

TOEI FRAMEWORK: ANALYSING TECHNOLOGY ADAPTATION FOR SUPPORTING MSME SUSTAINABILITY IN BALI

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ABSTRACT

The sustainability of MSMEs is one of the important issues for economic growth, because the existence of this business is more adaptive to change and has the opportunity for resilience in uncertainty. This study aims to analyze the sustainability of MSMEs based on their technological adaptation through social media by referring to the TOEI framework. Quantitative design is considered appropriate for the purpose of the study by utilizing a questionnaire as a data collection instrument targeting MSME owners in Bali Province. The sampling technique applied is probability sampling with the provisions of SEM analysis, the minimum sample size is 145 and the maximum is 290 data. Based on the results of data collection in the field, 190 valid data were obtained to enter the analysis stage. Data analysis was carried out using WarpPLS 7.0 software because the analysis is simpler. The results of the study indicate that the adoption of social media is positively and significantly influenced by technological factors, environmental factors and individual factors, while organizational factors do not show a significant influence. Regarding the sustainability of MSMEs, only organizational factors and social media adoption practices show a positive and significant influence. This study also proves that the adoption of social media can act as a mediator of the influence of technological factors and environmental factors on the sustainability of MSMEs. In the long term, the research results can be applied to MSMEs by improving the quality of social media so as to support MSMEs to be more adaptive, facilitate the determination of resilience strategies, improve performance, and mitigate risks.

Keywords: TOEI Framework, MSME Sustainability, Technology Adaptation, social media

INTRODUCTION

Indonesia has abundant and useful resources to support people's lives, especially in the Province of Bali. Empowerment of resources has been carried out from generation to generation by the Balinese people in various activities (Oktaviana et al., 2023), including for economic activities to achieve prosperity. One of them is through processing resources into creative products of Micro, Small and Medium Enterprises (MSMEs) spread across various sectors. The Province of Bali through performance data from the Cooperatives, Small and Medium Enterprises Service published that in 2023 there were 439,432 MSMEs spread across nine districts/cities (Dinas Koperasi, 2023). This number shows that in addition to tourism, creative products are also able to support economic growth in Bali. However, it is unfortunate that this number decreased by 1,227 units from 2022 which reached 440,609 MSMEs. This decrease in number shows that MSMEs do not have a strategy to create business resilience.

Resilient MSMEs have the opportunity to meet the Sustainable Development Goals indicators, namely (1) No Poverty and (8) Decent Work and Economic Growth. MSME sustainability can start from strengthening the internal organization by

utilizing current digital technology developments to encourage effectiveness and efficiency. Conditions in the field based on the results of initial observations of ten MSME owners in Denpasar City, Badung Regency, Gianyar Regency, and Tabanan Regency actually have difficulty maintaining their businesses because the use of technology is not optimal. Activities are still carried out conventionally such as cash transactions, electronic message promotions through personal accounts, and are not optimal in creating digital content as promotional assets. Concerns about the use of technology, especially in terms of payment transactions, began when consumers sent fake proof of payment, in addition, MSME owners had difficulty checking their transaction history. This condition further encourages low MSME trust in digital financial practices (Putri, Dwiputranti, et al., 2024).

Adaptation of technology is a form of innovation in achieving the sustainability of MSMEs (Bruce et al., 2023), especially by utilizing social media to convey information in the form of photos, videos, text, audio, and new product ideas to consumers. One of the MSMEs located in Pejeng Village, Gianyar Regency with creative products in the form of cag-cag weaving expressed its difficulty

in practicing *digital marketing* due to lack of resources. Products with cultural nuances and full of Balinese philosophy do not yet have a product catalog because there is no good product documentation. If this condition continues, it is possible that weaving artisans will lose their source of income and the loss of Balinese cultural heritage.

Digitalization in various management fields can encourage MSMEs to be responsible and achieve business sustainability (Prastian et al., 2022), which describes the ability to respond to short-term financial needs without sacrificing its ability to meet consumer demand (Bansal & DesJardine, 2014). The conditions of each MSME in Bali are actually different but have a common vision to achieve business sustainability, where they can operate in the long term by producing innovative products. The literature states that innovation and sustainable value can be born from the adaptation of technology through the use of digital platforms (Muthuraman, 2020; Schneider, 2019).

Analysis of technology adoption in business has been conducted by a number of researchers such as in Palestine and the United Arab Emirates (Ahmad et al., 2019; Alkateeb & Abdalla, 2021), including the role of technology that supports social media usage activities (Suariedewi et al., 2022) in improving business performance. The application of technology in business also leads to the Technology-Organization-Environment (TOE) framework, as a basis for forming behavior to create competitive advantage (Kumar & Shankar, 2024). Mapping technology trends creates automatic decision-making by business owners (Kumar & Shankar, 2024), because the use of technology is not limited to highlighting the uniqueness of the business but also accelerating the process of analyzing consumer trends through social media algorithms.

Furthermore, the existence of an organization with adaptive and dynamic leaders makes the organization more responsive to change. This leads to the achievement of business operational efficiency, through innovative strategic decisions such as marketing activities through social media adoption and e-commerce (Salah & Ayyash, 2024). The pressure of business competition and business partners accelerates the intention to adopt technology by businesses, so that adaptive leadership provides a quick response to each change. The results of the study (Amoah, Bankuoru Egala, et al., 2023) found that TOE had no effect on business sustainability, but influenced the adoption of social media (Amoah, Bruce, et al., 2023).

Individual awareness in achieving MSME sustainability is also a part that supports TOE's competitive advantage. The addition of individual variables as factors that influence MSME sustainability, because the ownership of this business is dominated by individuals who also act as

employees in running business operations (Putri, Dwiputranti, et al., 2024). The novelty of this study can be seen from the exploration of the individual context in achieving MSME sustainability and in motivating themselves to adopt social media and the development of the TOE framework into TOEI. Individual factors are then measured using *self-efficacy*, *personal initiative*, and *self-anxiety* (Elnadi, 2022).

Based on the explanation, the sustainability of MSMEs in Bali Province is an important thing to study as an effort to support the fulfillment of SDGs. The focus of this study refers to *Technology-Organization-Environment-Individual* (TOEI) which is considered capable of fulfilling the gap in achieving MSME sustainability through the adoption of social media. The purpose of this study is to analyze the influence of TOEI on MSME sustainability through the adoption of social media, in order to support strategic management of MSME development in Bali Province.

Hypothesis

Based on the theoretical and empirical studies that have been described, this research will test ten hypotheses, which are described as follows:

H1: Technology factors have a positive and significant influence on social media adoption.

H2: Organizational factors have a positive and significant influence on social media adoption.

H3: Environmental factors have a positive and significant influence on social media adoption.

H4: Individual factors have a positive and significant influence on social media adoption.

H5: Technology factors have a positive and significant influence on the sustainability of MSMEs.

H6: Organizational factors have a positive and significant influence on the sustainability of MSMEs.

H7: Environmental factors have a positive and significant influence on the sustainability of MSMEs.

H8: Individual factors have a positive and significant influence on the sustainability of MSMEs.

H9: Social media adoption has a positive and significant effect on the sustainability of MSMEs.

H10: Social media adoption plays a mediating role in the influence of technology, organization, environment, and individuals on the sustainability of MSMEs.

RESEARCH METHODS

This research was conducted quantitatively by observing the population and samples that had been determined. The location of this research was MSMEs in Bali Province, where in the initial stage two areas were selected for the observation process, namely Denpasar City and Gianyar Regency. The purpose of the observation was to determine the real

conditions of MSMEs including the use of technology and business resilience strategies.

The observation results are used as a reference in formulating problems and determining research variables including technology factors (X1), organizational factors (X2), environmental factors (X3), individual factors (X4) as exogenous variables. The sustainability of MSMEs (Y) is determined as an endogenous variable by utilizing social media adoption (M) as a mediating variable. Then, each variable is measured using indicators stated in the questionnaire as a research instrument.

The research data testing was conducted using the Structural Equation Model (SEM) and was also used as a guide in determining the research sample. The population of this study was 439,432 MSME units, with the application of probability sampling techniques as sampling. This means that all members of the population are given the same opportunity to become samples. The number of research samples is calculated using the SEM standard, namely determining the minimum and maximum limits with the formula (Hair et al., 2021):

Sample = (number of indicators + number of latent variables) × (5 -10 times)

Minimum sample = (24 + 5) × 5 = 145 respondents

Maximum sample = (24 + 5) × 10 = 290 respondents

Based on the calculation of the formula, this study was given the opportunity to collect samples between 145-290 respondents. The research questionnaire was distributed using Google Forms and barcodes. However, for a number of MSMEs such as in Jembrana, Singaraja, Tabanan, Karangasem, Klungkung, and Bangli Regencies, the questionnaire was given directly because of the obstacle that MSME owners have low trust in the link received via WhatsApp. Then, the data that has been collected was analyzed using WarpPLS 7.0 software.

RESULTS AND DISCUSSIONS

Respondent Characteristics

The data that has been successfully collected during this research process is 190 data spread across the Regency/City in Bali Province and has met the sample criteria. The characteristics of the respondents of this study include the MSME sector, the type of social media used, the age of social media, the time of social media use per day, the location of the MSME, and the number of employees.

The dominant MSME sector that has filled out the questionnaire is food and beverages with 97 respondents with the dominant location being in Badung Regency with 59 respondents. Based on the type of social media that is most often used is Facebook, Instagram, Tiktok, and Whastapp with an average duration of use per day of less than five

hours. MSMEs in Bali Province have almost the same characteristics, namely that management is still prioritized by the direct owner, but from the data collected, 108 MSME owners have had between 2-5 employees with contract or daily status.

Output Combined Loadings and Cross-Loading

The results of the validity and convergent test of the study were stated to have met the criteria, namely the loading value of 0.6 with a significance p value (<0.05) (Hair et al., 2021). This provision is applied in accordance with the procedure with the aim of the decision to maintain reflective indicators. The results obtained show that the research indicators used has a greater cross-loading value to the MSMEsus construct which is the code for the MSME sustainability variable.

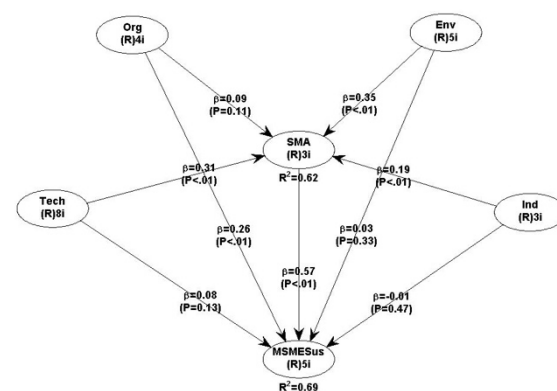


Figure 1 Outer Model

Composite Reliability

The results of the reliability calculation show that the construct is reliable because the composite reliability value is > 0.7. In addition, the AVE value also shows a value of > 0.5, meaning that the variance of the indicator can be explained. It is also known that the value of Q-Squared from the data analysis shows the size of the relevance of the prediction, has met the requirements, namely Q-Squared > 0.15.

RSquare

The Rsquare (R²) value is useful to explain how much influence the exogenous variable has on the endogenous variable including the mediating variable. First, the R² value of SMA (Social Media Adoption) is 0.62. This value means that 0.62 or 62 percent of SMA is proven to be influenced by TOEI Factors while the remaining 38 percent is influenced by other factors not used in this study. While the value of R²^{MSMEsus} (MSME Sustainability) is 0.69 or 69 percent which also shows the influence of TOEI. The remaining 31 percent is influenced by other factors not tested in this study.

Hypothesis Testing

The Influence of TOEI Framework on High School

After the data is declared valid and reliable, the analysis can be continued with hypothesis testing. At this stage, testing of the TOEI Framework is carried out on SMA with a summary of the test results as follows:

Table 1 Bootstrapping Hypothesis Testing

Code	Construct	Results
H1	Technology Factor → Social Media Adoption	Accepted
H2	Organizational Factors → Social Media Adoption	Rejected
H3	Environmental Factors → Social Media Adoption	Accepted
H4	Individual Factors → Social Media Adoption	Accepted

The first hypothesis in this study has been proven and accepted, where the technology factor has a positive and significant effect on the adoption of social media with a coefficient value of 0.31 and a significance value of $p < 0.01$. The technology factor is measured using seven indicators, namely relative advantage, compatibility (Hartanto & Soelaiman, 2021), complexity, triability, observability, cost effectiveness, and interactivity (Alkateeb & Abdalla, 2021; Amoah, Bruce, et al., 2023). MSMEs in Bali Province agree that when technological developments, especially in opening market access through social media, will open up new opportunities (Alkateeb & Abdalla, 2021) to reach consumers outside their domicile. However, adaptation in this technology takes a long time because social media is something new that must first be learned how to use it. This finding is in line with empirical studies (Hartanto & Soelaiman, 2021) that the use of increasingly advanced technology can provide new innovations for MSMEs to carry out more effective marketing activities through the use of social media.

This study clearly rejects the second hypothesis that organizational factors do not have a significant effect on social media adoption with a significance value of $p > 0.05$. The organization as a depiction of the internal business environment does not show its role in the use of social media. This condition can occur because the motivation of MSMEs to use social media to support marketing, sales, or maintain relationships with customers is influenced by changes in market conditions, competitor progress, changes in consumer behavior and other external factors. Previous findings also stated that (Cvjetković, 2023) the organization has no effect on social media adoption due to the lack of a culture of innovation in business that encourages the use of social media for the benefit of MSMEs. Employees are not aware that their role in encouraging the resilience of MSME businesses in

Bali Province is also their responsibility through the use of social media. So far, employees have only used social media for their personal interests, in addition to the fact that MSMEs themselves do not set a budget for improving social media skills or for promotion (Triopsakul, 2018).

The environmental factor has a coefficient value of 0.35 and a significance value of $p < 0.01$, indicating a positive and significant influence and supporting previous findings (Ahmad et al., 2019; Alkateeb & Abdalla, 2021). Many MSME businesses implement good social media practices due to industry pressure and bandwagon effects (Ahmad et al., 2019). Through social media, MSMEs will find it easier to monitor the movements of their main competitors when new innovations are launched. MSMEs can prepare competitive strategies either by imitating product diversification or competitive pricing strategies (Elnadi, 2022; Putri, Dewi, et al., 2024). The external environment is one of the important factors that must be considered for every change. Including when there is a change in consumer behavior that requires the industry to continue to produce innovative products (Prastian et al., 2022).

Other results found individual factors with a coefficient value of 0.19 and a significance value of $p < 0.01$ have a positive and significant effect on social media adoption. Individual skills and knowledge as MSME owners greatly influence the ability of a business to grow or not (Ramdani et al., 2013), overall individual factors that will perfect the TOE Framework. The higher the individual's awareness in realizing the lack of skills, the more it will increase their motivation to improve themselves, so that this awareness is what convinces that the business will be more resilient through the adoption of social media (Elnadi, 2022). MSME owners also have high fears when the social media they manage does not develop and will have an impact on the destruction of the business itself due to the loss of online consumer trust (Sahputra & Darmawan, 2023; Salah & Ayyash, 2024). This positive influence also proves that the initiative of MSME owners to promote their products through social media creates optimism in business resilience.

The Influence of TOEI Framework on MSME Sustainability

Sustainability shows the ability of MSMEs to remain in the industry competition by maintaining business strategies and paying attention to market changes (León-Gómez et al., 2023; Putri, Dwiputranti, et al., 2024). In this MSME sustainability test, only two hypotheses were successfully proven.

Table 2 Bootstrapping Hypothesis Testing

Code	Construct	Results
H5	Technology Factor →MSME Sustainability	Rejected
H6	Organizational Factors →MSME Sustainability	Accepted
H7	Environment Factor →MSME Sustainability	Rejected
H8	Individual Factor →MSME Sustainability	Rejected
H9	MSME Sustainability High School→	Accepted

Technological factors, environmental factors and individual factors that have been proven to influence the adoption of social media, have been proven to influence the sustainability of MSMEs in Bali Province because of the large significance value of $p > 0.01$. This means that in realizing the elements of sustainability with indicators of adaptation, capacity, resilience strategy (Alkateeb & Abdalla, 2021), goals, and risk mitigation (Amoah, Bruce, et al., 2023; Prastian et al., 2022).

In contrast to the organizational factor which has a coefficient of 0.26 and a significance value of $p < 0.01$ indicating a positive and significant influence on the sustainability of MSMEs. The measurements used are support management, employee competence (Ahmad et al., 2019), innovative culture, and financial resource availability (Amoah, Bruce, et al., 2023; Bruce et al., 2023). Management support in this case the MSME owner for business sustainability can be seen from the determination of the resilience strategy (Alkateeb & Abdalla, 2021). MSME performance as a measure of business success can be created from determining strategies including resource management, production activities, promotions and sales by the owner. Sensitivity to identifying consumer demand and measuring consumer satisfaction are also elements that support the determination of the resilience strategy (Amoah, Bruce, et al., 2023). So, achieving MSME sustainability must start from strengthening the organization first, including in fostering an innovative culture for employees to providing financial resources in order to support the implementation of business strategies.

The sustainability of MSMEs in Bali Province is also influenced by the adoption of social media with a coefficient value of 0.57 and a significance value of $p < 0.01$. The results of this study contradict previous findings (Ahmad et al., 2019), but support the finding (Alkateeb & Abdalla, 2021; Bruce et al., 2023) that the adoption of social media has a positive and significant effect on the sustainability of MSMEs. Businesses that are integrated with technology, especially to reach the

online market, open up opportunities for businesses to realize business sustainability (Amoah, Bankuoru Egala, et al., 2023; Amoah, Bruce, et al., 2023). Business sustainability not only has an impact on MSMEs in the market, but also has an impact on the social environment (Putri, Dwiputranti, et al., 2024) by opening up employment opportunities, thereby increasing welfare that supports SGDs. The use of social media to support the sustainability of MSMEs is simply realized through marketing innovation through content creation in the form of photos, videos, and creating product innovations (Prastian et al., 2022).

The Role of High School as a Mediating Variable in the Influence of TOEI on MSME Sustainability

Social media adoption in this study was tested as a mediating variable, this is based on empirical studies. First, SMA is known to be more effective when a business has proper management of technology, organization, and environmental conditions (Hartanto & Soelaiman, 2021). This SMA arises not only from the business initiative itself but also from external business influences such as competitors and consumers who want convenience in finding products. Second, in achieving business sustainability, especially for MSMEs, management must be based on the strength of the business itself in displaying its products. Through social media is stated as the right means to strengthen the position of the product in the market (Bruce et al., 2023), so it is found that the more adaptive the business is in adopting social media, the easier it is for the business to meet its business sustainability (Schneider, 2019).

The results of the mediation test of this study prove that SMA is only able to act as a mediator for the influence of technological factors and environmental factors on MSME Sustainability. Technology is the main force that is able to eliminate limitations in the world of marketing and provide benefits in the form of time and cost efficiency (Suariedewi et al., 2022). Mapping technology trends creates automatic decision-making by business owners (Kumar & Shankar, 2024), because the use of technology is not limited to highlighting the uniqueness of the business but also accelerating the process of analyzing consumer trends through social media algorithms. Technology is not only limited to marketing activities, but also business financial management, HR management, and production, through proper utilization of this all activities can be presented more transparently to the public through social media (Putri, Dewi, et al., 2024). The long-term impact is the practice of business ethics in supporting the achievement of MSME sustainability (Cvjetković, 2023).

Environmental factors that describe changes in conditions outside the business

organization and have the potential to influence business activities. Directly, environmental factors do not have a significant effect on this sustainability, but require the role of SMA as a mediator. This is indicated by the large path value of 0.201 and a significance value of <0.001. This means that competitor pressure and customer pressure can be identified as forms of environmental factors that encourage MSMEs to participate in utilizing social media as a competitive advantage. The presence of social media makes it easier for MSMEs to demonstrate their ability to face external pressure, so that the existence of a brand or product can be easily tracked digitally (Amoah, Bankuoru Egala, et al., 2023; Prastian et al., 2022).

Innovation and sustainable value can be born from the adaptation of technology through the use of digital platforms (Muthuraman, 2020; Schneider, 2019). When MSMEs can understand social media technology, this will facilitate adaptation to features that are relevant to their business such as services, marketing, and networking. Ultimately, SMA will encourage MSMEs to adapt more easily to market changes and technological developments (AlSharji et al., 2018). Seen from another side that may be experienced is through social media monitoring, MSMEs are facilitated to identify potential risks (Prastian et al., 2022) so that they are faster in taking preventive actions. This directs that MSMEs will have the right business risk mitigation.

CONCLUSION

This study aims to analyze the sustainability of MSMEs in Bali Province by implementing the TOE Framework integrated with individual elements, thus becoming the TOEI Framework. The results of this study found that to achieve business sustainability, MSME owners have the opportunity to continue to innovate in products by paying attention to market changes and consumer behavior. The most optimal identification is to use social media, in accordance with the findings that social media adoption has a positive and significant effect on the sustainability of MSMEs. Social media also shows its role as a mediator of the influence of technological factors and environmental factors on the sustainability of MSMEs. Then the success of social media adoption is influenced by technological factors, environmental factors, and individual factors.

REFERENCES

- Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019). Social media adoption and its impact on firm performance: the case of the UAE. *International Journal of Entrepreneurial Behavior & Research*, 25(1), 84–111. <https://doi.org/10.1108/IJEER-08-2017-0299>
- Alkateeb, M. A., & Abdalla, R. A. (2021). Social Media Adoption and its Impact on SMEs Performance A Case Study of Palestine. *Studies of Applied Economics*, 39(7). <https://doi.org/10.25115/eea.v39i7.4872>
- AlSharji, A., Ahmad, S. Z., & Abu Bakar, A. R. (2018). Understanding social media adoption in SMEs. *Journal of Entrepreneurship in Emerging Economies*, 10(2), 302–328. <https://doi.org/10.1108/JEEE-08-2017-0058>
- Amoah, J., Bankuoru Egala, S., Keelson, S., Bruce, E., Dziwornu, R., & Agyemang Duah, F. (2023). Driving factors to competitive sustainability of SMEs in the tourism sector: An introspective analysis. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2022.2163796>
- Amoah, J., Bruce, E., Shurong, Z., Bankuoru Egala, S., & Kwarteng, K. (2023). Social media adoption in smes sustainability: evidence from an emerging economy. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2023.2183573>
- Bansal, P., & DesJardine, M. R. (2014). Business sustainability: It is about time. *Strategic Organization*, 12(1), 70–78. <https://doi.org/10.1177/1476127013520265>
- Bruce, E., Keelson, S., Amoah, J., & Bankuoru Egala, S. (2023). Social media integration: An opportunity for SMEs sustainability. *Cogent Business & Management*, 10(1). <https://doi.org/10.1080/23311975.2023.2173859>
- Cvjetković, M. (2023). Organizational use and adoption of social media through TOE framework. *Management*, 28(2), 73–91. <https://doi.org/10.30924/mjcmi.28.2.6>
- Dinas Koperasi, U. K. dan M. (2023). *Data Keragaan UMKM Bali Tahun 2023*. diskopukm.baliprov.go.id
- Elnadi, M. (2022). Prioritisation of critical factors affecting the adoption of social media using best-worst method: Evidence from SMEs in Egypt. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2151184>
- Hair, J. F., Black, W. C., Hult, G. T. M., Ringle, C. M., & Sarstedt. (2021). *Multivariate Data Analysis* (Third Edition). Sage Publications.
- Hartanto, N., & Soelaiman, L. (2021). Factors Affecting Social Media Adoption Among SMEs in Jakarta. *Advances in Social Science, Education and Humanities Research* (Vol. 570), 486–491.
- Kumar, A., & Shankar, A. (2024). Building a sustainable future with enterprise metaverse in a data-driven era: A technology-organization-environment (TOE) perspective. *Journal of*

- Retailing and Consumer Services*, 81, 103986. <https://doi.org/10.1016/j.jretconser.2024.103986>
- León-Gómez, A., Santos-Jaén, J. M., Palacios-Manzano, M., & Garza-Sánchez, H. H. (2023). Unlocking sustainable competitive advantage: exploring the impact of technological innovations on performance in Mexican SMEs within the tourism sector. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-023-04025-y>
- Muthuraman, Dr. S. (2020). Digital Business Models for Sustainability. *Gedrag & Organisatie Review*, 33(02). <https://doi.org/10.37896/GOR33.02/115>
- Oktaviana, D., Supada, W., & Suweca, I. K. (2023). Determinasi Prinsip Ekonomi Kerthi Bali Pada Sektor UMKM di Desa Nagasepaha Kabupaten Buleleng. *Ekuitas: Jurnal Pendidikan Ekonomi*, 11(2), 326–339. <https://doi.org/10.23887/ekuitas.v11i2.69201>
- Prastian, G. A., Setiawan, A., & Bachtiar, N. K. (2022). SMEs' Sustainability: Between Business Resilience and Business Growth, Which One is More Significant in the Time of Crisis? *JURNAL MANAJEMEN BISNIS*, 9(1), 94–105. <https://doi.org/10.33096/jmb.v9i1.1086>
- Putri, I., Dewi, D. P. N., Putri, I., & Artana, I. M. (2024). Manajemen Strategis dan Pengembangan UMKM Kabupaten Jembrana melalui Analisis SWOT. *Warmadewa Economic Development Journal (WEDJ)*, 7(2), 79–87.
- Putri, I., Dwiputranti, M. I., Sudama, I. M., & Suariedewi, I. M. (2024). Adopsi Teknologi dan Perilaku Manajemen Keuangan Menuju Keberlanjutan UMKM Sarbagita. *Prosiding Seminar Teknologi, Akuntansi, Bisnis, Ekonomi, Dan Komunitas*.
- Ramdani, B., Chevers, D., & Williams, D. A. (2013). SMEs' adoption of enterprise applications. *Journal of Small Business and Enterprise Development*, 20(4), 735–753. <https://doi.org/10.1108/JSBED-12-2011-0035>
- Sahputra, A., & Darmawan, B. A. (2023). Faktor-Faktor Teknologi dalam Adopsi Media Sosial dan Dampaknya bagi Kinerja UMKM. *Selekta Manajemen: Jurnal Mahasiswa Bisnis & Manajemen*, 2(1), 55–68.
- Salah, O. H., & Ayyash, M. M. (2024). E-commerce adoption by SMEs and its effect on marketing performance: An extended of TOE framework with ai integration, innovation culture, and customer tech-savviness. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100183. <https://doi.org/10.1016/j.joitmc.2023.100183>
- Schneider, S. (2019). *The Impacts of Digital Technologies on Innovating for Sustainability* (pp. 415–433). https://doi.org/10.1007/978-3-319-97385-2_22
- Suariedewi, I. G. A. A. M., Adyatma, I. W. C., & Wulandari, I. G. A. A. (2022). The Impact of Social Media Marketing for MSMEs Sustainability in Covid-19 Period. *Journal of Business and Management Review*, 3(9), 641–655. <https://doi.org/10.47153/jbmr39.4602022>
- Tripopsakul, S. (2018). Social Media Adoption as a Business Platform: an Integrated TAM-TOE Framework. *Polish Journal of Management Studies*, 18(2), 350–362. <https://doi.org/10.17512/pjms.2018.18.2.28>