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THE EFFECT OF CAPITAL, BUSINESS DURATION, AND TECHNOLOGY UTILIZATION ON THE INCOME OF MSME ACTORS IN THE TRADE SECTOR IN SOUTH DENPASAR

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Abstract: Micro, Small, and Medium Enterprises (MSMEs) constitute a major component of the economy, playing a vital role in supporting national economic development and significantly contributing to local economies. The trade sector, as one of the prominent MSME sectors, has experienced substantial growth and remains highly attractive to the public in South Denpasar District. This strong growth potential inevitably intensifies competition among MSME actors, necessitating greater creativity and innovation. This study aims to examine the effect of capital, business duration, and technology utilization on the income of MSME actors in the trade sector in South Denpasar, both simultaneously and partially. The study was conducted in South Denpasar District, with a population of 3,306 trade-sector MSME units and a sample of 97 respondents selected using purposive sampling. The types of data used include both qualitative and quantitative data. The analytical techniques applied are descriptive analysis and multiple linear regression analysis. The results indicate that all independent variables have a significant simultaneous effect on the dependent variable. Partially, capital, business duration, and technology utilization each have a positive and significant effect on the income of MSME actors in the trade sector in South Denpasar.
Keywords: Capital, business duration, technology utilization, MSME income.

INTRODUCTION

Economic development in a country is considered a fundamental pillar for advancing progress in various other sectors. It refers to government-driven efforts and policies aimed at improving the living standards and overall welfare of society (Yanto & Djayastra, 2015). Micro, Small, and Medium Enterprises (MSMEs) represent one of the most crucial economic sectors, playing a significant role in national economic development by contributing to income distribution, poverty alleviation, and job creation (Mahayuni & Widanta, 2021). MSMEs are widely embraced by entrepreneurs in Indonesia due to their relatively simple management and lower capital requirements, making them accessible to a broad segment of the population. Given their diverse contributions, MSMEs can be considered a backbone of economic development in many countries (As'ad et al., 2022).

In the GRDP classification, the trade sector is divided into two sub-sectors: Wholesale and Retail Trade, and Trade in Motor Vehicles and Repairs. The Wholesale and Retail Trade sub-sector contributes around 80% of the trade sector's total value, which is higher than the contribution from Motor Vehicle Trade and Repair Services.

The number of MSMEs varies by district/city across Bali Province. Denpasar City, as the economic center of Bali, has the largest population approximately 755,600 people which creates vast market potential and drives the growth of MSMEs. This large number of MSME actors in Denpasar serves as a strategic asset for regional economic development. MSMEs in Denpasar City hold a crucial role in supporting local economic stability through job creation, tax contributions, and involvement in social welfare programs (Setia Wirawan, 2023). According to the Denpasar City Office of Cooperatives and MSMEs, MSMEs in the city are classified into four sectors: agricultural industry, non-agricultural industry, trade, and various services. Each business sector in Denpasar City has shown steady growth over the years, with the trade sector being one of the largest MSME sectors that consistently experiences an increase in the number of business units annually. Although trade-based MSMEs are present across all subdistricts in Denpasar, their growth and concentration are not evenly distributed among the districts.

South Denpasar ranks as the second-highest subdistrict in terms of the number of MSMEs in the trade sector, where trade consistently remains the dominant sector, surpassing agriculture, non-agriculture, and services. The area has shown a more stable and significant growth pattern, particularly after the decline caused by the Covid-19 pandemic in 2021. The growing potential of MSMEs in the trade sector can support job creation and boost the local economy. However, this growth also intensifies competition, pushing business owners to be more innovative. Business success is often reflected in their ability to stay competitive in changing market conditions. In addition, the income level of business owners serves as an important measure of success. The higher the income earned by entrepreneurs, the greater the profit that can be achieved (Wibowo et al., 2023).

According to Keynes, income is influenced by two primary factors: changes in the quantity of production factors used and the productivity of each unit of those factors, as cited by Rosyidi (2003:46) in Helmalia & Afrinawati (2018). In Keynesian theory, the factors of production include land (natural resources), labor, capital, and entrepreneurship/skills. However, Keynes did not account for the role of technology, which in today's digital era is crucial for improving operational efficiency, expanding

market reach, and enhancing competitiveness. Therefore, based on Keynesian theory, this study focuses on several factors assumed to significantly affect income—namely capital, business duration (entrepreneurial experience), and adds the variable of technology utilization.

The first factor that can influence income is capital. A larger amount of capital facilitates smoother production processes, which in turn increases output and sales (Putri, 2022). For improving and expanding business performance, capital or financing is essential for enterprises of any scale small, medium, or large (Ferdiansyah & Bukhari, 2021). This aligns with the findings of Daini et al. (2020), Amma et al. (2022), and Nursyamsu et al. (2020), all of which reveal that capital has a positive and significant effect on income. Sufficient access to capital allows businesses to grow, improve product quality, and adopt new technologies. However, capital access remains a major challenge for many MSME actors.

In addition to capital, business experience or duration is also a key factor influencing business success and income. Experience provides MSME owners with better management skills and broader customer and partner networks (Setiaji & Fatuniah, 2018). Entrepreneurs with more experience tend to develop more refined strategies to boost sales (Nawira et al., 2023). Research by Hanum (2017) and Alkumairoh & Warsitasari (2022) confirms that the longer a business operates, the more positive its impact on customer acquisition and overall performance.

Furthermore, technology utilization plays a significant role in increasing income. In today's digital landscape, many MSMEs have already adopted technology in their operations. Through the internet, marketers can promote their products 24/7 without time constraints (Madleňák et al., 2015). The expansion of MSMEs' market share cannot be separated from the success of effective marketing strategies. With technology, MSMEs can broaden their business footprint, create new job opportunities, and contribute to social stability (Hendrawan et al., 2024). Hence, strengthening and developing MSMEs through strategic measures—including the use of technology—is essential for ensuring sustainable economic growth and stability (Sulaeman et al., 2024). The aim of this study is to examine and analyze the influence of capital, business duration, and technology utilization on the income of MSME actors in the trade sector in South Denpasar.

METHOD

This research employs an associative quantitative approach to analyze the influence of independent variables capital (X_1), business duration (X_2), and

technology utilization (X_3) on the dependent variable, namely the income of MSME actors in the trade sector in South Denpasar (Y). The study was conducted in South Denpasar District, selected due to its role as a hub for trade-related MSME activities with high growth potential and a digital ecosystem that supports the adoption of technology in business operations. The research subjects are MSME actors in the trade sector, with a total population of 3,306 units. A sample of 97 respondents was determined using the Slovin formula and purposive sampling technique based on the following criteria: actively utilizing technology in their business and operating for a minimum of one year (Sugiyono, 2014; Hasnunidah, 2017).

The types of data used include both quantitative and qualitative data, obtained from primary and secondary sources. Data collection techniques involved documentation, observation, structured interviews, and in-depth interviews with MSME actors and officials from the Cooperatives and MSMEs Office. The research instruments were tested for validity and reliability to ensure data accuracy and consistency, with variable measurements conducted using a Likert scale. Data analysis included descriptive statistical analysis, confirmatory factor analysis for the technology variable, and multiple linear regression using a log-linear (double-log) model to assess the extent to which each independent variable influences MSME income (Ghozali, 2016; Yunita & Syaichu, 2017).

Furthermore, classical assumption tests were conducted to ensure the quality of the regression model through tests for normality, heteroscedasticity, and multicollinearity. Hypothesis testing was carried out using the F-test to examine the simultaneous influence of all independent variables on income and the t-test to assess the partial influence of each variable. This research aims to provide empirical insight into the importance of capital support, business experience, and the adoption of digital technology in enhancing the economic performance of MSMEs in the trade sector in South Denpasar (Sugiyono, 2019; Kustina & Pratiwi, 2022; Wijaya, 2013).

RESULTS AND DISCUSSION

Descriptive Statistics Results

1) Respondent Characteristics by Age

Table 1. Characteristics of Respondents of MSMEs in the Trade Sector in South Denpasar Based on Age

No	Age	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	21 - 25	19	19.59
2	26 - 31	16	16.49

3	32 - 37	10	10.31
4	38 - 43	17	17.53
5	44 - 49	14	14.43
6	50 - 55	11	11.49
7	56 - 61	8	8.25
8	62 - 67	2	2.06
Amount		97	100

Source: Processed primary data, 2025

Based on Table 1, it shows the distribution of respondents of MSME actors in the trade sector in South Denpasar District based on age levels which are grouped into 8 groups. The largest number of respondents is in the age range of 21-25 years, which is 19 people with a percentage of 19.59%. This is followed by the age group with a range of 38-43 years, which is 17 people and a percentage of 17.53%. Based on these data, it can be seen that the MSME actors in the trade sector in South Denpasar who are respondents are included in the productive age group so that they have the opportunity to be more optimal in doing their work. The presence of MSME actors across different age groups also reflects diverse entrepreneurial dynamics, where younger individuals bring fresh ideas and digital fluency, while older individuals contribute with experience and resilience. This combination can positively impact the growth and sustainability of the MSME sector in South Denpasar.

2) Respondent Characteristics Based on Education Level

Table 1. Characteristics of Respondents of UMKM Actors in the Trade Sector in South Denpasar Based on Education Level

No	Last education	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	Elementary School	2	2.06
2	Junior High School	4	4.12
3	Senior High School	52	53.61
4	College	39	40.21
Amount		97	100

Source: Processed primary data, 2025

Based on table 2, the characteristics of MSME actors in the trade sector in South Denpasar who were respondents based on their last education were dominated by SMA/K (Senior High School/Vocational) graduates, which were 52 people or 53.61 percent. Then followed by the number of respondents who graduated from college as many as 39 people with a percentage of 40.21 percent and respondents who graduated from SMP (Junior High School) as many as 4 people with a percentage of

4.12 percent. The dominance of the level of education from Senior High School graduates of 53.61 percent shows that the respondents already have a good education so that respondents can understand well about financial management, managing business continuity, and the use of technology.

3) Respondent Characteristics by Gender

Table 2. Characteristics of Respondents of UMKM Actors in the Trade Sector in South Denpasar Based on Gender

No	Gender	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	Woman	53	54.60
2	Man	44	45.50
Amount		97	100

Source: Processed primary data, 2025

Based on Table 3, it shows that of the 97 respondents of MSME actors in the trade sector in South Denpasar, 54.60 percent of respondents were female and 45.50 percent of respondents were male. When viewed based on the difference in the number of respondents based on gender, this shows that female MSME actors are more dominant than male MSME actors. The dominance of female MSME actors can be caused by the flexibility of time offered by the trade sector, especially MSMEs, allowing women to play dual roles, both as MSME actors in the trade sector and as household managers.

Description of Capital Variables

Table 4. Description of Capital Variables

No	Respondent's Capital (Rupiah)	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	<1,000,000	1	1.03
2	1,000,000 – 5,000,000	43	44.33
3	5,000,001 – 10,000,000	32	32.99
4	10,000,001 – 15,000,000	13	13.40
5	15,000,001 – 20,000,000	7	7.22
6	>20,000,000	1	1.03
Amount		97	100

Source: Processed primary data, 2025

Table 4 shows that the capital most used by business actors is in the range of Rp1,000,000 to Rp5,000,000, which is 43 respondents with a percentage of 44.33 percent. This indicates that the majority of MSMEs in the trade sector in South

Denpasar have relatively low capital requirements. The high number of business actors operating within this capital range suggests that the trade sector in South Denpasar is dominated by micro-scale enterprises. Most MSME actors in this region still rely primarily on personal capital as the main source of business funding. Nevertheless, some entrepreneurs also seek additional financing through loans from banks, Village Credit Institutions (LPDs), or cooperatives**.** Limited access to formal financial institutions—due to factors like lack of collateral or low financial literacy—has led many MSME owners to rely on personal funds. However, capital constraints often push them to seek external financing. This highlights the ongoing need for accessible funding options to support MSME growth and sustainability.

Description of Business Duration Variable

Table 3. Description of Business Duration Variable

No	Length of Business (Years)	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	1 – 5	38	39.18
2	6 – 10	35	36.08
3	11 – 15	19	19.59
4	16 – 20	4	4.12
5	>20	1	1.03
Amount		97	100

Source: Processed primary data, 2025

Based on Table 5, it can be seen that the majority of respondents have a business period of 1-5 years with a percentage of 39.18 percent. This is followed by a range of business periods of 6-10 years as many as 35 respondents with a percentage of 36.08 percent. The shortest business period is around 16-20 years and more than 20 years with percentages of 4.12 and 1.03 percent respectively. The large number of business actors who have been running their businesses for around 1-5 years is due to the pandemic a few years ago which caused these MSME actors to switch professions from their previous jobs.

Description of Technology Utilization Variables

Data collection was conducted through a questionnaire distribution method consisting of statements to be answered honestly by respondents. To determine the classification criteria for respondents' average scores, an interval calculation method was used. This was done by subtracting the lowest score from the highest score, and then dividing the result by the number of categories (5). So the measurement criteria for the description of the research variables will be as follows.

1.00 – 1.79 = Strongly disagree

1.80 – 2.59 = Disagree

2.60 – 3.39 = Less agree
3.40 – 4.19 = Agree
4.20 – 5.00 = Strongly agree

Based on the research results, it can be seen that the respondents' responses to each indicator of each variable are as follows.

Table 4. Description of Respondents' Assessment of the Technology Utilization Variable

No	Statement	Answer					Average Score	Criteria
		STS 1	TS 2	KS 3	S 4	SS 5		
1.	Technology helps increase my business productivity.	0	0	5	38	54	4.5	Strongly agree
2.	The technology I use contributes to increasing the sales volume of my products.	0	0	4	30	63	4.6	Strongly agree
3.	Technology helps me reach more customers.	0	0	6	34	57	4.52	Strongly agree
4.	Utilizing technology helps my business to continue operating and growing in the long term.	0	0	5	35	57	4.53	Strongly agree
5.	Leveraging technology allows me to adapt to market changes.	0	0	3	24	70	4.69	Strongly agree
6.	Technology makes operational processes in my business easier.	0	0	5	33	59	4.55	Strongly agree
7.	The use of technology contributes to increasing business revenue.	0	0	2	38	57	4.56	Strongly agree
Total average score							4.57	Strongly agree

Source: Processed primary data, 2025

Table 6 shows the variable of technology utilization measured by 7 statements as a whole has a total average score of 4.57 and is included in the strongly agree criteria. The highest average value of respondents' answers is shown in the statement "The use of technology allows me to adapt to market changes" of 4.69, indicating that most respondents strongly agree that technology helps them adjust to dynamic market conditions. This suggests that MSME actors in South Denpasar

feel that technology allows them to be more responsive to changing trends, consumer demands, and business developments. For instance, the use of social media for promotion or following digital trends enables their businesses to remain relevant and competitive. Furthermore, the lowest average value of respondents' answers is shown in the statement "Technology helps increase the productivity of my business" of 4.5. Although still categorized as "strongly agree", this result implies that respondents do not fully perceive a direct impact of technology on production efficiency or operational performance. This may indicate that while technology is viewed as important for adapting to the market, not all MSME actors have utilized it optimally to increase output, save time, or better manage business resources. The relatively lower score may also reflect limited understanding or access to more technical forms of technology. According to the study's findings, most respondents only use two to three digital applications for marketing and sales activities, despite the wide availability of various digital platforms such as social media and e-commerce. This shows that there are still barriers in digital literacy and the broader use of technology, especially in aspects related to operational efficiency and income growth.

Description of Income Variable

Table 5. Description of Income Variables

No	Respondents' Income (Rupiah)	Respondents of MSME Actors	
		Number of people)	Percentage (%)
1	1,000,000 – 5,000,000	9	9.28
2	5,000,001 – 10,000,000	32	32.99
3	10,000,001 – 15,000,000	26	26.80
4	15,000,001 – 20,000,000	11	11.34
5	>20,000,000	19	19.59
Amount		97	100

Source: Processed primary data, 2025

Table 7 shows that the income of MSMEs in the trade sector in South Denpasar is mostly in the range of IDR 5,000,001 - IDR 10,000,000, which is 32 respondents with a percentage of 32.99 percent. This is followed by respondents with an income of IDR 10,000,001 - IDR 15,000,000, which is 26 respondents with a percentage of 26.80 percent. The income with the fewest number of respondents is in the range of IDR 1,000,000 - IDR 5,000,000, which is 9 respondents with a percentage of 9.28 percent. If its being compared to the 2025 Regional Minimum Wage of Denpasar City, which is IDR 3,298,116.50 per month, it can be concluded that the majority of MSME actors in the trade sector in South Denpasar earn above the minimum wage. Additionally, there are 19 respondents (19.59%) with monthly incomes exceeding IDR 20,000,000,

further indicating that a significant portion of MSME actors in this sector have already reached a relatively high-income level.

Research Instrument Test Results

Validity Test

Table 6. Instrument Validity Test Results

Variables	Statement Items	rhitung	rtable	Information
Utilization of Technology (X3)	P1	0.662	0.361	Valid
	P2	0.645	0.361	Valid
	P3	0.703	0.361	Valid
	P4	0.821	0.361	Valid
	P5	0.607	0.361	Valid
	P6	0.742	0.361	Valid
	P7	0.658	0.361	Valid

Source: Processed primary data, 2025

Based on the results of the validity test in Table 8, it can be seen that the calculated r value for each statement instrument is greater than the r table of 0.361, so it can be concluded that each statement in this technology utilization variable is valid and suitable for use in research.

Reliability Test

Table 7. Instrument Reliability Test Results

No.	Variables	Cronbach's Alpha	N of items	Information
1.	Utilization of Technology (X3)	0.813	7	Reliable

Source: Processed primary data, 2025

Table 9 shows that the research instrument of the technology utilization variable has a Cronbach's Alpha coefficient of 0.813. From these results, it is concluded that the statements in this questionnaire are reliable because the Cronbach's Alpha value is greater than the significance value of 0.60.

Confirmatory Factor Analysis Results

Kaiser Meyer Oiki (KMO)

Table 8. KMO Test Results of Research Variables

No.	Factor	KMO	Sig. Chi-square
1	Utilization of Technology (X3)	0.796	< 0.001

Source: Processed primary data, 2025

Based on the results of the KMO test on the Technology Utilization variable (X_3) shown in Table 10, the KMO value was obtained as 0.796 and the Chi-square significance <0.001. The KMO value is greater than 0.5, which indicates that the data is quite feasible for factor analysis. In addition, the Chi-square significance value of <0.001 indicates that the correlation between items in the variable is significant. Thus, the instrument used to measure the Technology Utilization variable can be said to be construct valid.

Measures of Sampling Adequacy (MSA)

Table 9. MSA Value

No	Variables	Indicator	MSA Value
1	Utilization of Technology (X3)	$\mathbf{X_3}.1$	0.805
		$\mathbf{X_3}.2$	0.813
		$\mathbf{X_3}.3$	0.767
		$\mathbf{X_3}.4$	0.825
		$\mathbf{X_3}.5$	0.809
		$\mathbf{X_3}.6$	0.774
		$\mathbf{X_3}.7$	0.790

Source: Processed primary data, 2025

Table 11 shows the results of the MSA test of each variable. The technology utilization variable is formed from 4 indicators with 7 statements covering increasing productivity, increasing sales volume, helping business continuity, and increasing income. Based on the results of the MSA test, it can be seen that each indicator of the technology utilization variable has an MSA value above 0.5 with a range between 0.767 and 0.825, this means that each model is feasible to use in the analysis.

Data Analysis Results

Descriptive Statistical Analysis

Table 10. Results of Descriptive Statistical Analysis

Variables	N	Min	Max	Mean	Std. Deviation
Ln_Y	97	14.51	17.62	16,3259	,59993
Ln_X1	97	13.46	17.37	15,5719	,67600
Ln_X2	97	,00	3.22	1.8893	,66647
Ln_X3	97	,10	1.80	1,5802	,27603
Valid N (listwise)	97				

Source: Processed primary data, 2025

Table 12 shows the number of research observations, which is 97 data. According to the table results, it is known that the income variable (Y) has a minimum value of 14.51 and a maximum of 17.62, with an average (mean) of 16.33 and a standard deviation of 0.60. This shows that the variable values are spread relatively evenly around their average, without any indication of extreme deviation. The capital variable (X1) shows a minimum value of 13.46 and a maximum of 17.37, with a mean of 15.57 and a standard deviation of 0.68. This variable has a slightly higher level of spread than income. For the variable of business duration (X2), the minimum value recorded was 0.00, which came from the transformation of the original value of 1 (because ln(1) = 0. The maximum value for business duration was 3.22, with an average of 1.89 and a standard deviation of 0.67, which indicates that there is quite a

wide variation in the data. The variable of technology utilization (X3) has a smaller range compared to the other variables, namely a minimum of 0.10 and a maximum of 1.80, with a mean value of 1.58 and the lowest standard deviation of 0.28.

Multiple Linear Regression Analysis

Table 11. Multiple Linear Regression Analysis Test Results

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5,188	,818		6,343	<,001
	Ln_X1	,671	,053	,757	12,653	<,001
	Ln_X2	,159	,054	,177	2,956	,004
	Ln_X3	,241	,117	,111	2,060	,042

a. Dependent Variable: Ln_Y

Source: Processed primary data, 2025

Based on the analysis results in Table 13, the following regression model equation was obtained.

LnY = 5.188 + 0.671LnX1 + 0.159LnX2 + 0.241LnX3

Std. Error = (0.818) (0.053) (0.054) (0.117)

t_{hitung} = (6,343) (12,653) (2,956) (2,060)

Sig. t = (<0.001) (<0.001) (0.004) (0.042)

From the results of the regression equation model above, the conclusions that can be drawn are as follows:

1) The constant value of 5.188 states that if all independent variables are zero, then the natural logarithm value of income (LnY) is 5.188.
2) The regression coefficient value of Capital (LnX1) of 0.671 has a positive relationship with income, indicating that a 1% increase in business capital will increase business income by 0.67%, assuming other variables remain constant. This variable has a significance value <0.001, so it has a statistically significant effect on income.
3) The regression coefficient value of Business Length (LnX2) of 0.159 has a positive relationship with income, indicating that every 1% increase in business length will increase income by 0.159%. This variable is also significant at the 0.004 level.
4) The regression coefficient value of Technology Utilization (LnX3) of 0.241 has a positive relationship with income, indicating that if technology utilization

increases by 1%, it will increase income by 0.241%. This variable is also significant at the 0.042 level.

Classical Assumption Test

1) Normality Test

Table 12. Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			97
Normal Parameters[a,b]	Mean		,0000000
	Std. Deviation		,31028259
Most Extreme Differences	Absolute		,066
	Positive		,066
	Negative		-,051
Test Statistics			,066
Asymp. Sig. (2-tailed)[c]			,200d
Monte Carlo Sig. (2-tailed)[d]	Sig.		,368
	99% Confidence Interval	Lower Bound	,355
		Upper Bound	,380

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 926214481.

Source: Processed primary data, 2025

The normality test aims to test whether in the regression model, the interfering variables or residuals have a normal distribution (Ghozali, 2016:154). The test was carried out using the Kolmogorov-Smirnov (KS) statistical test, where the data is declared normal if the Asymp Sig. (2-tailed) coefficient is greater than the significance value of 0.05. Based on Table 10, it can be seen that the Kolmogorov Smirnov (KS) statistical test value is 0.066 and the Asymp. Sig. (2-tailed) value is 0.200. The test results show an Asymp. Sig. (2-tailed) value that is greater than the significance level of 0.05. Thus, it can be concluded that the residual data is normally distributed.

2) Multicollinearity Test

The multicollinearity test aims to test whether the regression model finds a correlation between independent variables. A good regression model should not have a correlation between independent variables. The multicollinearity test is carried out by looking at the VIF (Variance Inflation Factor) value of less than 10 and/or the tolerance value of more than 10% to conclude that there is no

multicollinearity. The results of the multicollinearity test can be seen in Table 15 below.

Table 13. Multicollinearity Test Results

Coefficients[a]			
Model		Collinearity Tolerance	Statistics VIF
1	(Constant)		
	Ln_X1	,804	1,243
	Ln_X2	,801	1,248
	Ln_X3	,992	1,008

a. Dependent Variable: Ln_Y

Source: Processed primary data, 2025

Based on Table 15, it shows that all variables have VIF values below the threshold of 10, namely VIF for Ln_X1 (Capital) = 1.1243; Ln_X2 (Business Length) = 1.248; and Ln_X3 (Technology Utilization) = 1.008. Each variable also shows a tolerance value above 0.10. Thus, it can be concluded that there is no multicollinearity between the independent variables in this regression model.

3) Heteroscedasticity Test

The heteroscedasticity test is used to determine whether the regression model has unequal variances from the residuals of all observations in the regression model. The heteroscedasticity test is carried out using the Glejser test. If the significant value is greater than 0.05, the regression model is said to be free from heteroscedasticity. The results of the heteroscedasticity test of the study are in Table 16.

Table 14. Heteroscedasticity Test Results

Coefficients[a]					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,147	,482		2,382	,019
	Ln_X1	-,057	,031	-,206	-1,817	,072
	Ln_X2	,024	,032	,088	,770	,443
	Ln_X3	-,040	,069	-,059	-,575	,567

a. Dependent Variable: ABS_RES

Source: Processed primary data, 2025

Based on Table 16, the results of the heteroscedasticity test show that all significance values of the independent variables are greater than 0.05 with Ln_X1

(Capital) = 0.072; Ln_X2 (Business Length) = 0.443; and Ln_X3 (Technology Utilization) = 0.567. This indicates that there is no heteroscedasticity problem in the model.

Determination Coefficient Test (Adjusted R Square)

Table 15. Determination Coefficient Test Results

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,856	,733	,724	,31525

a. Predictors: (Constant), Ln_X3, Ln_X1, Ln_X2

Source: Processed primary data, 2025

Based on the analysis results in Table 17, it can be seen that the coefficient of determination (Adjusted R square) = 0.724, which means that the variables of capital, length of business, and use of technology together influence the income variable (Y) by 72.4 percent and the remaining 27.6 percent is influenced by other factors not included in the study.

Simultaneous Regression Coefficient Test (F Test)

Table 16. Simultaneous Regression Test Results (F Test)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25,310	3	8,437	84,891	<,001[b]
	Residual	9,242	93	,099		
	Total	34,552	96			

a. Dependent Variable: Ln_Y

b. Predictors: (Constant), Ln_X3, Ln_X1, Ln_X2

Source: Processed primary data, 2025

The results of the F test show that the F count of 84.891 is greater than the F table of 2.70 (84.891 > 2.70) and the significant value of <0.001 is smaller than 0.05, so this means that capital, length of business, and use of technology simultaneously have a significant effect on the income of MSMEs in the trade sector in South Denpasar.

Partial Regression Coefficient Test (t-Test)

Table 17. Partial Regression Test Results (t-Test)

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	5,188	,818		6,343	<,001
Ln_X1	,671	,053	,757	12,653	<,001
Ln_X2	,159	,054	,177	2,956	,004
Ln_X3	,241	,117	,111	2,060	,042

a. Dependent Variable: Ln_Y

Source: Processed primary data, 2025

Based on the results of the t-test in Table 19, the influence of each variable can be explained as follows.

1. The capital variable has a t-value of 12.653 which is greater than the t-table of 1.986 (12.653 > 1.986) and a significance value of <0.001 smaller than the α value of 0.05 (<0.001 <0.05), then H1 is accepted and H0 is rejected. So it can be concluded that the capital variable partially has a positive and significant effect on the income of MSMEs in the trade sector in South Denpasar.
2. The variable of business duration has a t-value of 2.956 which is greater than the t-table of 1.986 (2.956 > 1.986) and a significance value of 0.004 which is smaller than the α value of 0.05 (0.004 < 0.05), so H1 is accepted and H0 is rejected. So it can be concluded that the variable of business duration partially has a positive and significant effect on the income of MSMEs in the trade sector in South Denpasar.
3. The technology utilization variable has a t-value of 2.060 which is greater than the t-table of 1.986 (2.060 > 1.986) and a significance value of 0.042 which is smaller than the α value of 0.05 (0.042 < 0.05), so H1 is accepted and H0 is rejected. So it can be concluded that the technology utilization variable partially has a positive and significant effect on the income of MSMEs in the trade sector in South Denpasar.

Discussion of Research Findings

The Simultaneous Effect of Capital, Business Duration, and Technology Utilization on the Income of MSME Actors in the Trade Sector in South Denpasar

The results of the analysis show that capital, business duration, and technology utilization simultaneously have a significant effect on the income of MSME actors in the trade sector in South Denpasar. These findings indicate that an increase in capital, business experience, and effective use of technology can collectively enhance the income level of MSME actors.

MSME income refers to the total revenue earned by business actors from selling goods or services to consumers over a specific period. It reflects the outcome of operational activities and serves as the main source for sustaining and developing their enterprises. Several factors can influence the income of MSME actors in the trade sector, including capital, business duration, and technology utilization. This implies that income growth among MSME actors in South Denpasar can be achieved through optimal capital allocation, extended business experience, and effective integration of technology into product marketing and sales processes.

This is supported by research from Wulandari & Subiyantoro (2023), which found that capital and business duration significantly and positively influence MSME income. Similarly, the study by Zain et al. (2023) states that the use of information technology in marketing (e-commerce) significantly increases average income compared to the pre-digital adoption period.

The Effect of Capital on the Income of MSME Actors in the Trade Sector in South Denpasar

The analysis shows that the significance value for capital is <0.001, which is less than 0.05, with a t-value greater than the critical value (12.653 > 1.986). This result indicates that capital has a positive and significant partial effect on the income of MSME actors in the trade sector in South Denpasar. Adequate business capital facilitates higher income by enabling the purchase of raw materials, equipment, and covering operational expenses, as well as supporting innovation and business expansion. Without sufficient capital, it is difficult for a business to develop optimally. Hence, capital becomes an essential element that must be thoroughly prepared to ensure sustainable operations (Ma'rifah & Aisyah, 2023).

This finding is reinforced by an interview with Mrs. Florence, one of the MSME respondents in the trade sector in South Denpasar, conducted on May 20, 2025, at 1:00 PM. She stated:

"In my opinion, capital is very important, especially when starting a business. It's not just about buying inventory but also for renting space, paying for electricity, and covering other operational needs. Without enough capital, it's hard to grow the business. Based on my experience, the more capital we have, the greater the potential income, because we can stock more goods and serve more customers. So before starting a business, we really have to be financially ready."

This testimony supports the research finding that increasing capital boosts MSME income. These results align with those of Safira et al. (2024) and Puspika &

Purnomo (2024), who found that capital significantly influences MSME income in Jakarta. Capital is a vital component for establishing, sustaining, and expanding a business.

The Effect of Business Duration on the Income of MSME Actors in the Trade Sector in South Denpasar

The analysis revealed a significance value of 0.004 for business duration, which is below the 0.05 threshold, with a t-value greater than the critical value (2.956 > 1.986). This indicates that business duration has a positive and significant partial effect on the income of MSME actors in the trade sector in South Denpasar. In other words, the longer a business operates, the higher the income tends to be.

Business duration affects income levels as longer operational time equips MSME actors with more experience, knowledge of consumer behavior, and better management skills. This allows them to manage, produce, and market their products more effectively, thereby increasing income.

This is supported by an interview with Mr. Roni, a respondent in the study, conducted on April 17, 2025, at 11:40 AM, who stated:

"From my experience, the longer we run a business, the better we understand the market, customers, and business management. Income also improves because we know the right strategies. In the beginning, income was low due to lack of experience and fewer customers. But now, after 9 years, my income is more stable and has increased significantly."

This finding aligns with studies by Alkumairoh & Warsitasari (2022), Salim & Rahmadhani (2024), Widiyanti & Octavia (2024), and Aprila et al. (2023), which all confirm that business duration positively and significantly affects MSME income.

The Effect of Technology Utilization on the Income of MSME Actors in the Trade Sector in South Denpasar

The analysis found that the significance value for technology utilization was 0.042, which is below the 0.05 threshold, with a t-value higher than the critical value (2.060 > 1.986). This suggests that the use of technology has a positive and significant partial effect on MSME income in the trade sector in South Denpasar. This means that optimal use of technology in product marketing and sales can increase income for MSME actors.

The digital transformation of MSMEs has become a key milestone in modern business. Through e-commerce, social media, and fintech services, MSMEs are now able to overcome traditional limitations. These technologies help create a more

competitive and sustainable business environment, allowing MSMEs to meet consumer demands and adapt to ongoing market changes (Jurnalita, 2024).

This is further supported by an interview with Ms. Reyska Amanda, conducted on April 30, 2025, at 3:00 PM, who stated:

"Nowadays, it's not enough to just rely on physical store sales. I used to sell only to friends and neighbors, but then I started promoting on social media like Instagram and TikTok. Orders increased significantly because I reached more customers. So yes, using social media has really helped, and my income went up a lot. With technology, you can reach beyond your immediate area. It's a big help if used wisely."

These insights support the conclusion that technology plays an important role in increasing MSME income. This finding is consistent with Implementation et al. (2021), who found that information technology significantly influences MSME income. Research by Nugroho (2024) in Serut Hamlet also demonstrated that 80% of MSME actors experienced increased income after using digital technology for product marketing. Akhmad & Purnomo (2021) similarly found that technology adoption through e-commerce platforms increased average orders by 15%, production volume, and overall MSME income.

CONCLUSION

Based on the findings of this study on the influence of capital, business duration, and technology utilization on the income of MSME actors in the trade sector in South Denpasar, the following conclusions can be drawn:

1. Capital, business duration, and technology utilization simultaneously have a significant effect on the income of MSME actors in the trade sector in South Denpasar.
2. Capital, business duration, and technology utilization each have a positive and significant partial effect on the income of MSME actors in the trade sector in South Denpasar.

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