

THE ROLE OF INFORMATION TECHNOLOGY AND CREATIVITY IN ACHIEVING BUSINESS SUSTAINABILITY

Ekaningtyas Widiastuti^{1*}, Sulistyandari²

^{1,2} Universitas Jenderal Soedirman

E-mail: ¹⁾ widtyas@gmail.com, ²⁾ sulistyandari.yan@gmail.com

Abstract

This research investigates how information technology and creativity contribute to the sustainability of businesses run by students enrolled in the Student Entrepreneurship Program at Universitas Jenderal Soedirman. To gather empirical data, a structured questionnaire was administered to 100 entrepreneurial students participating in the program. The sample was selected using convenience sampling, a method often employed in exploratory research to quickly gather relevant data from a readily accessible population. The collected data was subjected to rigorous statistical analysis using the SPSS software, specifically employing the Multiple Linear Regression method to ascertain the relationship between the independent variables (information technology and creativity) and the dependent variable (business sustainability). The results of the analysis revealed a significant positive impact of both information technology and creativity on the sustainability of student-run businesses. Information technology, with its ability to streamline operations, enhance communication, and provide access to broader markets, emerged as a crucial factor in ensuring business continuity and growth. Concurrently, creativity was identified as a key driver of innovation, enabling businesses to adapt to changing market conditions and develop unique value propositions. In light of these findings, the study underscores the importance of optimizing the use of information technology and fostering a creative mindset among student entrepreneurs. To enhance business performance and sustainability, it is recommended that educational institutions and policy-makers support initiatives that provide students with access to cutting-edge technological tools and encourage creative problem-solving.

Keywords: Business Sustainability, Information Technology, Creativity

INTRODUCTION

Entrepreneurship plays an important part in the economy of a country and its progress. At the moment, universities are increasingly encouraging entrepreneurship education. The challenge for universities today is to produce highly competitive graduates and how to shift the mindset of job seekers into job creators. Research has supported this belief, and highlighted the positive impact that entrepreneurship education has (Zhao et al., 2005). Entrepreneurship can enhance creativity and develop problem-solving skills, independent thought, and the ability of students to think independently. This effort will help shape the character and thinking abilities of students in preparing them for their journey in both the work environment and starting a business.

Programs for student entrepreneurs at colleges and universities are a great way to produce new, young business owners who have the confidence to launch their own

^{1*}Universitas Jenderal Soedirman, Indonesia

Ekaningtyas Widiastuti

*E-mail: widtyas@gmail.com

businesses. Students are required to be able run a business successfully and start their own. Universitas Jenderal Soedirman organises the Entrepreneurial student program each year. Universitas Jenderal Soedirman provides funding that will allow students to launch 140 startups in 2022 or 2023. The development, facilitation, and support of businesses that have already started can lead to a successful business (Tanti & Dewi, 2020).

Businesses that are sustainable can show their ability to expand sustainably, and compete in the marketplace. Business sustainability is influenced by factors such as creativity and information technology. Information technology can help with marketing, payment transactions, and online purchasing and selling. Several studies have shown that digital technology affects entrepreneurial sustainability. (Gregori & Holzmann 2020; George et. al., 2021). As a result of these findings, Gregori & Holzmann (2022) discovered that business models play a role in combining digital technology and longevity, re-conceptualizing it as a key business model player, and developing entrepreneurial businesses.

Additionally, creativity is the ability to be innovative and find solutions in the face a variety of challenges and opportunities. The entrepreneurial creativeness in creating and selecting appropriate products, and strategies is essential to the business's sustainability. Apriani, (2019), concluded that creativity has a positive impact on MSME sustainability. Rinto found the same thing (2019). There was a strong correlation between creative thinking and sustainable business.

This research seeks to investigate how information technology and creativity contribute to the sustainability of businesses run by students enrolled in the Student Entrepreneurship Program at Universitas Jenderal Soedirman.

LITERATURE REVIEW

A. Business Sustainability

Business sustainability is the ability of a company to continue its operations and grow over time as a result (of its operations and production). In their article Business Sustainability: It's about time, Bansal and Jardine (4) state that *"Business sustainability is a commitment to ensuring that whatever is needed is met without sacrificing the ability of future generation, and sustainability aims at securing equity between generations."*

B. Information Technology

Aslizadeh (2014) explains information technology by defining it as a collection of instruments like artificial intelligence (robotics), hardware, data networks and workstations. Aslizadeh explains that the use of information is an organized procedure for completing a

particular activity. Information technology can be defined as a set technologies that organizations use to generate, distribute, and process information (Fatimah & Azlina, 2021). The use of information technology can be a key factor in ensuring that company operations are carried out efficiently and effectively.

C. Creativity

Saleh & Brem (2023) define creativity as the desire to reinvent, to find new and innovative ways to move towards sustainability. Creativity is also the ability to make something unique, whether that thing has never been made before or can be created by combining existing elements (Komarudin& Hamdani, 2023). Individuals with creativity are characterized by their flexibility, fluency in thinking, high curiosity and a desire to explore new environments. The employee who displays more of the personal qualities that increase creativity is more likely to display higher levels, regardless of whether their workplace fosters creativity. (Nasifoglu. et. al., 2020).

RESEARCH METHODS

A. Research Design

The sample consisted of entrepreneurial students at Universitas Jenderal Soedirman who had received financial support from the Entrepreneurial Students Program. The research sample was selected using convenience sampling.

In this study, the variables are sustainability of business, technology and creativity. For the measurement of variables, a Likert-scale is used. There are four levels of disagreement: neutrality, strong disagreement, and severe disagreement.

First, validity and reliability are tested. Then, the data is processed using descriptive statistics to identify the characteristics of respondents, and their responses to the statements in the survey, which act as indicators for the study variables. Multiple Regression Analysis was performed using the SPSS 21.0 software to determine research variables' influence. This is the equation model to be analysed:

$$BS = A + B1IT + B2C + e$$

Information:

Business Sustainability (BS)

A = Constant

B = Coefficient of the independent variable

Information Technology (IT-X1)

C (X2) = Creativity

e = Standard error

B. Goodness-of-Fit Test and Hypothesis testing

Coefficient of determination is the percentage of total fluctuations in dependent variables that can be explained by changes in independent variables. R^2 is also known as R-squared. The coefficient of determination is zero when the independent variable does not have any effect ($=0\%$) on its dependent variable. If the coefficient of determination is 1 then the independent variables under study have a 100% effect on the dependent variable. The dependent variable is in the range between 0 to 1, and can therefore be expressed algebraically by $0 > R^2 = 1$

The regression equation's goodness of fit is evaluated if the significant value is less than 0.05. If the significant number is greater than 0.05, then the equation for regression does not satisfy the goodness-of-fit requirements.

To determine the impact of an independent variable, the t-test is used. The level of significance is 95% when $(\alpha)=0.05$

- If $t_{\text{statistic}} > t_{\text{table}}$ or significant level $> (0.05)$, then H_0 can be accepted. This means that the independent variables has a partial effect on the dependent variables.
- If $t_{\text{statistic}}$ is greater than t_{table} or if the significant level is less than 0.05, H_0 will be rejected. This means that the independent variables partially influence the dependent variables.

RESULTS AND DISCUSSION

A. Respondent Profile

These respondents are entrepreneurial students that received funds from the Entrepreneurial Student Program (Jenderal Soedirman) at Universitas Jenderal Soedirman. This research sampled 100 students. The profile of the respondents could be determined from their characteristics including gender and residence status.

Table 1. Respondent Profile

Respondent Profile	Information	Total	Percentage (%)
Gender	Woman	71	71
	Man	29	29
	Total	100	100
Residence Status	Live with parents	40	40
	Boarding house	60	60
	Total	100	100

Sources of Tuition Fees	Scholarship	31	31
	Parent	64	64
	Own cost	5	5
	Total	100	100
Pocket money (per month)	< IDR 500,000	24	24
	IDR 500,000 - IDR 1,000,000	53	53
	IDR 1,000,000 - IDR 2,000,000	22	22
	> IDR 2,000,000	1	1
	Total	100	100

On the basis of the 100 respondents, it's clear that most of the participants were female. In the research, it is clear that boardinghouses are more common among respondents. Also, most students classified as entrepreneurs are considered independent. Students still receive funding from their parents for paying for college. Based on their monthly earnings, respondents are described as having a lot of pocket cash.

B. Analysis Results

1. Validity test

Based on the results of the validity calculations shown in the attachment, the validity test results show that item-total statistics is known that each question item on independent variables such as information technology and creativity have $r_{\text{statistic}} > r_{\text{table}}$ (0.197), which means the independent variable question item is valid. Likewise, the dependent variable business sustainability is declared valid because it has $r_{\text{statistic}} > r_{\text{table}}$ (0.197).

2. Reliability Test

Table 2. Reliability Test Results

Variable	Alpha	Cut off Value	Information
Information Technology (X ₁)	0.839	0.7	Reliable
Creativity (X ₂)	0.953	0.7	Reliable
Business Sustainability (Y)	0.72	0.7	Reliable

Source: data obtained using SPSS

The results of validity calculations are shown in the above. It is evident that there is a total statistic for the items that relate to independent variables, such as creativity and information technology. This shows that these independent variable questions have valid question answers. In the same way, the dependent business sustainability variable is declared valid since it has $r_{\text{statistic}} > r_{\text{table}}$ (0.197)..

C. Multiple Regression Analysis

Table 3. Multiple Linear Regression Results

Variable	B	tstatistic	Sig.
(Constant)	1,834	1,038	0.302
Information Technology (X ₁)	0.339	2,758	0.007
Creativity (X ₂)	0.251	4,143	0,000
R-square		0.401	
Sig. F		0,000	

Source: data obtained using SPSS

These equations' results were determined by the tests that were conducted:

$$BS = 1,834 + 0.339IT + 0.251C + e$$

a. Coefficient of Determination (R²)

On the basis of table 3, we can see that determination coefficient R² (0.441) is within acceptable range. The regression equations model can explain the 44.1% relationship between independent variables and dependent variables. Other variables, which are not considered in this study, explain the remainder 55.9%.

b. Simultaneous Testing (F-Test)

According to established regression equation models, $F = (0.000) \geq (0.05)$ means the independent variables (information technology, creativity, etc.) have model accuracy or good fit.

c. Partial Testing (t-Test)

In the partial results shown in table 3, information technology's significant value was 0.0070.05, with a coefficient value of 0.339. It is therefore believed that this variable has positive impacts on business sustainability. (Hypothesis 1) The creativity variable's significance is 0.0000.05 and a coefficient B value of 0.251, which means creativity positively impacts business sustainability.

Discussion

1. Information Technology and Business Sustainability

Information technology is positive for business sustainability, according to the analysis. More business sustainability can be attained with better use of information technology. Business owners of the millennials understand how to use information technologies, like digital marketing, for promoting products, and performing buying and selling transactions both with consumers and their suppliers. It will improve the sales of products that will ultimately impact their existence and sustainability. Melville (2009) found that IT has an

important impact in managing sustainable operations. Gregori & Holzmann's result (2020), that digital and sustainable entrepreneurship were related, imply that enables and promotes the creation of entrepreneurial efforts to conduct sustainable business.

2. Creativity and Business Sustainability

Researchers found that creative thinking has a positive effect on sustainability. The more creativity is generated, the longer the business can survive. For business to continue, it is necessary to have a higher level of product quality. A high level of product innovation can provide a competitive advantage. In order to remain competitive, creativity with new ideas must be continually improved. It is important to use new techniques in order to create business opportunities that will sustainably maintain business. Rinto's results (2019), which found that MSME businesses are positively affected by creative thinking, support this research.

CONCLUSIONS

After reviewing the results and describing them, we can conclude that the higher the business sustainability, and the more creativity generated, the more Business Sustainability is achieved. In order to ensure the sustainability of a business, there are several things that need to be done. One is using and utilizing information technology correctly in business operations. To be more effective in supporting business sustainability, creativity must be increased through training.

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