ISSN 1816-6075 (Print), 1818-0523 (Online)
Journal of System and Management Sciences
Vol. 15 (2025) No. 4, pp. 138-156
DOI:10.33168/JSMS.2025.0410

Drivers of Growth and Sustainability in Rural Indonesian MSMEs: An Empirical Study in Anggeraja Sub-district

Muhlis Ruslan[1], Chahyono[1], Abd. Haris[2], Zulkifli Makkawaru[3], Abdul Karim[1], Maya Stepani[1]

[1] Faculty of Economic and Business, Universitas Bosowa, Makassar, Indonesia

[2] STIE Wira Bhakti, Makassar, South Sulawesi, Indonesia

[3] Faculty of Law, Universitas Bosowa, Makassar, Indonesia

muhlisruslan@universitasbosowa.ac.id, chahyono@universitasbosowa.ac.id, harisbima69@gmail.com, zulkifli.makkawaru@universitasbosowa.ac.id, abdul.karim@universitasbosowa.ac.id, maya.stepani22@gmail.com

Abstract. This study investigates factors influencing the growth and sustainability of Micro, Small, and Medium Enterprises (MSMEs) in Anggeraja Sub-district, Enrekang Regency, Indonesia. Using a quantitative approach, we surveyed 126 MSME owners across 15 villages. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze the relationships between business actors' mindsets, market access, MSME growth, and business sustainability. Results indicate that changes in mindset and market access positively influence MSME growth (R2 = 0.534) and business sustainability (R2 = 0.670). The study contributes to understanding MSME development in rural Indonesian contexts and provides insights for policymakers to support sustainable MSME growth.

Keywords: change in mindset; market access; growth of MSMEs; business sustainability

1. Introduction

Anggeraja Sub-district is located in Enrekang Regency, South Sulawesi Province, Indonesia. This area is known for its distinctive rural atmosphere and strong local culture. Here are some geographical and social contexts of Anggeraja District. Located in the highlands of South Sulawesi its area has a varied topography, with mountains and hills dominating the landscape. This affects the type of soil and agricultural patterns common in the area. As part of the highland area, Anggeraja Sub-district has a tropical climate with relatively cool temperatures compared to the lowlands. The rainy and dry seasons may differ from other regions of South Sulawesi. The majority of Anggeraja residents are involved in the agricultural sector.

The fertile soil and supportive climate allow for the cultivation of various crops such as rice, corn, soybeans, and horticultural crops. Coffee is also an important commodity in this area. The population of Anggeraja is generally Bugis and Toraja, so local culture and traditions greatly influence their daily lives. Traditional customs, ceremonies, and rituals are often an integral part of people's lives. Infrastructure in the Anggeraja Sub-district may not be as good as in urban areas. Access to transportation may be limited, and roads may be limited to undeveloped village roads. This can affect access to markets, health care, and education. In addition to agriculture, some residents may engage in handicrafts, local trade, and small businesses. Agricultural economies often rely on traditional methods and depend on seasonal harvests.

With its hilly topography and surrounding forests, Anggeraja Sub-district is a highly biodiverse environment. Conservation and management of natural resources are essential to maintaining the balance of the ecosystem. Anggeraja District is an example of rural Indonesia that has unique natural and cultural riches but also faces challenges in terms of infrastructure development and accessibility.In the last five years (2019-2023) the economic structure of Enrekang Regency has been dominated by business categories, including agriculture, forestry, and fisheries; processing industry; construction; and wholesale and retail trade, car and motorbike repairs (Wibowo et al, 2024). This can be seen from the role of each business field in the formation of Enrekang's GRDP (Bahtiar et al, 2021). The largest role in the formation of Enrekang's GRDP in 2023 is produced by the MSME business field of wholesale and retail trade, car and motorbike repair at 7.82 percent (down from 8.09 percent in 2019), the large role of various economic business fields in producing Goods and services greatly determine the economic structure of a region (Karim & Syamsuddin, 2024). The economic structure formed from the added value created by each business field describes how much dependence a region has on the production capacity of each business field (Enrekang, 2023).

Enrekang Regency is a level II region in South Sulawesi Province, Indonesia. It consists of 12 definitive sub-districts, and there are 129 Sub-districts/villages with an area of 1,786.01 km². The territorial boundaries of this regency are to the north with Tana Toraja Regency, to the south with Luwu Regency, to the east with Sidrap Regency, and to the west with Pinrang Regency. Of the 12 Sub-districts in Enrekang Regency, there is one district. Anggeraja Sub-district has 15 villages with population numbers as shown in the table below:

Table 1. Population and sex ratio in Anggeraja Sub-district

Village	Male	Female	Total
Tindalun	473	512	985
Bamba Puang	1.178	1,218	2,396
Tanete	1.673	1,642	3,315
Lakawan	1.765	1,829	3,594
Siambo	714	656	1,370
Singki	844	803	1,647
Mataram	1.539	1,505	3,044
Pekalobean	1.288	1,189	2,477
Bubun Lamba	809	777	1,586

Salu Dewata	678	652	1,330
Mampu	824	791	1,615
Batu Noni	1.121	1,112	2,233
Saruran	540	570	1,110
Tampo	780	740	1,520
Mandatte	417	399	816
Total	**14,643**	**14,395**	**29,038**

Source: BPS Enrekang Regency, 2024.

Table 1 above explains that the population in Anggera Sub-district has a lot of potential that can be developed, especially in developing MSMEs and human resources in managing businesses (Chahyono et al, 2023). The diversity of geographical conditions in each region causes variations in superior commodities which provide opportunities for development in each region (Maulina & Fordian, 2018). Thus, increasing business types can increase the sustainable growth of MSMEs and open up many job opportunities which in turn have an impact on Gross Regional Domestic Product (GRDP). In Anggeraja Sub-district many types of MSME businesses sell various kinds of products (Hasniati et al, 2023). According to data from the Department of Cooperatives, Small and Medium Enterprises, the number of cooperatives by type (KUD, KPR, Non-KUD, and KOPTAN) active in Anggeraja Sub-district in 2023 will be 20 and have legal entities. Furthermore, there are 115 MSME businesses consisting of; 68 shops/grocery stalls, 34 restaurants, and 53 stalls/food stalls.

Faster and more effective market access is the key to developing MSMEs (Micro, Small, and Medium Enterprises) in rural areas of Indonesia. Several driving factors can help MSMEs in rural areas in Indonesia, especially in the Anggeraja Sub-district to gain faster market access. The use of information and communication technology, one of which is E-commerce and Digital Platforms. The use of e-commerce platforms such as Tokopedia, Bukalapak, and Shopee allows MSMEs to sell their products online, reaching customers outside their area. Social media such as Facebook, Instagram, and WhatsApp can be used for product promotion and marketing widely and effectively.

2. Literature Review

Micro, small, and medium enterprises have an important role in national economic growth (Mukherjee, 2018; Mukherjee et al, 2024). Economic growth in the second quarter of 2023 will be largely driven by contributions from small and medium-sector players. The role of the MSME sector is to support the performance of the national economy (Diawati et al, 22024), this is a concern for stakeholders to consistently improve the entrepreneurial ecosystem for MSME business actors sustainably (Ruslan et al, 2023). The business sector has an important role in the national economy to create jobs and people's income (Karim et al, 2021). MSMEs in Indonesia must rise with a spirit of novelty and innovation and accelerate after COVID-19.

Stakeholder support and acceleration to encourage inclusive and sustainable economic growth (Lokshina et al, 2021). The revival of MSMEs can be realized through; a) Consistently improving product quality and added value to increase competitiveness; b) Innovation and acceleration need to be encouraged in facing developments in the digitalization era and market trends, supply chain networks, and access to financing; and c) Synergy between ministries/institutions to encourage market expansion for MSME products (Daga et al, 2024). The national economy opens up business and employment opportunities so the target for 2024 is 4.4 million new and quality jobs from the MSME sector (Karim et al, 2023). This can be achieved because business actors can innovate, adapt, and collaborate with various parties, especially the creative economy industry. Research such as Tambunan (2019) has explored the development of MSMEs in the urban context in Indonesia, but there is still a lack of research on the specific factors that drive the growth and sustainability of MSMEs in rural areas such as Anggeraja Sub-district. This study aims to address this gap by understanding current market trends and needs and adapting products to be more relevant and attractive to consumers. Encouraging MSMEs

in rural areas can access wider markets more quickly, increase business opportunities, and contribute to local economic growth.

The Covid-19 pandemic has brought the national and global economy towards an economic recession (Susan, 2020). This is characterized by negative national and global economic growth or contraction (Mariyudi, 2019). The national economy itself only experienced a contraction in the second quarter of 2020 with economic growth of -5.3%. This contraction was mainly caused by a decrease in household consumption due to social restrictions to prevent COVID-19, a decrease in investment spending including for construction and acquisition of fixed assets, and a decrease in the realization of government spending, including spending on goods (Somohano-Rodríguez et al, 2022). Besides that, there was a quite sharp decline in foreign trade. The trough of decline in economic growth has been passed in the second quarter, but COVID-19 will still restrain economic growth in the third and fourth quarters (Hutahayan & Yufra, 2019). The government is trying to improve national economic performance in the third quarter and it is hoped that economic growth in 2020 will be around -0.4% to 1%.

One of the sectors that was hit hard by the COVID-19 pandemic was micro, small, and medium enterprises (MSMEs), which also caused the national economy to decline (Achmad et al, 2023). This can be understood because MSMEs have a very large contribution to the national economy (Mardjuni et al, 2022). Data from the Ministry of Cooperatives, Small and Medium Enterprises of the Republic of Indonesia for 2018. The number of MSMEs is 64.2 million or 99.99% of the number of business actors in Indonesia. The workforce absorption capacity of MSMEs is 117 million workers or 97% of the workforce absorption capacity of the business world. Meanwhile, the contribution of MSMEs to the national economy (GDP) was 61.1%, and the remaining 38.9% was contributed by large business actors, whose number was only 5,550 or 0.01% of the total number of business actors (Hidayat et al, 2024).

MSMEs are dominated by micro business actors, numbering 98.68% with a labor absorption capacity of around 89%. Meanwhile, the contribution of micro businesses to GDP is only around 37.8%. From the data above, Indonesia has the potential for a strong national economic base because the number of MSMEs, especially micro businesses, is very large and the labor absorption capacity is very large (Karim et al, 2023). The government and business actors must raise the 'class' of micro businesses to medium businesses (Akhmad et al, 2023). This business base has also proven strong in facing the economic crisis. Micro businesses also have fast transaction turnover, use domestic production, and are in touch with the community's primary needs (Esthi & Setiawan, 2023). The government is aware of the potential of MSMEs, therefore, in recent years, the government has taken policies to increase the capacity of micro and small businesses so that they can be upgraded to medium-sized businesses (Abduh et al, 2024).

There is a need to transfer business strategy management knowledge from universities to MSMEs. Overcoming problems related to human resource finance, marketing, and organizational management in decision-making in supporting MSMEs (AlZayani et al, 2024). MSME business practices can be sustainable by implementing entrepreneurial marketing behavior (Maksum et al, 2020). Entrepreneurial motivation, and implementation of the role of cooperatives and SMEs, in the promotion mix positively influence the strengthening of SMEs and sustainable economic efforts. By strengthening MSMEs, this research recommends strengthening sustainable MSMEs in Anggeraja Sub-district, Enrekang Regency, South Sulawesi, Indonesia. Thus, further research is needed to examine (1) the Formulation of the concept of changing the mindset of MSME actors in encouraging the growth of MSMEs; (2) the Formulation of the concept of market access for MSME products towards MSME growth; and (3) Formulation of the concept of local economic growth to support strengthening the sustainability of MSME businesses (Diawati et al, 2024).

3. Data and Methodology

In the Methods section: "To assess potential common method bias, we conducted Harman's single-factor test (Podsakoff et al., 2003). The results showed that no single factor accounted for more than 50% of the variance, suggesting that common method bias is not a significant concern in this study.

The data collection methods used in this research are: (1) Observation, carried out to observe the conditions and characteristics of business actors, (2) Questionnaires carried out using a questionnaire instrument for respondents, and (3) Documentation, this research uses various related documents. with the situation and conditions of business actors in Anggeraja Sub-district. The population in this study was 185 MSMEs. The sample in this study used simple random sampling, meaning that all elements in the population have the same chance of being selected randomly (Nursini, 2020). A sample of 126 was taken from 185 MSME populations, taking into account the questionnaire error rate of 5% of the total number of MSMEs in Anggeraja Sub-district with the following formulation:

$$n = \frac{N}{1 + N.e^2} \qquad (1)$$

Where n is the sample size, N is the population size, and e is the 5% error rate squared. Based on this formulation, the size of the sample withdrawal is:

$$n = \frac{185}{(1 + (185 \times 0.0025))}$$

$$n = \frac{185}{(1 + 0.4625)}$$

$$n = \frac{185}{1.4625}$$

$$n = 126$$

Data analysis in this research is SEM PLS analysis, there are two types of variables, namely latent variables and manifest variables. Latent variables are variables that cannot be measured directly and can be measured with one or more measurement indicators, while manifest variables are variables that can be measured directly and can be used to measure latent variables. The flow diagram scheme in this research is as follows:

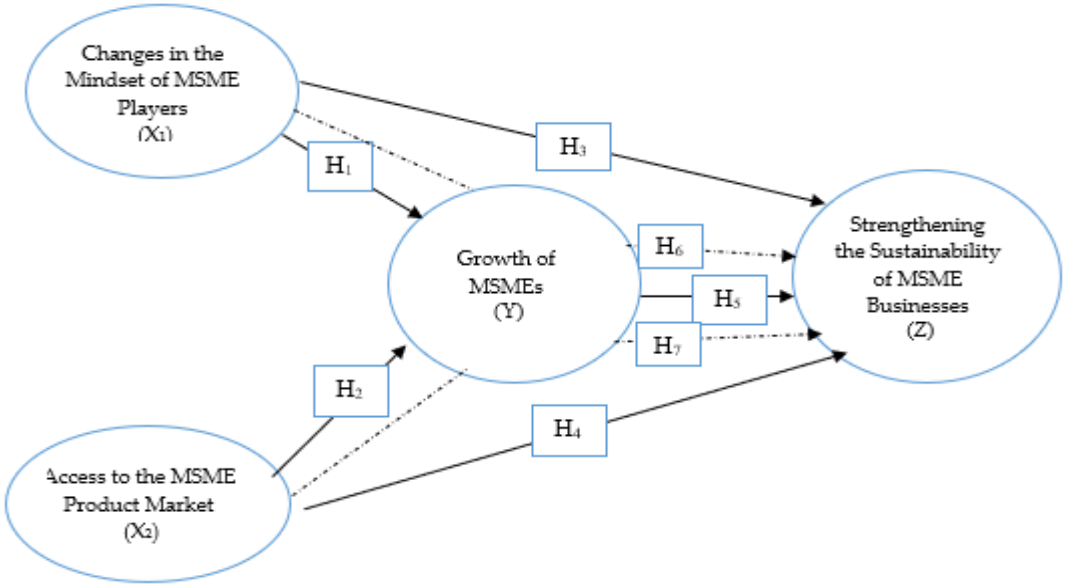

Fig.1: Partial least squares analysis research
Source: Author's findings, 2024.

Figure 1 above shows the direct influence of exogenous variables on endogenous variables which are expressed by path coefficients. Next, x_1 is a change in the mindset of MSME business actors, x_2 is market access for MSME products, and Y is MSME growth. Meanwhile, Z is strengthening the sustainability of MSME businesses in the Anggeraja Sub-district. Furthermore, H_1 influences x_1 on Y, and H_2 influences $x_2$on Y. H_3 influences $x_1$on Z, H_4 influences x_2 on Z, H_5 influences Y on Z, H_6 influences H_1 on Z through Y, and H_7 influences x_2 on Z through Y.

SEM PLS analysis, there are two types of variables, namely latent variables and manifest variables. Latent variables are variables that cannot be measured directly and can be measured with one or more measurement indicators, while manifest variables are variables that can be measured directly and can be used to measure latent variables. In this research, the latent variable, namely variable x_2 (UMKM product market access) with indicators of the availability of MSME product exhibition facilities, advertising promotions online, promotions through brochures, banners, and the like, and promotions through direct sales.

Manifest variables, namely Y (MSME growth) which is measured by indicators of human resource quality, an increasing number of workers, decreasing poverty levels, and mastery of digital technology; Z (strengthening the sustainability of MSME businesses) which is measured by the availability of product exhibition facilities, online and offline promotions, coaching and supervision of related institutions, and workshops on online marketing methods (Pasaribu et al, 2023).

The relationship between each variable is shown using a structural equation function model between exogenous and endogenous latent variables as follows:

$$x_1 = \lambda_{11}\zeta_1 + \delta_1 \quad (2)$$

$$x_2 = \lambda_{21}\zeta_1 + \delta_2 \quad (3)$$

$$n_1 = y_{11}\zeta_1 + y_{12}\zeta_2 + y_{13}\zeta_3 + \zeta_1 \quad (4)$$

$$n_2 = y_{21}\zeta_2 + y_{22}\zeta_2 + y_{23}\zeta_3 + \beta_{21}n_1 + \zeta_2 \quad (5)$$

Where x_1 is the change in mindset of MSME business actors, x_2 is market access for MSME products, n_1 is the growth of MSMEs, n_2 is strengthening the sustainability of SME businesses, ζ_1 is the influence of other factors on the growth of MSMEs, ζ_2 is the influence of other factors on strengthening the sustainability of SME businesses, y is the latent path coefficient exogenous to the intermediate variable, and β is the intermediate latent path coefficient to the endogenous latent. PLS-SEM was chosen due to its suitability for exploratory research and ability to handle complex models with multiple constructs (Hair et al., 2017). Thus, the SEM PLS model specifications that will be estimated in this research are as follows:

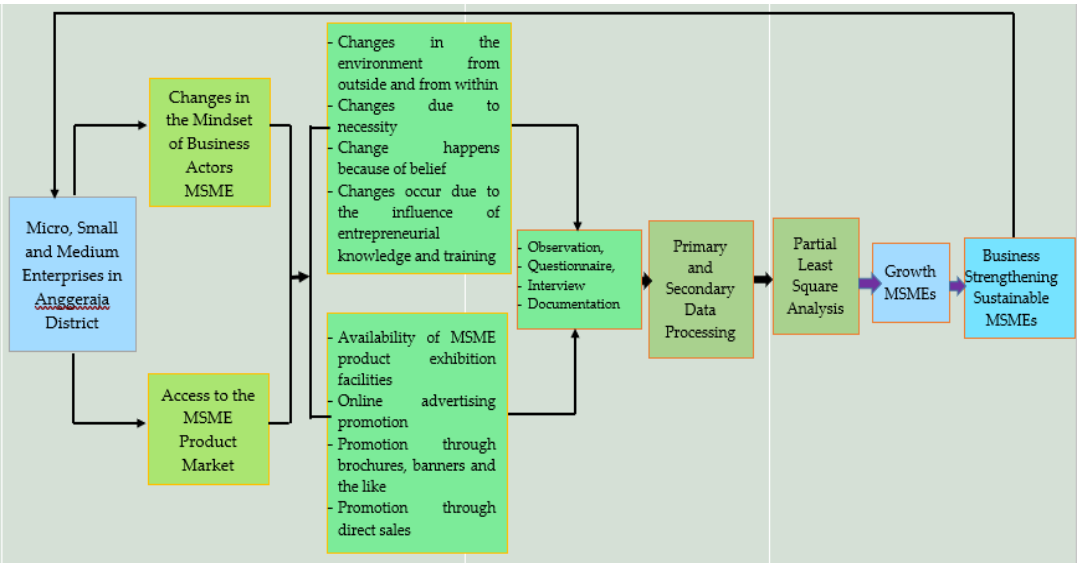

Fig.2: Model SEM PLS.

Source: Author's findings, 2024.

A valid instrument is defined as a measuring tool to obtain valida data. The technique used to measure the validity of questionnaire questions is correlation product moment by correlating the question items and the total. Reliability testing is carried out to ensure whether the instrument used is reliable or not. Reliability is the extent to which measurement results using the same object will produce the same data. In this research, validity testing was carried out using the product momentapproach.

$$r_{xy} = \frac{n\sum X_i y_i - \sum X_i \sum y_i}{\sqrt{n\sum X^2{}_i - (\sum X^2{}_i)^2}\sqrt{n\sum y^2{}_i - (\sum y_i)^2}} \quad (6)$$

Where r_{Xy} is the correlation coefficient, n is the number of respondents, $\sum X$ is the item score, $\sum y$ is the total number of scores obtained for each respondent, $\sum_X 2$ is the sum of the squares of the items, $\sum_y 2$ is the sum of the squares of the total scores obtained by each respondent, and $\sum xy$ is the number of times the questionnaire item score is multiplied and the total score obtained from the respondent. Because this research is confirmatory, the factor loading limit used is 0.7. Convergent values for measuring factor loadings above 0.7 are highly recommended, however, if factor loadings are between 0.5 - 0.60 they can still be tolerated as long as the model is still in the development stage. Next, to calculate the t value from r, use the following formula:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r2}} \quad (7)$$

Where, if thitung > ttabel it is said to be significant or suitable for use in hypothesis testing, and otherwise thitung ≤ ttabel means it is not significant. In this research, the validity calculation of instrument items was carried out using the PLS Algorithm model and indicator loading values. The discriminant value is useful for assessing whether a variable has adequate discriminant validity, namely by comparing the correlation of the indicator with the target construct, which must be greater than the correlation with other constructs. If the correlation of the indicator has a higher value than the correlation of the indicator with other constructs, then it is said that the variable has high discriminant validity.

A high composite reliability value indicates good consistency of each indicator in the latent variable to measure that variable. The criteria for a composite reliability value > 0.7 indicates that the variable has good internal consistency. Furthermore, the reliability test is strengthened by Cronbach's alpha value. Cronbach's alpha reliability test limits > 0.7. The Average Variance Extracted (AVE) value shows that the variance value of each indicator in the construct that can be captured by that variable is greater than the variance caused by measurement error. The AVE value is expected to be > 0.5. Furthermore, to meet the criteria for convergent validity, the AVE value can be formulated as follows:

$$\text{AVE} = \frac{\sum_{i=1}^{2} \lambda i}{n} \quad (8)$$

Where AVE is the average percentage of variance scores obtained from latent variable extraction, λ is the standardized factor loading, and ì is the number of indicators.

4. Research and Discussion

4.1 Respondent characteristics

Table 2. Respondent's gender

Gender	Number of Respondents (Person)	Percentage (%)
Male	21	17.00
Female	105	83.00
Total	126	100.00

Source: Source: Author's findings, 2024.

Table 3. Respondent's education level

Gender	Total of respondents (Person)	Percentage (%)
Bachelor Degree (S1)	24	19.00
Diploma (D4)	3	2.00
Diploma (D3)	2	2.00
High School (SMA)	64	51.00
Junior High School (SMP)	33	26.00
Total	126	100.00

Source: Author's findings, 2024.

Table 4. Respondent's age

Age (Years)	Total of respondents (Person)	Percentage (%)
17 - 25	5	4.00
26 - 30	9	7.00
31 - 50	74	59.00
51 - 60	35	28.00
61 - 70	3	2.00
Jumlah	126	100.00

Source: Author's findings, 2024.

4.2 Testing the outer model

The outer model is a model that specifies the relationship between the latent variable and its indicators or it could be said that the outer model defines how each indicator is related to the latent variable. The outer model is interpreted by looking at several things, including convergent validity value, discriminant validity value, composite reliability, Average Variance Extracted (AVE), and Cronbach's alpha.

The convergent value measures the magnitude of the loading factor for each construct. Loading factors above 0.70 are highly recommended, however, loading factors between 0.5 - 0.60 can still be tolerated as long as the model is still in the development stage. The full PLS Algorithm model and indicator loading values are presented in the figure and table below:

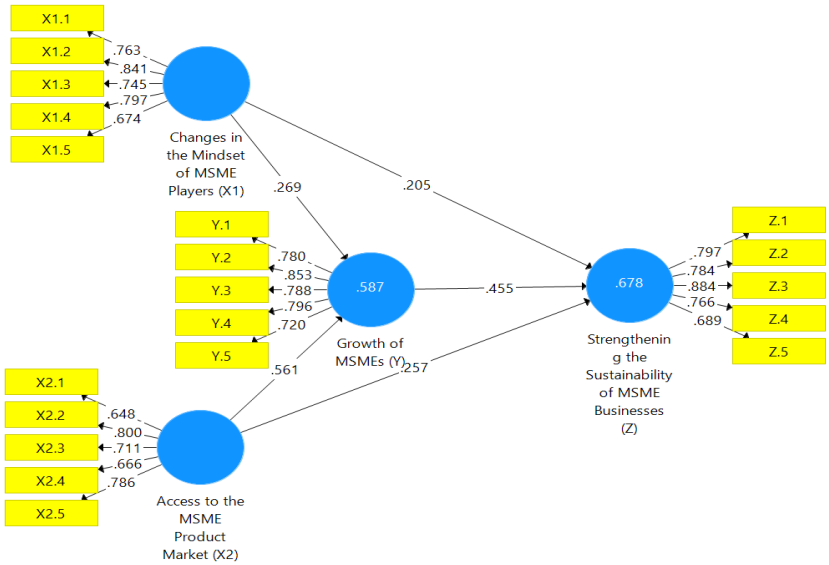

Fig.3: PLS Algorithm model 1

Source: Author's findings, 2024.

The image above appears to show the factor values or loadings of four latent variables in a factor analysis or measurement model. The following is an explanation for each column: Changes in the Mindset of MSME players (X1): consists of 5 indicators (manifests), namely: -X1.1: 0.763, -X1.2: 0.841, -X1.3: 0.745, -X1.4: 0.797, -X1.5: 0.674 (indicates that the loading factor value is invalid

because < 0.7), in the indicator on variable X1 (changes in the mindset of MSME players) there is 1 valid indicator because > 0, 7, so it must be removed from the model. Access to the MSME Product Market (X2): This variable has factor values or loadings for the items measured in the latent variable access to the MSME product market (X2). The items measured are: -X2.1: 0.648, -X2.2: 0.800, -X2.3: 0.711. -X2.4: 0.666, -X2.5: 0.786. In the indicators in variable X2 (access to the MSME product market), 2 indicators are valid because they are > 0.7, so they must be removed from the model.

Growth of MSMEs (Y): This variable has factor values or loadings for the items measured in the latent variable Growth of MSMEs. The items measured are: -Y1.1: 0.780, -Y1.2: 0.853, -Y1.3: 0.7788, -Y1.4: 0.796 -Y1.5: 0.720. In the indicators on variable Y (growth of MSMEs), all indicators are valid because > 0.7. Strengthening the sustainability of MSME businesses (Z). This variable has factor values or loadings for the items measured in the latent variable Strengthening the Sustainability of MSME businesses. The items measured are: -Z1: 0.779, -Z2: 0.783, -Z3: 0.884, -Z4: 0.766 -Z5: 0.689 (indicating that the loading factor value is invalid because <0.7). In the indicators for variable Z (strengthening the sustainability of MSME businesses) there is 1 valid indicator because it is > 0.7, so it must be removed from the model.

A higher factor value or factor loading usually indicates that the item has a greater contribution in measuring the latent variable in question. In this context, items with a value above .7 are usually considered to have a good contribution to the measurement of the latent variable. Of all the indicators there are 4 invalid indicators (-X1.5, -X2.1, -X2.4, -Z5) so the invalid inductor must be removed from t.

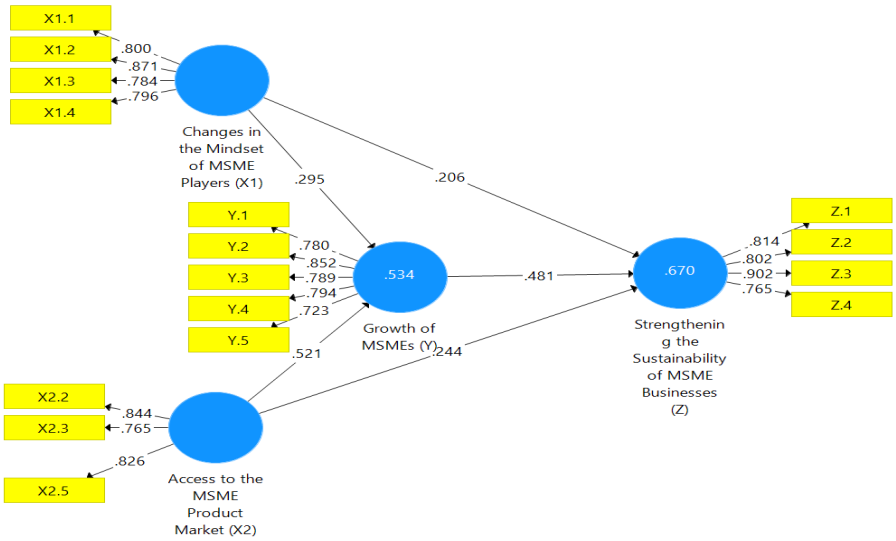

Fig.4: PLS Algorithm model 2

Source: Author's findings, 2024.

After carrying out the second Outer Loading Test, the results shown in Figure 4 above were obtained. We can see that the loading factor values for most of the indicators are above 0.7, indicating that they are significant contributors to each of the variables measured. The highest loading factor value in the "Strengthening the Sustainability of MSME Businesses (Z)" category is Z3 with a value of 0.902, indicating that this indicator is very strong in explaining Strengthening the Sustainability of MSME Businesses.

On the other hand, the lowest loading factor value is Growth of MSMEs (Y4) with a value of 0.723, although still quite significant, showing a weaker contribution than other indicators. Overall, this table shows that all the indicators measured have a fairly strong influence on the variables they represent, with consistent loading factor values above 0.7 so that all indicators (loading factors) have been met.

4.3 Discriminant validity

The discriminant value is useful for assessing whether a variable has adequate discriminant validity, namely by comparing the correlation of the indicator with the target construct, which must be greater

than the correlation with other constructs. If the correlation of the indicator has a higher value than the correlation of the indicator with other constructs, then it is said that the variable has high discriminant validity. The complete cross-loading value results are as follows:

Table 5. Cross loading values

	Access to the MSME product market (X2)	Changes in the mindset of MSME players (X1)	Growth of MSMEs (Y)	Strengthening the sustainability of MSME businesses (Z)
X1.1	.415	.800	.508	.536
X1.2	.482	.871	.484	.527
X1.3	.455	.784	.394	.448
X1.4	.505	.796	.525	.529
X2.2	.844	.572	.480	.546
X2.3	.765	.514	.458	.465
X2.5	.826	.350	.695	.647
Y.1	.562	.479	.780	.594
Y.2	.603	.444	.852	.621
Y.3	.593	.472	.789	.603
Y.4	.559	.455	.794	.618
Y.5	.387	.491	.723	.605
Z.1	.579	.514	.577	.814
Z.2	.526	.575	.601	.802
Z.3	.643	.556	.759	.902
Z.4	.525	.424	.581	.765

Source: Author's findings, 2024.

In the cross-loading table above, it can be seen that the loading value of the indicator factor changes in the mindset of MSME players (X1) is greater than the target cross-loading value, namely access to the MSME product market (X2), growth of MSMEs (Y). and strengthening the Sustainability of MSME businesses (Z). Based on the results of the discriminant validity test in the table above, it can be seen that all indicators have the highest indicators in their constructs and not in other constructs, so it can be stated that all indicators have met the requirements for discriminant validity.

Table 6. Fornell-Larcker criterion values

	Access to the MSME product market (X2)	Changes in the mindset of MSME players (X1)	Growth of MSMEs (Y)	Strengthening the sustainability of MSME businesses (Z)
Access to the MSME product market (X2)	0.812			
Changes in the mindset of MSME players (X1)	0.571	0.813		
Growth of MSMEs (Y)	0.690	0.593	0.789	
Strengthening the sustainability of MSME businesses (Z)	0.693	0.631	0.771	0.822

Source: Author's findings, 2024.

Based on the results of the discriminant validity test, the Fornell Lacker Criterion value for Access to the MSME product market (X2) is greater than the correlation value for the other variables. The Fornell Lacker Criterion value for changes in the mindset of MSME players (X1) is greater than the correlation value for other variables. The Fornell Lacker Criterion value for growth of MSMEs (Y) is greater than the correlation value for other variables. The Fornell Lacker Criterion value for strengthening the sustainability of MSME businesses (Z) is greater than the correlation value for other

variables. The results of the discriminant validity test in the table above show that all indicators and constructs in the PLS model have met the required discriminant validity criteria.

4.4 Composite reliability

A high composite reliability value indicates good consistency of each indicator in the latent variable to measure that variable. The criteria for a composite reliability value > 0.7 indicates that the variable has good internal consistency. The complete composite reliability values are presented in the table below:

Table 7. Composite reliability, Cronbach's alpha, and average variance extracted (AVE)

	Composite reliability	Cronbach's alpha	Average variance extracted (AVE)
Access to the MSME product market (X2)	0.853	0.747	0.660
Changes in the mindset of MSME players (X1)	0.886	0.829	0.661
Growth of MSMEs (Y)	0.891	0.847	0.622
Strengthening the sustainability of MSME businesses (Z)	0.893	0.839	0.676

Source: Author's findings, 2024.

A high composite reliability value indicates good consistency of each indicator in the latent variable to measure that variable. The criteria for a composite reliability value > 0.7 indicates that the variable has good internal consistency. The composite reliability value of the access to the MSME product market (X2) is 0.853, changes in the mindset of MSME players (X1) 0.886, growth of MSMEs (Y) 0.891 strengthening the sustainability of MSME businesses (Z) 0.893. These four constructs obtained composite reliability values > 0.70, so they are said to be reliable indicators.

The reliability test is strengthened by Cronbach's alpha value. Cronbach's alpha reliability test limits > 0.7. The Cronbach's alpha value obtained by the access to the MSME product market (X2) construct is 0.747, changes in the mindset of MSME players (X1) 0.829, growth of MSMEs (Y) 0.847 strengthening the Sustainability of MSME businesses (Z) 0.839. Based on Cronbach's alpha value, the five latent variables have reliable indicators and are in the very high category.

The AVE value shows that the variance value of each indicator in the construct that can be captured by that variable is greater than the variance caused by measurement error. The AVE value is expected to be > 0.5. The AVE value of the access to the MSME product market (X2) construct is 0.660, changes in the mindset of MSME players (X1) 0.661, growth of MSMEs (Y) 0.622 Strengthening the sustainability of MSME businesses (Z) 0.676. Based on the AVE results, it shows that all constructs from each latent variable have an AVE value > 0.5, so it can be concluded that they are valid.

4.5 Test the structural model

To test the structural model, it is done by looking at the R2 value which is a goodness of the fit test. The strengthening of the sustainability of MSME businesses (Z) construct obtained an R2 value of 0.670 which can be interpreted to mean that variations can be explained by the construct changes in the mindset of MSME players (X1), access to the MSME product market (X2) and growth of MSMEs (Y) of 67.0% (while the remaining 33% is explained by other variables outside those studied. The complete R-square value results are presented in the table below.

Table 8. R-square value

	R- Square	R- Square Adjusted
Growth of MSMEs (Y)	0,534	0,527
Strengthening the sustainability of MSME businesses (Z)	0,670	0,662

Source: Author's findings, 2024.

The R2 value of 0.670 for strengthening the sustainability of MSME businesses indicates that the model explains a substantial 67% of the variance in this construct, suggesting good predictive power.

Table 9. Q-square value

	SSO	SSE	Q^2 (=1-SSE/SSO)
Access to the MSME Product Market (X2)	375.000	375.000	
Changes in the mindset of MSME players (X1)	500.000	500.000	
Growth of MSMEs (Y)	625.000	422.840	0.323
Strengthening the sustainability of MSME businesses (Z)	500.000	280.439	0.439

Source: Author's findings, 2024.

The Q-square growth of MSMEs (Y) value is 0.397 > 0, and the Q-square performance (Z) value is 0.543 > 0, so the growth of MSMEs variables and business actor performance has predictive relevance.

Table 10. Vit inner model

	Access to the MSME product market (X2)	Changes in the mindset of MSME players (X1)	Growth of MSMEs (Y)	Strengthening the sustainability of MSME businesses (Z)
Access to the MSME product market (X2)			1.484	2.067
Changes in the mindset of MSME players (X1)			1,484	1.671
Growth of MSMEs (Y)				2.147
strengthening the sustainability of MSME businesses (Z)				

Source: Author's findings, 2024.

Multicollinearity in the path analysis model was tested according to the VIF value of the inner model. The path analysis model must be free from multicollinearity as indicated by the VIF inner model value < 5.00. The results of the analysis in the following table show that the VIF value of the inner model for all constructs is <5.00, which means that there is no multicollinearity in the regression model. Apart from being assessed from the R-square and Q-square values, the goodness of fit model is also seen from the SRMR estimated model value, the model is declared a perfect fit if the SRMR estimated model is <0.08 and the model is declared fit if the SRMR estimated model value is between 0.08 – 0.10.

Table 11. SRMR

	Saturated model	Estimated model
SRMR	0.082	.082
d_ULS	0.914	.914
d_G	0.459	.459
Chi-Square	315.834	315.834
NFI	0.740	.740

Source: Author's findings, 2024.

The next test is to see the significance of the influence between independent and dependent constructs and answer what has been hypothesized. Testing with a significance level of 5% if the t-statistic value is > 1.96 then the null hypothesis (H_0) is rejected. The t-statistic value of the influence coefficient of the latent construct is obtained from PLS Bootstrapping. The results of the PLS Bootstrapping model are presented in the image below:

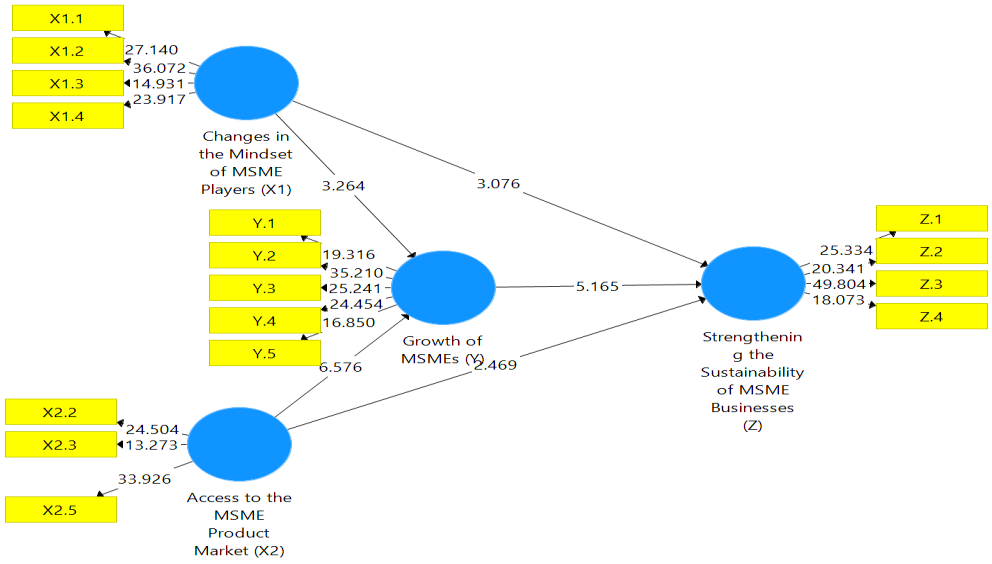

Fig.5: Bootstrapping test
Source: Author's findings, 2024.

The coefficient value of the influence of Changes in the Mindset of MSME Players (X1) on the growth of MSMEs (Y) is 0.295, the standard error value is 0.090, the t-statistic value is 3.264 and the p-value is 0.001. Because the t-statistic value is 3.264 > 1.96 and the p-value is 0.001 < 0.05, then accept H_1. These results state that changes in the mindset of MSME players (X1) have a positive and significant effect on the growth of MSMEs (Y) H_2.

The coefficient value of the influence of access to the MSME product market (X2) on the growth of MSMEs (Y) is 0.521. standard error value 0.079, t-statistic value 6.576, and p-values 0.000. Because the t-statistic value is 6.576 > 1.96 and the p-value is 0.000 < 0.05, then accept H_2. These results state that access to the MSME product market (X2) has a positive and significant effect on the growth of MSMEs (Y). Hypothesis 3 The coefficient value of the influence of changes in the mindset of MSME players (X1) on Strengthening the sustainability of MSME businesses (Z) is 0.206. The standard error value is 0.067, the t-statistic value is 3.076 and the p-values are 0.002. Because the t-statistic value is 3.076 > 1.96 and the p-value is 0.002 < 0.05, then accept H_3. These results state that changes in the mindset of MSME players (X1) have a positive and significant effect on strengthening the sustainability of MSME businesses (Z), Hypothesis 4.

The coefficient value of the influence of access to the MSME product market (X2) on strengthening the sustainability of MSME businesses (Z) is 0.244, the standard error value is 0.099, the t-statistic value is 2.469 and the p-values are 0.014. Because the t-statistic value is 2.469 > 1.96 and the p-value is 0.014 < 0.05, then accept H_4. These results state that access to the MSME product market (X2) has a positive and significant effect on strengthening the sustainability of MSME businesses (Z). Hypothesis 5, the coefficient value of the influence of the growth of MSMEs (Y) on strengthening the sustainability of MSME businesses (Z) is 0.481, and the standard error value is 0.093. The t-statistic value is 5.165 and p-values 0.000. Because the t-statistic value is 5.165 > 1.96 and the p-value is 0.000 < 0.05, then accept H5. These results state that the growth of MSMEs (Y) has a positive and significant effect on strengthening the sustainability of MSME businesses (Z).

5. Discussion

5.1. Changes in the mindset of MSME business actors

Changing the mindset of MSMEs (Micro, Small, and Medium Enterprises) is essential to face challenges and take advantage of opportunities in an ever-evolving market. MSMEs often focus on short-term solutions to everyday problems. Thinking long-term helps in more strategic business planning, including product development, marketing, and expansion. Adopt an innovative mindset to continuously adapt to market and technology changes. This can include the use of new technologies, changes in business models, or the creation of new products and services. Understanding and meeting customer needs is key. Using customer data and feedback to improve products and services can provide a competitive advantage. Integrating digital technology into operations, such as e-commerce, social media, and management systems, to increase efficiency and market reach.

Implementing better financial management practices, including cash flow management, budget planning, and wise investment, to maintain the financial health of the business. Developing leadership skills and paying attention to team development to create a productive and innovative work environment. Building relationships with other business actors, government agencies, and the business community to expand networks and get the necessary support. Understanding and complying with applicable government regulations and policies to avoid legal problems and take advantage of available opportunities. Considering sustainability aspects in business operations and social responsibility as part of a long-term strategy can improve the reputation and attractiveness of the business. Recognizing the importance of continuous learning and readiness to adapt to market changes, industry trends, and technology. Adopting this mindset shift can help MSMEs not only survive but also thrive in a competitive market.

MSME businesses require a dimension of change in the mindset of business actors, business actors optimize their business and believe in the success of their business while paying attention to external conditions (Setiawan et al, 2023). A global mindset and adaptive marketing capacity are needed by business owners to obtain business opportunities. The efforts made by MSME business actors to respond and adapt to changes in the business environment, both internal and external, have an impact on business productivity and sustainability (Wasim et al, 2024). Entrepreneurs must be smart in looking at external conditions and also be able to expand existing markets so that maximum sales can be achieved.

In the sense that implementing wider market access for MSME products by utilizing social media, both offline and online continuously is a very important thing to do by looking at internal and external conditions (Putri et al, 2024). An entrepreneurial mindset utilizing social capital and creating innovation has an impact on business sustainability and can survive in times of crisis. This means that increasing innovation through business management can increase insight for business actors. Becoming a successful entrepreneur in the MSME sector requires the values of honesty, enthusiasm, and kindness. The success of MSMEs requires self-efficacy and motivation in entrepreneurship (Ajidin & Ajidin, 2024). Changes in people's mindsets cause economic and socio-cultural activities to provide direction for sustainable development.

A high level of commitment is needed to implement an organizational culture for business owners and an innovation ecosystem to support sustainable MSME growth. Sustainable business development requires an open innovation ecosystem, providing a process framework, rules, and policies. Business owners must change organizational culture and stakeholders play a role in the innovation process in supporting the sustainability of MSMEs. Using a social entrepreneurial approach and applying and utilizing science and technology can be beneficial (Yacob et al, 2021). MSME actors are motivated in trying to meet family needs and believe in success in business from experiences in their environment coupled with entrepreneurial insight. Mastery of digital technology and the quality of human resources, increasing the number of workers and the availability of facilities and infrastructure for MSME products have a big influence on growth and strengthening business sustainability (Tjahjadi et al, 2022).

5.2. Access to the MSME product market

The availability of facilities and infrastructure for MSME products and the use of offline and online media as well as sales promotions are proven to help market access. Digital technology applied in marketing helps relationships with consumers and creates value that can encourage strengthening regional economic institutions (Suciu et al, 2021). Market globalization, product innovation, and operational efficiency, technology integration, support from stakeholders and educational institutions contribute to supporting the development of MSMEs. Network capacity and product innovation contribute to GDP and business growth. Digital transformation is currently an opportunity to expand MSME market access more quickly.

With the support of digital technology, MSME businesses can quickly become widely known, market globalization, product innovation, and operational efficiency with technology integration (Vrontis et al, 2022). Support from local governments and educational institutions greatly contributes to supporting the development of MSMEs. This potential becomes a sustainable competitive advantage by using an innovative halal-based approach for ASEAN trade in the MSME sector. Product and service innovation as well as improving product quality, expanding the MSME market, and building relationships with customers contribute to sustainable economic growth. Utilization of digital technology through training and government support can help MSMEs reach a wider market. For MSMEs to have marketing prospects, they need the ability to interact or collaborate with customers in providing ideas (Muridzi, 2023). To increase the market value of sustainable MSMEs, innovation, collaboration, communication, and commitment are needed. MSMEs have high competitiveness, which requires government policies and increasing innovation and marketing capabilities.

MSME strategies can develop if they build good relationships by interacting with consumers providing good services and looking at external conditions. Collaboration between business actors and having adaptive innovation capabilities can be the main factors in marketing MSE products. Apart from this, there are driving factors in creating sustainable customer loyalty towards MSMEs. Unique and varied social media strategies can help MSMEs interact in the economic sector. Market orientation and service quality as some of the determinants of business success. The better the service provided to consumers, the higher the level of consumer commitment (Pangaso et al, 2022). In this way, utilizing market access and building good service to customers can encourage the sustainable strengthening of MSMEs. In the Results section: "Table X presents the effect sizes (f2) for each relationship in the model. According to Cohen (1988), f2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. Our results show that market access has a large effect on MSME growth (f2 = 0.37), while the effect of mindset change is medium (f2 = 0.18)."

5.3. Growth of MSMEs

The quality of human resources who are skilled and understand digitalization technology followed by stakeholders can encourage the growth of MSMEs. The positive impact of the number of active micro business units will encourage economic growth, for this reason, managers and policymakers encourage support for the development of MSMEs through strategies. Project management and stakeholder involvement can encourage effective MSME growth. MSMEs are an indispensable link in the chain because they can make a large contribution to GDP and are one of the largest providers of employment opportunities (Wahyuni et al, 2022). Utilizing the adoption of Internet of Things (IoT) technology has a positive impact on sustainable MSME business growth. Optimal SME business management with the use of fintech followed by business stability has an impact on economic growth.

Economic growth, guidance, and supervision of MSME business actors have an impact on improving the sustainable economic welfare of society. Regional economic growth and innovation development are achieved if MSMEs have high technology. Technological transformation in production and trade processes has a permanent growth impact. Efforts for sustainable economic growth include diversifying the energy mix, increasing education, and advancing science as well as digitizing public services. Combining technology, markets, and society as an effort to sustain economic growth. Improving the rural economy requires training and improving skills through policy and practice

approaches that will encourage long-term sustainable economic growth. The performance and sustainability of an institution are supported by resource skills, use of technology and innovation, openness, maintaining communication, and protecting consumers, as well as administrative and financial governance and the role of government. Our finding that market access significantly influences MSME growth aligns with Vrontis et al. (2022), who emphasized the importance of digital market access for SMEs. However, our study extends this understanding to the specific context of rural Indonesian MSMEs.

The growth of MSMEs (Micro, Small, and Medium Enterprises) plays a significant role in mediating the relationship between mindset/market access and business sustainability. MSMEs with an innovative mindset tend to be better able to adapt their products and services to market needs. This allows them to remain relevant and competitive, which contributes to business sustainability. A mindset that focuses on resilience and flexibility helps MSMEs cope with market challenges and changes, strengthening their resilience in the long term.

Understanding and responding to customer needs and preferences can increase satisfaction and loyalty, which supports sustainable growth. A mindset that encourages learning and self-development allows MSMEs to continuously develop the skills and knowledge needed to succeed in a changing market. Good market access involves effective marketing strategies, both online and offline. This helps MSMEs reach new customers and increase sales. Having access to strong business networks and partnerships can open up new opportunities and expand the market reach of MSMEs. The use of information and communication technology for marketing, sales, and product distribution increases market efficiency and accessibility. Good infrastructure supports efficient product distribution, allowing MSMEs to reach a wider market.

6. Conclusion

This study identifies key factors driving MSME growth and sustainability in Anggeraja Sub-district, Enrekang Regency. Changes in business actors' mindsets and improved market access significantly contribute to MSME growth and business sustainability. These findings extend our understanding of MSME development in rural Indonesian contexts and have important implications for policy and practice. This study contributes to the literature on MSME sustainability by identifying the specific factors driving growth and sustainability in rural Indonesian contexts. For policymakers, our findings suggest that initiatives focusing on changing business owner mindsets and improving market access could be particularly effective in supporting MSME growth.

For policymakers, our results suggest that initiatives focusing on entrepreneurial education and digital market access could be particularly effective in supporting MSME growth. For MSME owners, the findings highlight the importance of adopting a growth-oriented mindset and leveraging digital technologies for market expansion. Future research could explore these relationships in other rural Indonesian contexts or investigate the long-term impacts of mindset changes and market access improvements on MSME performance. Despite limitations such as the cross-sectional nature of the data, this study provides valuable insights into the dynamics of MSME growth and sustainability in rural Indonesia.

References

Abduh, T., Remmang, H., Abubakar, H., & Karim, A. (2024). Entrepreneurship and MSME market orientation toward creative industries: Society Era 5.0 in Makassar city. *Asian Economic and Financial Review*, *14*(2), 76-87. https://doi.org/10.55493/5002.v14i2.4964

Achmad, W., Nurwati, N., & Sidiq, R. S. S. (2023). Community Economic Empowerment Through The Development Of Micro And Small And Medium Enterprises: A Case Study In Alamendah Tourism Village. *JEES: Journal of Economic Empowerment Strategy*, *6*(2), 99-104. https://doi.org/10.23969/jees.v6i2.9377

Ajidin, Z. A., & Ajidin, A. (2024). Halal Industry Development Strategies Based on Small and Medium-Sized Enterprises for Rendang Entrepreneurs in Payakumbuh. *ITQAN: Journal of Islamic Economics, Management, and Finance*, *3*(1), 49-58. https://doi.org/10.57053/itqan.v3i1.32

Akhmad, A., Khalid, I., & Asdar, A. (2023). Strategy for Development of Micro, Small and Medium Enterprises in Gowa Regency, Indonesia. *European Journal of Development Studies*, *3*(5), 7-15. https://doi.org/10.24018/ejdevelop.2023.3.5.284

AlZayani, F., Mohammed, A., & Shoaib, H. M. (2024). The impact of smart technologies on SMEs' sustainability: the mediation effect of sustainability strategy. *Competitiveness Review: An International Business Journal*, *34*(1), 28-50. https://doi.org/10.1108/CR-09-2022-0136

Bahtiar, A. S., & Karim, A. (2021). The Role of BUMDes in Sustainable Economic Development at Enrekang Regency. *Journal of Logistics, Informatics and Service Science*, *1*, 117-132. DOI:10.33168/LISS.2021.0108

Chahyono, A. K., Azis, M., & Nuryadin, R. (2023). Food and Beverage Service Business Continuity in Makassar, Indonesia. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery*, *54*(11).

Cohen, M. A. (1988). Some new evidence on the seriousness of crime. *Criminology*, *26*(2), 343-353. https://doi.org/10.1111/j.1745-9125.1988.tb00845.x

Daga, R., Karim, A., Nawir, F., Lutfi, A., & Jumady, E. (2024). Analysis of Social Media Marketing Technology and Online-Based Consumer Purchase Interest in South Sulawesi. Quality–Access to Success, 25(199), 330-337. https://doi.org/10.47750/QAS/25.199.36

Diawati, P., Muhamad, L. F., Permana, R. M., & Suparwata, D. O. (2024). Innovative Strategies of SMEs in Alignment with Community Needs. *Jurnal Terobosan Peduli Masyarakat (TIRAKAT)*, *1*(1), 30-38. https://doi.org/10.61100/j.tirakat.v1i1.103

Enrekang, B. P. S. K. (2024). Kabupaten Enrekang dalam Angka 2023. *Badan Pusat Statistik Kabupaten Enrekang*.

Esthi, R. B., & Setiawan, I. (2023). Green human resources management of the small and micro-enterprises in Indonesia. *Enrichment: Journal of Management*, *12*(6), 4877-4885. https://doi.org/10.35335/enrichment.v12i6.1018

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the academy of marketing science*, *45*, 616-632. https://doi.org/10.1007/s11747-017-0517-x

Hasniati, H., Indriasari, D. P., Sirajuddini, A., & Karim, A. (2023). The Decision of Women in Makassar City to Entrepreneur. *Binus Business Review*, *14*(1). https://doi.org/10.21512/bbr.v14i1.8936

Hidayat, Y., Machmud, A., Zulhuda, S., & Suartini, S. (2024). Legal aspects and government policy in increasing the role of MSMEs in the Halal ecosystem. *F1000Research*, *13*, 722. https://doi.org/10.12688/f1000research.148322.1

Hutahayan, B., & Yufra, S. (2019). Innovation speed and competitiveness of food small and medium-sized enterprises (SME) in Malang, Indonesia: Creative destruction as the mediation. *Journal of Science and Technology Policy Management*, *10*(5), 1152-1173. https://doi.org/10.1108/JSTPM-12-2017-0071

Karim, A., & Syamsuddin, I. (2024). Realization of Village Funds in Regional Economic Growth at Enrekang Regency. The Seybold Report. 19 (3), 820 – 834. DOI: 10.5281/zenodo.10934652

Karim, A., Asrianto, A., Ruslan, M., & Said, M. (2023). Gojek Accelerate Economic Recovery through the Digitalization of MSMEs in Makassar. *The Winners*, *24*(1), 23-31. https://doi.org/10.21512/tw.v24i1.9388

Karim, A., Musa, C. I., Sahabuddin, R., & Azis, M. (2021). The increase of rural economy at Baraka Sub-district through village funds. *The Winners*, *22*(1), 89-95. https://doi.org/10.21512/tw.v22i1.7013

Karim, A., Syamsuddin, I., & Asrianto, A. (2023). Profitability Ratio Analysis Profit Growth PT. Gudang Garam Tbk on The IDX for the 2014-2021 Period. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *7*(2), 649-660. DOI : 10.29040/ijebar.v7i2.9133

Lokshina, I. V., Lanting, C. J., & Durkin, B. (2021). Evaluation of strategic opportunities and resulting business models for SMEs: employing IoT in their data-driven ecosystems. In *Research Anthology on Small Business Strategies for Success and Survival* (pp. 689-718). IGI Global. DOI: 10.4018/978-1-7998-9155-0.ch035

Maksum, I. R., Rahayu, A. Y. S., & Kusumawardhani, D. (2020). A social enterprise approach to empowering micro, small and medium enterprises (SMEs) in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(3), 50. https://doi.org/10.3390/joitmc6030050

Mardjuni, S., Thanwain, I. N., Abubakar, H., Menne, F., & Karim, A. (2022). Business Sustainability in Food and Beverage Processing Industry Through Innovation in Maros Regency, IndonesiA. *Journal of Southwest Jiaotong University*, *57*(6). https://doi.org/10.35741/issn.0258-2724.57.6.85

Mariyudi. (2019). Success factors of SMEs: the case of Indonesia. *International Journal of Business Innovation and Research*, *19*(2), 204-231. https://doi.org/10.1504/IJBIR.2019.100074

Maulina, E., & Fordian, D. (2018). Analysis of restricting Factors of small medium enterprises in Bandung, West Java-Indonesia. *Review of Integrative Business and Economics Research*, *7*, 297-307.

Mukherjee, S. (2018). Challenges to Indian micro small scale and medium enterprises in the era of globalization. *Journal of Global Entrepreneurship Research*, *8*, 1-19. https://doi.org/10.1186/s40497-018-0115-5

Mukherjee, S., Baral, M. M., Chittipaka, V., Nagariya, R., & Patel, B. S. (2024). Achieving organizational performance by integrating industrial Internet of things in the SMEs: a developing country perspective. *The TQM Journal*, *36*(1), 265-287. https://doi.org/10.1108/TQM-07-2022-0221

Muridzi, G. (2023). Implication of internet of things (IoT) on organisational performance for SMEs in emerging economies: a systematic review. *Technology audit and production reserves*, *6*(4/74), 27-35. https://doi.org/10.15587/2706-5448.2023.292183

Nursini, N. (2020). Micro, small, and medium enterprises (MSMEs) and poverty reduction: empirical evidence from Indonesia. *Development Studies Research*, *7*(1), 153-166. https://doi.org/10.1080/21665095.2020.1823238

Pangarso, A., Sisilia, K., Setyorini, R., Peranginangin, Y., & Awirya, A. A. (2022). The long path to achieving green economy performance for micro small medium enterprise. *Journal of Innovation and Entrepreneurship*, *11*(1), 1-19. https://doi.org/10.1186/s13731-022-00209-4

Pasaribu, D., Sinurat, E. J., Tambunan, D., & Nainggolan, A. (2023). Model Analysis of Strengthening the Success and Sustainability of MSMEs in Pematang Siantar. *Journal of Hunan University Natural Sciences*, *50*(7). https://doi.org/10.55463/issn.1674-2974.50.7.8

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879. https://doi.org/10.1037/0021-9010.88.5.879

Putri, P. I., Bowo, P. A., & Oktavilia, S. (2024). Strengthening Tourist Village Attractions Through Empowerment of Rural Micro, Small, and Medium Enterprises (MSMEs). *International Journal of Sustainable Development & Planning*, *19*(2). DOI. 10.18280/ijsdp.190235

Ruslan, M., Karim, A., & Haris, A. (2023). Model for Strengthening Micro-, Small, and Medium-Sized Enterprises in Supporting Sustainable Economic Enterprises. *Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery*, *54*(10).

Setiawan, A. B., Karman, Nugroho, A. C., Dunan, A., & Mudjiyanto, B. (2023). Digital strategies and policy approach for small medium micro business development in Indonesia. In *Open Innovation in Small Business: Creating Values for Sustainability* (pp. 71-86). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-99-5142-0_5

Somohano-Rodríguez, F. M., Madrid-Guijarro, A., & López-Fernández, J. M. (2022). Does Industry 4.0 really matter for SME innovation?. *Journal of Small Business Management*, *60*(4), 1001-1028. https://doi.org/10.1080/00472778.2020.1780728

Suciu, A. D., Tudor, A. I. M., Chițu, I. B., Dovleac, L., & Brătucu, G. (2021). IoT technologies as instruments for SMEs' innovation and sustainable growth. *Sustainability*, *13*(11), 6357. https://doi.org/10.3390/su13116357

Susan, M. (2020). Financial literacy and growth of micro, small, and medium enterprises in west java, indonesia. In *Advanced issues in the economics of emerging markets* (pp. 39-48). Emerald Publishing Limited. https://doi.org/10.1108/S1571-038620200000027004

Tambunan, T. (2019). Recent evidence of the development of micro, small and medium enterprises in Indonesia. *Journal of Global Entrepreneurship Research*, *9*(1), 18. https://doi.org/10.1186/s40497-018-0140-4

Tjahjadi, B., Soewarno, N., Nadyaningrum, V., & Aminy, A. (2022). Human capital readiness and global market orientation in Indonesian Micro-, Small-and-Medium-sized Enterprises business performance. *International Journal of Productivity and Performance Management*, *71*(1), 79-99. https://doi.org/10.1108/IJPPM-04-2020-0181

Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2022). Adoption of digital technologies by SMEs for sustainability and value creation: Moderating role of entrepreneurial orientation. *Sustainability*, *14*(13), 7949. https://doi.org/10.3390/su14137949

Wahyuni, N., Kalsum, U., Asmara, Y., & Karim, A. Activity-Based Costing Method as an Effort to Increase Profitability. *Jurnal ASET (Akuntansi Riset)*, *14*(2), 297-312. https://doi.org/10.17509/jaset.v14i2.45642

Wasim, M., Ahmed, S., Kalsoom, T., Khan, M. S., & Rafi-Ul-Shan, P. M. (2024). Market orientation and SME performance: Moderating role of IoT and mediating role of creativity. *Journal of Small Business Management*, *62*(2), 938-965. https://doi.org/10.1080/00472778.2022.2100897

Wibowo, V., Gautama, I., Kuncoro, E. A., & Bandur, A. (2024). Improving Sustainability in the Small-Medium Culinary Industry: Analyzing the Role of Open Innovation and Competitive Advantage. *Journal of System and Management Sciences*, *14*(2), 172-187. DOI:10.33168/JSMS.2024.0211

Yacob, S., Sulistiyo, U., Erida, E., & Siregar, A. P. (2021). The importance of E-commerce adoption and entrepreneurship orientation for sustainable micro, small, and medium enterprises in Indonesia. *Development Studies Research*, *8*(1), 244-252. https://doi.org/10.1080/21665095.2021.1976657