Model | Unstandardized b | Coefficients std. error | Standardized coeficients beta | t | Sig. | Zero-order | Correlation partial | Part |
|---|---|---|---|---|---|---|---|---|
| (Constant) | 3.845 | 2.443 | | 1.574 | 0.125 | | | |
| Digital Literacy (X1) | 0.569 | 0.126 | 0.523 | 4.525 | 0.000 | 0.675 | 0.625 | 0.491 |
| Product Innovation (X2) | 0.629 | 0.166 | 0.438 | 3.785 | 0.001 | 0.619 | 0.556 | 0.410 |

a. Dependent Variable: Competitive Advantage (Y)

The following are the findings for each variable based on the partial correlation test: Beta and zero-order correlation.
X1) 0.523 x 0.675 = 0.353 or 35.3%
X2) 0.438 x 0.619 = 0.271 or 27.1%

Digital literacy contributes 35.3%, whereas product innovation contributes 27.1%, according to the computational findings above. Additionally, when totaled, it agrees with the 62.4% results of the simultaneous test.

**Tables 7** and **8** show the sig values for the Product Innovation and Digital Literacy variables in the preceding table are 0.001 and 0.000, respectively. With a sig value of 0.000 <0.05 for the Digital Literacy variable on Competitive Advantage, it can be said that H0 is rejected, indicating that Digital Literacy has an impact on Competitive Advantage. Given that the Product Innovation variable's sig value is 0.001 <0.05, it may be said that H0 is rejected, indicating that Product Innovation influences Competitive Advantage.

The t-count value for the Digital Literacy variable (X1) is 4.525. Since t-count (4.525) is more than t-table (2.032), H0 is denied and H1 is approved. The study's findings suggest that competitive advantage (Y) is influenced to some extent by digital literacy (X1).

The t-value for the Product Innovation variable (X2) is 3.785. Since t-count (3.785) is more than t-table (2.032), H0 is disproved and H1 is approved. The study's findings suggest that Product Innovation (X2) influences Competitive Advantage (Y) to some extent.

**Table 7.** Partial hypothesis test result.

| Model | Unstandardized b | Coefficients std. error | Standardized coeficients beta | T | Sig. |
|---|---|---|---|---|---|
| (Constant) | 3.845 | 2.443 | | 1.574 | 0.125 |
| Digital Literation(X1) | 0.569 | 0.126 | 0.523 | 4.525 | 0.000 |
| Product Innovation(X2) | 0.629 | 0.166 | 0.438 | 3.785 | 0.001 |

a.  Dependent Variable: Competitive Advantage (Y)

**Table 8.** Partial hypothesis test results.

| Variable | t Count | t Table | Sig. | Information | Conclusion |
|---|---|---|---|---|---|
| $X_1$ | 4,525 | ±2.032 | 0,000 | $H_0$ rejected | Significant |
| $X_2$ | 3,785 | ± 2.032 | 0,001 | $H_0$ rejected | Significant |

a.  Based on the significance value (sig)

**Table 9.** The F test is used to assess whether the combined or simultaneous effects of independent factors on a dependent variable are significant or not. A significance value of 0.000 and an Fcount value of 26,572 are derived from above. H0 is rejected and H1 is approved since the significance value of 0.000 <0.05 and the Fcount value (26,527)> Ftable (3.29). Therefore, both product innovation and digital literacy have an impact on competitive advantage.

It has been demonstrated that digital literacy, which encompasses the traits of communicative, trustworthy, creative, and socially responsible, positively affects competitive advantage, particularly if it can be considerably enhanced by the business players themselves. Along with digital literacy, product innovation also contributes to this modern beverage company's increased competitive edge. Thus, it can also be said that product innovation and digital literacy impact the competitive edge of modern beverage companies in Taman Kopo Indah, Bandung.

**Table 9.** Simultaneous hypothesis testing (F Fest).

| Model | Sum of squares | dF | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 145.177 | 2 | 72.589 | 26.527 | 0.000[b] |
| Residual | 87.565 | 32 | 2.736 | | |
| Total | 232.743 | 34 | | | |

a.  Dependent Variable: Competitive Advantage (Y)
b.  Predictors: (Constant), Product Innovation(X2), Digital Literation (X1)

## 5. CONCLUSION

The efforts of the Indonesian Embassy in Kuala Lumpur in providing education for children of non-procedural immigrants in Malaysia, especially through the El Shaddai Learning Center, demonstrate a strong commitment to fighting for the right to education for these children. Despite facing various challenges such as Malaysian government policies that limit access to education, limited funds, and low parental awareness of the importance of education, the existence of institutions such as the El Shaddai Learning Center provides hope for the future of children of non-procedural immigrants. The success of this education program is highly dependent on the support of various parties, including the Indonesian government, local

educational institutions, the Indonesian community in Malaysia, and international institutions that care about the education of immigrant children. It is hoped that the Indonesian and Malaysian governments will increase cooperation in providing the right to education for immigrant children, especially in overcoming legal barriers. In addition, more socialization activities are needed that involve all elements of society to increase parental awareness of the importance of education for their children.

The author comes to the following conclusions based on the findings of the study and discussion of the impact of product innovation and digital literacy on the competitive advantage of modern beverage businesses in Taman Kopo Indah Bandung, which were detailed in the previous chapter: Modern Beverage MSME company actors in Taman Kopo Indah are doing a pretty good job of applying digital literacy. Digital technology can typically be used as a foundation for business actors to assist marketing and operations. To optimize the advantages of digital literacy in their organization, several areas still require improvement, including data security and social media usage.

(i) Taman Kopo Indah Bandung's modern beverage companies' product innovation has the lowest descriptive analysis value. This suggests that corporate players continue to have difficulties when developing or launching novel, intriguing items. It doesn't appear that innovative elements like creating new flavors, distinctive packaging, or novel sales approaches are at their best. In a dynamic market, this state makes it more difficult for business players to draw in new clients and keep their competitive edge.

(ii) The Competitive Advantage variable indicates that most modern beverage industry players in Taman Kopo Indah Bandung believe they can compete, particularly in terms of Product and Service Innovation, according to the findings of the descriptive study. To boost competitive advantage in the future, more focus must still be placed on company strategy and technology adaptation.

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