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THE INFLUENCE OF TECHNOLOGY, INNOVATION AND COLLABORATION ON SUSTAINABILITY OF BAMBOO WEAVING CRAFT BUSINESS IN SINGARAJA, BALI PROVINCE

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Abstract

The study aims to reveal the influence of technology, innovation and collaboration on the sustainability of bamboo woven craft businesses in Singaraja, Bali Province. The research method is designed based on a verification approach to strategic management of MSMEs, namely the hypothesis that has been formulated will be verified based on subjective business conditions and business continuity. The variables in this study include: technology, innovation and collaboration in bamboo woven craft businesses as exogenous variables, and business continuity as an endogenous variable. The population of the study was all bamboo woven craft business actors in Sidetapa Village, Tigawarsa Village and Banyuseri Village in the Singaraja area, while the sample size was determined as many as 100 respondents. The research instrument used a structured questionnaire with a simple random sampling technique. The analysis method used to test the research hypothesis is Partial Least Square (PLS) analysis. The findings of the study stated that the technology and collaboration variables had a positive and significant effect on the business sustainability variable, but the innovation variable did not show a significant effect on the sustainability of bamboo woven craft businesses in Singaraja.

Keywords: ***technology, innovation, collaboration, business sustainability***

I. INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) are a business sector that has a very important contribution to the State of Indonesia, especially in terms of job creation, increasing state revenue, economic diversification, poverty alleviation, regional development. This is proven by the fact that by 2023, approximately 64 million MSMEs contributed 8.73 trillion rupiah or 61% of Indonesia's total Gross Domestic Product (GDP) (Central Statistics Agency, 2023).MSMEs utilize profitable natural resources in areas that have not been economically exploited. MSMEs have the ability to help how to process natural resources in each region, which can increase local and national income in Indonesia.(Bakrie et al., 2024). The number of MSMEs in Indonesia continues to increase every year, indicating sustainable growth and development. With the increasing number of MSMEs, competition in the business world is getting tighter, forcing entrepreneurs to continue to innovate in order to face the dynamics of business that continue to develop over time.Supporting factors for business sustainability need to be improved in business activities to support the sustainability of MSME businesses.(Bakrie et al., 2024).According to Hanim and Noorman (2018) in Indonesia, there are various types of MSMEs operating in various sectors. Some types of MSMEs commonly found in Indonesia include: trade, services, culinary, creative industries, agriculture and fisheries, information technology, tourism,

construction and buildings, health, and renewable energy. Bamboo-based crafts are one of the main products of the community in the Singaraja area of Bali Province, especially in Sidetapa Village, Tigawarsa Village and Banyuseri Village. These three villages produce bamboo woven products with different characteristics and are known as Bali Aga villages (ancient villages) where most of the people process their natural products as a source of livelihood (Widiastini et al, 2023).Hartawan & Utama (2019) explained that the actions of the Bali Aga people who depend on nature for their economic life have shaped their knowledge and skills in managing natural resources to survive. The community cares for and utilizes bamboo sustainably. Through bamboo cultivation, various types of weaving are produced as an economic activity that provides income to meet daily needs which are practiced from generation to generation with enthusiasm (Widiastini et al, 2023).

Supporting factors for business sustainability need to be improved in business activities to support the sustainability of bamboo woven craft MSME businesses inSidetapa Village, Tigawarsa Village and Banyuseri Village in the Singaraja area.Studies on bamboo woven craft MSMEs have been widely conducted by researchers in national and international publications. Vuspitasari & Siahaan (2022) in their research in Suka Maju Village, Bengkayang Regency, West Kalimantan found that the products produced by weavers in the village were less innovative (innovation), marketing was still traditional (technology) and business networks were weak (collaboration). This was also found in the conditions in Sidetapa Singaraja Village, but the open attitude of the weavers in this village enabled them to survive and even exist as bamboo producers inBali (Widiastini et al, 2023).

The presence of information technology, especially the internet, will change the way of doing business by providing new opportunities and challenges that are different from conventional methods. The role of information and communication technology (ICT) is important to support business sustainability (Yanti et al., 2018), mastery of ICT for business actors is very necessary to be applied to business activities, high ICT skills increase the frequency of ICT use.The decline in MSME turnover is caused by the lack of adaptation to rapid technological changes, so that business actors have difficulty ensuring the continuity of their business in the long term. Especially in a difficult economic climate, MSMEs must recognize existing trends and opportunities and leverage technology to continue to grow.(Zuhra & Fitria, 2024). As is known, in developing and improving the people's economy such as MSMEs, many face limitations and challenges, one of which is technological limitations.,MSMEs must be able to transform by taking full advantage of the features, convenience and advantages of digital platforms. MSME digitalization is not only at the stage of onboarding MSMEs to e-commerce platforms, but must be directed so that MSMEs are able to remain competitive.(Marjukah, 2021).Advances in Information and Communication Technology (ICT) require businesses to adapt to various online marketing platforms, which are expected to increase sales and strengthen the sustainability of MSMEs in the future (Bakrie et al., 2024).

In addition to technology, business sustainability can also be influenced by the level of innovation. Very dynamic changes and high levels of business uncertainty make business actors dependent on the ability of human resources who have innovative behavior for the sustainability of MSME businesses.Entrepreneurs must be able to innovate,flowertechnology and the internet have changed the way businesses operate. Technology-based innovation is crucial for business sustainability. One example is an MSME in Kutawangi Village that produces banana chips and peyek. They have switched to a digital business model by utilizing platforms such as Instagram, Google Maps, WhatsApp Business, and Tokopedia for marketing. To remain competitive and contribute to the economy, MSMEs must continue to innovate, both in products and business strategies.(Zuhra & Fitria, 2024). According toHanaysha et al. (2022), companies must be able to extend the life cycle of their products in the market or create new products with innovation.

Through the innovation capabilities they have, companies are able to exploit the knowledge they have acquired, improved, and refined so that they can create organizational value or increase operational efficiency which can be an advantage compared to other companies so that the company is able to grow and develop continuously. Thus, this shows that innovation capabilities play an important role in maintaining the continuity of the company's business. The next factor studied is collaboration with other parties, because collaboration/business partnerships are a necessity for MSMEs to increase the capabilities, competitiveness and sustainability of MSME businesses (Marjukah, 2021). In order to maintain and improve their competitiveness, MSMEs must dare to open themselves up and open access to collaborate with parties because collaboration will also be able to maintain the sustainability of MSME businesses (Ginting, 2021). Collaboration is a key factor in assessing the better results that MSMEs can achieve when

working collectively, compared to task performance carried out independently. This is mainly achieved through networking and engagement with various stakeholders and partners. In this context, the synergistic benefits derived from the network positively influence MSME sustainability practices (Min et al., 2013). Based on the description above, it is known that technology, innovation and collaboration factors can influence business sustainability. HoweverThus, inconsistencies with the results of previous studies still occur, including the results of Anjaningrum's (2020) study where technology does not have a significant influence on the sustainability of MSME businesses in the city of Malang, andMarietza (2021) found no influence of social media on the sustainability of MSME businesses in the DKI Jakarta area.Furthermore, Usmayanti et al. (2023)in his research, innovation did not affect business sustainability due to the limitations of entrepreneurs in innovating. Research by Gautam (2016) found that the innovation carried out by most respondents was innovation in creating new products, but the innovation carried out was not yet able to boost business performance. The insignificant influence of collaboration on business sustainability was found byDeviastri & Annisa (2022), andAnnalin (2020) said that partial collaboration does not have a significant effect on business performance. That the amount of collaboration carried out with other parties will not affect the performance of MSME businesses. The existence of differences in the results of previous studies and problems that occur in the research object becomes a novelty and motivation to conduct research that aims to reveal the influence of technology, innovation and collaboration can have an impact on the sustainability of bamboo woven craft businesses in Singaraja, Bali Province.

II. THEORETICAL BASIS

Business Sustainability

Sustainability has become a very important issue and a concern for companies around the world since it was first introduced by the Brundtland omission in 1987. This issue sparked the birth of new ideas about the concept of economic development and its relationship to environmental and social aspects. Since then, researchers, organizations and governments have begun to adopt this concept to be applied in development in various sectors (Tan, Yeo, Ng, Tjandra, & Song, 2015). In the business context, Vildåsen and Havenvid (2018) stated that in the last thirty years there has been a rapid increase in interest in the social and environmental impacts that can be generated by entrepreneurial activities. According to Bansal and Jardine (2014) in their article entitled Business sustainability: It is about time, business sustainability is an effort to make whatever is needed can be met without sacrificing the ability of future generations, and sustainability aims to secure equity between generations.Business sustainability is something that is used to develop and protect the resources within it, which allows people to find a way to meet current and future needs, from a combined environmental, economic and societal perspective.(Hanaysha et al., 2022)

Technology

The word technology comes from the Greek, "technologia". This word consists of two words, namely: "Techne and logia". Techne means expertise and logia means studying something or a branch of a discipline of knowledge (Rusli, 2021). Thus, technology can be said to be an expertise learned from a branch of a discipline of knowledge. The development of technological progress develops along with the development of existing scientific progress so that technological developments must adapt and follow the developments of the times, the progress of science and technology is the biggest challenge for every social being, namely humans because they are required to adapt to circumstances and lives that are all practical and assisted by the existence of increasingly sophisticated and rapidly developing technology (Tsoraya et al., 2023). MSMEs must utilize digital technology to increase operational efficiency and expand market reach. The use of e-commerce platforms, social media, and business management applications can have a positive impact on the sustainability of MSMEs (Zuhra & Fitria, 2024)

Innovation

Innovation is defined as the transformation of knowledge and ideas into new products, processes or services.(Seow et al., 2021). According to the Organisation for Economic Co-operation and Development (OECD), innovation is defined as the application of new products and marketing methods, to maintain a company's competitive advantage. Research & Development (R&D) is also a common indicator to measure innovation, with relevant investments providing innovative efforts and resource allocation for innovation activities. In addition, patents represent

tangible results of observable and unobservable innovation, which express the dual characteristics of prioritizing the quantity of innovation and economic value. Innovation is furthermore a close process that focuses on the radical transformation of innovative resources throughout the procedure. In the Value Chain theory, innovation is considered as a gradual and uninterrupted process consisting of the stages of creation, development, and deployment (generation-development-deployment). This suggests that the assessment of innovation efficiency should consider two main processes, namely creation and transformation. Therefore, innovative activities are categorized into the R&D stage and the commercialization stage. Innovation is not only limited to the development of new products or services. Innovation also includes new business ideas and new processes. Innovation is also seen as a mechanism for companies to adapt to a dynamic environment. Therefore, companies are expected to create new thoughts, new ideas that offer innovative products and provide satisfactory services to customers. Innovation is increasingly important not only as a tool to maintain the survival of the company but also to excel in competition (Sinurat et al., 2017).

Collaboration

Collaboration is currently a popular term in business, whose philosophy has penetrated various sectors of the economy and society because it originates from "co-labor" or working with others to achieve common goals. This suggests that close collaboration between companies can produce superior economic outcomes than traditional exchange relationships, leading to value creation and competitive advantage (Payan et al., 2019). In terms of developing MSMEs, which so far still have many limitations, both in terms of capital, human resources, mastery of information technology and so on, but on the other hand also have comparative advantages. So in order to maintain and increase their competitiveness, MSME actors must dare to open themselves up and open access to collaborate with parties, (Ginting, 2021). Business collaboration is basically an action and business relationship to grow small businesses rationally. Collaboration is a process of working together between parties to produce ideas, concepts and/or problem solving in order to achieve a shared vision (Marjukah et al, 2021).

According to Zeng (2010) there are two forms of collaboration that may occur in an industry, namely vertical networks and horizontal networks. Vertical networks consist of clients, suppliers and other companies (competitors) while horizontal networks consist of research institutions, universities and government.. As is known, with all the limitations that exist in UMKM actors, on the other hand they also have advantages. UMKM actors in Indonesia also have the opportunity to build cooperation with related parties (Marjukah et al, 2021), among others: institutional government elements represented by the Ministry of Cooperatives, Ministry of Trade, Ministry of Tourism, Ministry of Education, Ministry of Communication and Information and others. As well as other stakeholders who can also be invited to collaborate, including banking, financial services authorities, large marketplaces (such as Tokopedia, Shopee, Lazada, etc.), as well as between MSME actors themselves.

The Impact of Technology on Business Sustainability

Research results byMarjukah et al, (2021)states that digital marketing has a significant influence on the performance variables of MSME businesses.Business sustainability is directly influenced by the role of perception of MSME business actors and the use of ICT facilities. The most dominant indicator is the perception of business actors in utilizing ICT facilities for business sustainability. In daily business activities, business actors have a positive understanding of the bias of using ICT facilities in the form of mobile phones and internet media to support the intensity of ICT use so that it has an impact on efficient services and good consumer trust also has an impact on increasing income, the speed of business development and increasing business development (Yanti et al., 2018). Tanti & Dewi's (2020) research found that the use of social media has a positive effect on the sustainability of Millennial MSME businesses in Buleleng District. Theoretically, from the actors. Millennial MSMEs can develop insights related to the use of social media, so practically this implies that Millennial MSME actors are able to increase sales, namely by utilizing social media properly, as a means of promotional activities in order to maintain business sustainability in the future. Furthermore, the following research hypothesis 1 can be formulated:

H1: Technology has a significant positive effect on business sustainability.

The Impact of Innovation on Business Sustainability

Innovation plays an important role in maintaining the continuity of the company's business. This is supported byresearch resultconducted by Hanaysha et al. (2022) showed the results of the study that innovation capability has a significant positive effect on business sustainability. Sari et al. (2022) also showed that innovation capability has a significant positive effect on business sustainability. Research by Zuhra & Fitria (2024) found that business model innovation has a significant effect on business sustainability, the better the innovation implemented, the higher the sustainability of MSMEs. MSME actors are advised to continue implementing their business model innovations, this can be done by following market trends, adopting new technologies, and continuing to innovate in their products and services. Therefore, the following research hypothesis 2 can be formulated:

H2: Innovation has a significant positive effect on business sustainability.

The Impact of Collaboration on Business Sustainability

Based on several studies, several factors influence sustainability practices, such as concern of local communities and nearby stakeholders, networks within clusters, value chain collaboration, and effective communication. This proves that sustainability practices are significantly and positively improved through collaboration. (Das et al., 2020). Research by(Marjukah et al, 2021) found bThe suggestion of the influence of business collaboration variables on business performance, so it can be concluded that the business collaboration/partnership variables have a significant influence on business performance variables..Previous research also widely supports advances in sustainability practices and performance through inter-firm networks and collaborative efforts (Zahoor et al., 2023).Based on the above explanation, the third hypothesis of this research can be formed, namely:

H3: Innovation has a significant positive effect on business sustainability.

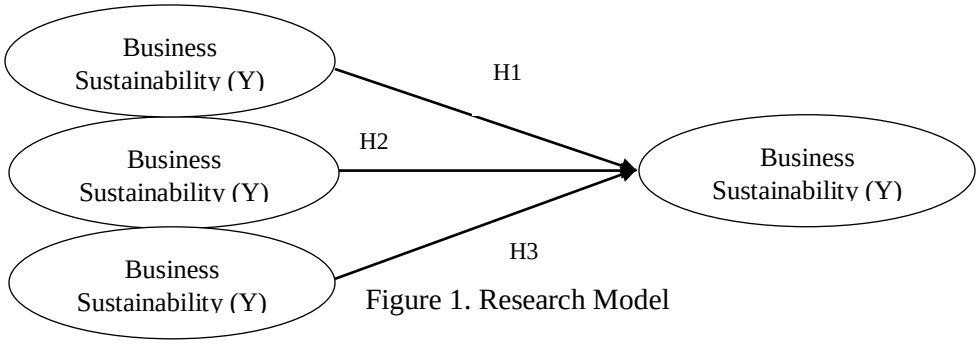

Figure 1. Research Model

III. RESEARCH METHODS

The method in this study is designed based on the strategic management approach of MSMEs, especially related to the implementation of technology in business management, the innovations produced, and how bamboo weaving craftsmen collaborate with partners in an effort to maintain the sustainability of their business. This study is verifiable, namely the hypothesis that has been formulated will be verified based on subjective business conditions and business sustainability. The variables in this study include: technology, innovation and collaboration in bamboo weaving craft businesses as exogenous variables, and business sustainability as an endogenous variable.

Table 1. Research Variables and Indicators

Variables	Indicator	Source
Business Sustainability (Y)	1. Economy 2. Social 3. Environment	Ebner & Baumgartner (2006)
Technology (X1)	1. Use of technology 2. The role of technology 3. Ease of technology	Marfuah & Hartiyah (2024)

Innovation (X2)	1. Product innovation 2. Process innovation 3. Marketing innovation 4. Organizational innovation	Bahren et al. (2018)
Collaboration (X3)	1. Trust Between Members 2. Exchange of Information 3. Involvement in Collaborative Activities 4. Sustainability of Collaborative Relationships	Susanti & Sulistyowati (2024)

PThe research population is all bamboo weaving craft business actors inSidetapa Village, Tigawarsa Village and Banyuseri Village are in the Singaraja areawhich are still operating. The sample size was determined as many as 100 respondents which was calculated using mThe MOE (margin of error) sampling method developed by Rao Purba (1996).

$$n = \frac{Z^2}{4(moe)} = \frac{1{,}96^2}{4(0{,}1)^2} = 96{,}04 \approx 97$$

n : Number of samples
Z : Normal distribution level at 5% significance level (1.96)
Moe :Maximum margin of error (10%)

From the calculation results, the number of samples studied was 97, to increase accuracy, the sample was rounded to 100 respondents.The research instrument is a structured questionnaire with a simple random sampling technique. The analysis method uses descriptive analysis which aims to describe the research variables and Partial Least Square (PLS) analysis to test the research hypothesis.

IV. RESULTS AND DISCUSSION

Validity and Reliability Test

Validity test measures the accuracy of statement items in measuring variables, which are tested through validity criteria. Validity criteria use intercorrelation with valid item-total correlation if >0.30(Malhotra & Birks, 2007). The results of the validity test on all items produced a corrected item-total correlation value in the range of 0.502-0.696 (all greater than 0.30), thus it can be concluded that all statement items meet the validity criteria, and are declared valid in measuring the variables of technology, innovation, collaboration, and business sustainability. The reliability test aims to determine the level of reliability of the measuring instrument with internal consistency using the Cronbach's Alpha coefficient. A Cronbach's Alpha value ≥0.60 indicates a reliable questionnaire(Malhotra & Birks, 2007), and a value >0.70 is considered good reliability, with 0.60-0.70 as the acceptable lower limit (Hair et al., 2019). The results of the reliability test on all variables produced Cronbach's Alpha values of 0.827; 0.853; 0.844; and 0.624 (all greater than 0.60), so that the compilation of questionnaire statement items used to measure the variables of technology, innovation, collaboration, and business sustainability can be stated as reliable and can be trusted as a measuring instrument with good reliability or within acceptable limits.

Variable Description

In this study, descriptive analysis is to describe the assessment of respondents on each statement item in the questionnaire. The results of respondents' responses to each statement item and subsequent variables can be categorized using the class interval formula guide (Malhotra & Birks, 2007). The business sustainability variable produces an average score of 3.98, indicating that the bamboo woven craft business in Singaraja Regency has been running sustainably. This is reflected in the success in economic and social aspects, although the environmental aspect still requires further attention. The mean indicator shows that the economic aspect (4.16) has the highest score, reflecting the success of business actors in maintaining profits and financial stability.

The social aspect (4.00) is also good, indicating that the craft business has a positive impact on the community, such as creating jobs and preserving traditions. However, the environmental aspect (3.78) is at a lower average score, indicating that attention to environmentally friendly practices already exists, but still needs to be improved to be more

integrated into business operations. In the technology variable, the average variable score of 3.63 indicates that technology in the bamboo weaving craft business in Singaraja Regency has been sufficiently utilized by business actors. In general, business actors feel that technology has made a good contribution in supporting their operations, although there is still room for improvement, especially in terms of optimizing its use. The average mean indicator shows that the use of technology (3.49) is at a level approaching sufficient or moderate, indicating that technology has been used in the craft business, although not yet fully optimal. The role of technology (3.81) is considered significant in supporting efficiency and business development, providing a contribution that is felt by business actors. Meanwhile, the ease of technology (3.59) shows that the technology used is quite easy to access and apply, but there are still challenges in its operation, such as limited training or technical understanding.

The average score of the innovation variable is 3.83, indicating that innovation in the bamboo weaving craft business in Singaraja Regency is at a good level. Business actors have made efforts to make updates in various aspects of the business, especially in product and marketing innovation, although innovation in processes and organizations still requires further development. The mean indicator shows that product innovation (4.02) is the most prominent aspect, reflecting the efforts of business actors in developing new products that meet market needs. Process innovation (3.69) is also at a high level, indicating that there is an update to production methods that have begun to be implemented, although it still needs to be improved. Marketing innovation (3.94) indicates that innovative marketing strategies, such as the use of digital platforms, have been implemented well. On the other hand, organizational innovation (3.67) is the lowest or approaching a moderate level, indicating that updating the structure and management is not the main focus of business actors at this time.

In the collaboration variable, the average variable score of 3.98 indicates that collaboration in the bamboo weaving craft business is strong, with a good working relationship between business actors and partners. This reflects high trust, good information exchange, and sustainable working relationships. The mean indicator shows that trust between members (4.29) is at a very high level, becoming a strong foundation for successful collaboration. Information exchange (3.89) is good, although there is still room to continue to improve its efficiency and effectiveness. Involvement in collaborative activities (3.75) shows the level of active participation of members, although currently not all members are fully involved. The sustainability of collaborative relationships (4.00) is also at a good level, reflecting the potential for stable and long-term working relationships.

Partial Least Squares - SEM

1. *Outer Model Analysis*

Outer model analysis is evaluated with 3 tests, namely convergent validity, discriminant validity, and internal consistency. Convergent validity is assessed based on outer loading and AVE (Average Variance Extracted). The rule of thumb used for convergent validity is outer loading ≥ 0.50 and AVE ≥ 0.50(Hair et al., 2017). The results of the convergent validity test show that all indicators have produced outer loading values greater than the minimum limit of 0.50, so that all indicators are declared valid in measuring the constructs of technology, innovation, collaboration, and business sustainability. The results of the convergent validity test also show that the AVE values for each construct are 0.745; 0.667; 0.667; and 0.707, all of which are greater than 0.50, so that the measurement of the constructs of technology, innovation, collaboration, and business sustainability is also declared valid.

The second evaluation in the outer model analysis is discriminant validity, which is evaluated using the Heterotrait-Monotrait Ratio (HTMT), which is a new criterion that is better at assessing discriminant validity than the Fornell-Larcker Criterion. Henseler et al(Hair et al., 2017:119)states that the HTMT value above 0.90 indicates low discriminant validity, so that the construct is declared to meet discriminant validity if the HTMT is less than 0.90. The results of the Fornell-Larcker Criterion produce values in the diagonal section that are greater than other values. In addition,The HTMT value for all combinations of constructs also produces a value smaller than the maximum limit of 0.90, so it is concluded that the measurement of the constructs of technology, innovation, collaboration, and business sustainability is stated to meet discriminant validity.

The next evaluation of the outer model is internal consistency, which is testing the consistency of the indicators in measuring the construct. Internal consistency in PLS can use the measures of Cronbach's alpha and composite reliability. Cronbach's alpha measures the low limit reliability, while composite reliability measures the actual reliability value of a construct. The rule of thumb for composite reliability must be greater than 0.70, although a value

of 0.60 is still acceptable.(Hair et al., 2017). The results of the internal consistency test of all constructs have Cronbach's alpha and composite reliability values all greater than 0.70, so that the constructs of technology, innovation, collaboration, and business sustainability are declared reliable or have a good level of reliability (good reliability).

2. *Inner Model Analysis*

In the evaluation of the structural model, there are several steps, namely collinearity analysis, R2 level measurement, Q2 level measurement, f2 effect size level measurement, model fit evaluation, and PLS Predict evaluation.

Table 2. Inner Model Evaluation

Types of Analysis	Statistics	Mark
Collinearity	*VIF*	X1 1.035; X2 1.008; X3 1.044
Coef. of Determination	*R-square*	0.535
Predictive Relevance	*Q-square*	0.493
Effect Size	*f-square*	X1 0.222; X2 0.085; X3 0.703
Fit model	*SRMR*	0.077
PLS Predict	*RMSE*&MAE *CVPAT*	PLS<LM PLS<LM

*Collinearity*or collinearity is a level of correlation that is too large between independent variables, which causes redundancy of influence, so that the influence that should be significant will become insignificant. The results of the collinearity evaluation show that all influence paths in the model have VIF values below the threshold <5. This indicates that there are no serious collinearity problems that can cause distortion of path coefficient estimates in the model. Thus, the model can be relied on to produce accurate estimates of the relationship between variables without any bias caused by collinearity. EvaluationNext, in the inner model, it is seen from the R2 value or coefficient of determination. The R2 level has a value range of 0-1. Hairet al. (2017) explained in the substantial category, namely 0.75, moderate at a value of 0.50 and weak at 0.25. Based on data processing with PLS-SEM, the R2 value produced on the business sustainability variable is 0.535, meaning that the percentage of the influence of technology, innovation, and collaboration on business sustainability is 53.5% and is included in the moderate category.

Q2 Measurementtested using blindfolding testing and a model can be said to meet the predictive relevance criteria if the coefficient of is higher than 0. A Q^2 value greater than 0 indicates that the model has predictive relevance for a particular endogenous construct, conversely a value of 0 and below indicates a lack of predictive relevance.Q^2(Hair et al., 2017:207). In measuring the level, the relative size of predictive relevance, namely the values 0.02; 0.15; and 0.35 indicate that the independent variable construct has small, medium, or large predictive relevance for a particular dependent variable construct. The results of the PLS-SEM analysis produced a Q2 value that met the criteria of more than 0 (0.493), then it can be classified as large predictive relevance, meaning that the technology, innovation, and collaboration variables have great relevance in predicting business sustainability. EvaluationNext, in the inner model, it is seen from the f2 value. The f2 value shows the contribution of the exogenous construct to the R2 of the endogenous construct. The results of the analysisf2 on business sustainability, the value of the technology construct is 0.222; innovation 0.085; and collaboration 0.703, this shows that the construct that provides the greatest contribution to business sustainability is collaboration, then technology and finally innovation.

Analysis*fit model*conducted to see whether the model used in this study is appropriate or not.withempirical data. In measuring the fit model, it is done with the Standardized Root Mean Square Residual (SRMR) value. SRMR is the level of difference between the model and the data, and a small value approaching zero is expected. Hair et al. (2017:208) explained that the SRMR value limit of less than 0.08 indicates a fit or suitable model (good fit), an SRMR value of less than 0.12 indicates that the model is still within acceptable limits (marginal fit), while an SRMR value of more than 0.12 indicates that the model is not fit (poor fit). The results of the PLS_SEM model fit evaluation showed an SRMR value of 0.077, this value is smaller than 0.08, so it is concluded that the conceptual model developed in this study has a good model fit (good fit). PLS Predict is used to evaluate how good the predictive ability of the PLS model

estimation results is. In the PLS Predict results, researchers need to compare the RMSE, MAE, and MAPE values in the PLS model with the benchmark using a linear model/Linear Model (LM) to produce predictions, with the provisions of(Shmueli et al., 2019). To predict the dependent construct consisting of business sustainability, this construct consists of 3 indicators. The results of PLS Predict show that the three indicators generally produce lower RMSE and MAE values in the PLS model than the LM model, so it is concluded that the PLS model has a higher predictive ability. Furthermore, based on CVPAT, the PLS model produces a smaller loss value than the LM model, this information provides the conclusion that the selection of the PLS model is correct because it has good relevance.

Hypothesis Testing

The results of the estimation of the direct influence coefficient, indirect influence, and total influence on the PLS-SEM model with the SmartPLS v.4 program were carried out using the bootstrapping approach, the results of which are presented in Figure 2.

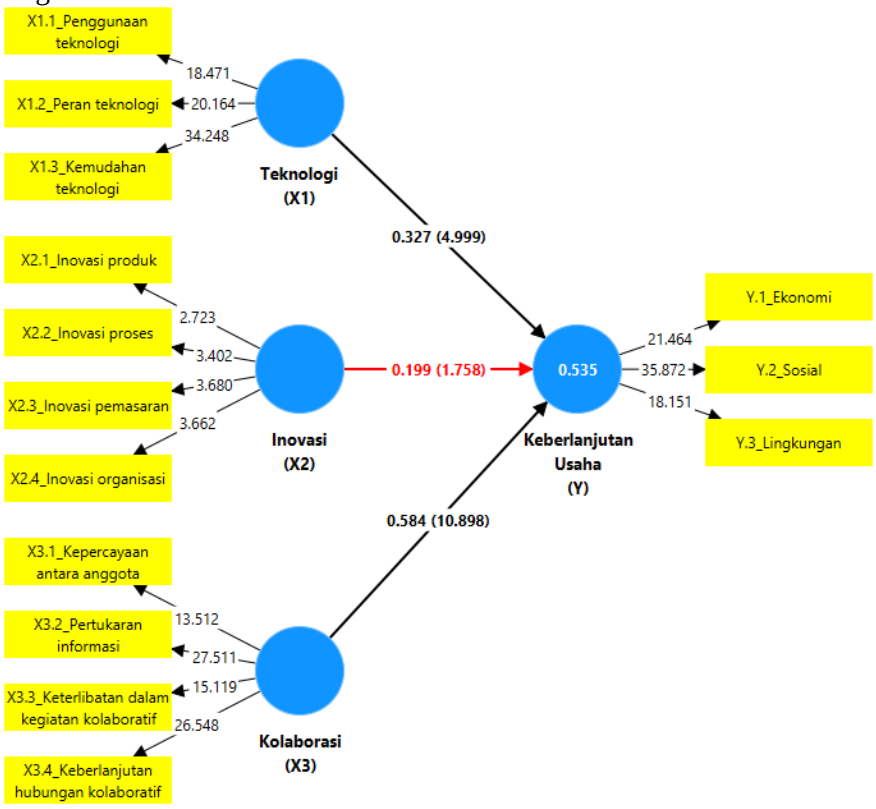

Figure 2. PLS Bootstrapping

Hypothesis testing which is a test of the significance of the coefficient of influence between variables is carried out using PLS Bootstrapping, or it can also use the path coefficient table. The research hypothesis can be accepted if the t-statistic value (T-statistic) ≥ 1.96 or the p-value is smaller than the error rate (α) of 5%. The following are the results of the significance test of the influence between variables based on the PLS-SEM output:

Table 3. Results of Hypothesis Testing of Influence Between Variables

Direct Influence	Coefficient	t-stat	*P-values*	Decision
Technology (X1) -> Business Sustainability (Y)	0.327	4,999	0,000	H1 accepted
Innovation (X2) -> Business Sustainability (Y)	0.199	1,758	0.079	H2 rejected
Collaboration (X3) -> Business Sustainability (Y)	0.584	10,898	0,000	H3 accepted

The influence of technology on business sustainability produces a coefficient of 0.327 with a t-statistic of 4.999 (greater than 1.96) and a p-value of 0.000 (less than 0.05) indicating that the influence of technology on business sustainability is significant. This means that the application of technology has a fairly strong positive influence on the sustainability of bamboo woven craft businesses in Singaraja Regency. A significant influence explains that the application of digital technology changes the way businesses operate and interact with customers. A study by McKinsey (2018) shows that MSMEs that adopt digital technology tend to experience faster growth than those that do not adopt it. There are several benefits of digitalization for MSMEs, namely: 1) Wider Market Access By using e-commerce, MSMEs can reach customers outside their area, including international markets; 2) Operational Efficiency Technology such as accounting software and inventory management helps MSMEs manage their businesses more efficiently; and 3) Increased Visibility Social media and digital marketing allow MSMEs to promote their products at low cost but with wide reach. By utilizing technology, business actors are able to face competitive market challenges and create products that are more relevant to consumer needs, thus supporting the sustainability of their businesses. These results support the results of previous studies,Marjukah et al, (2021)Digital marketing has a significant influence on the performance variables of MSME businesses, kBusiness sustainability is directly and significantly influenced by the role of perceptions of MSME business actors and the use of ICT facilities (Yanti et al., 2018), research by Tanti & Dewi (2020) resulted in findings that the use of social media has a positive effect on the sustainability of MSME businesses, and (Tanti & Dewi, 2020) by utilizing social media properly as a means of promotional activities can maintain business sustainability in the future.

The effect of innovation on business sustainability produces a coefficient of 0.199 with a t-statistic of 1.758 (less than 1.96) and a p-value of 0.079 (greater than 0.05), indicating that the effect of innovation on business sustainability is not statistically significant. This indicates that innovation still has a weak influence in supporting business sustainability. This insignificance can occur because currently the innovation carried out is still limited to the basic level, such as product or marketing innovation, without being supported by more strategic process innovation or organizational innovation. In addition, business actors still face obstacles in implementing innovation consistently due to limited resources or managerial capacity, so that its impact on business sustainability is still not optimal. PCompanies must be able to extend the life cycle of their products in the market or create new products with innovation (Hanaysha et al., 2022). Innovation is not only limited to the development of new products or services, innovation also includes new business ideas and new processes. Companies are expected to create new thoughts and ideas that offer innovative products and provide satisfactory service to customers, because innovation is also seen as a mechanism for companies to adapt in a dynamic environment as a tool to maintain the company's survival (Sinurat et al., 2017). The results of this hypothesis test are in accordance with the results of previous studiesby Gautam (2016) who found that the innovation carried out by business actors was only innovation in creating new products, but the innovation carried out was not yet able to boost business performance.Furthermore, Usmayanti et al. (2023), iInnovation does not affect business sustainability due to the limitations of entrepreneurs in innovating.

The influence of collaboration on business sustainability produces a coefficient of 0.584 with a t-statistic of 10.898 (greater than 1.96) and a p-value of 0.000 (smaller than 0.05) indicating that the influence of collaboration on business sustainability is significant. This high coefficient value indicates that collaboration has a very strong positive influence on business sustainability. This very high influence explains that strong collaboration allows business actors to share information, expand networks, and create synergies in resource management. Good collaboration also builds trust among members, encourages collective innovation, and ensures the sustainability of cooperative relationships.According to Min et al. (2013), collaboration is a key factor to achieve better results that can be achieved by SMEs when working collectively. Networking and engagement with various stakeholders and partners can positively influence SME sustainability practices.In an effort to maintain and increase competitiveness, MSME actors must dare to open themselves up and open access to collaborate with various parties (Ginting, 2021).Collaboration according to Zeng (2010) consists of 2 forms in an industry, namely vertical networks and horizontal networks. Vertical networks consist of clients, suppliers and other companies (competitors) while horizontal networks consist of research institutions, universities and government. The results of this study support the results of several previous studies by Das et al. (2020) whichproving that sustainability practices are significantly and positively improved through collaboration,Marjukah et al. (2021) foundcollaboration variables have a significant influence on business

performance variables, furthermoreresearch (Zahoor et al., 2023) also broadly supports advances in sustainability practices and performance through inter-firm networks and collaborative efforts.

V. CONCLUSION

Based on the results of the study, it can be concluded that the variables of technology and collaboration have a positive and significant effect on the sustainability variable of bamboo woven craft businesses in Singaraja. However, the innovation variable does not show a significant effect on business sustainability. As a theoretical implication of this study, it has succeeded in providing an explanation of the consistency of the influence of technology and collaboration on business sustainability. As a practical implication, every bamboo woven craft business actor, especially in Singaraja, can implement the use of technology to support business and marketing processes, because digital marketing can provide added value when compared to conventional marketing systems. As well as expanding collaboration with various related parties for business development, such as government elements represented by the UMKM Office, Trade Office, Tourism and Creative Economy Office, Communication and Information Office, and other stakeholders who can also be invited to collaborate, including banking, distributors/agents in the city, marketplaces, suppliers of raw materials (suppliers), and between bamboo woven craftsmen.

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