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Encouraging Sustainable MSME Performance in Bali Province Through Circular Economy and Innovation

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Abstrak−Penelitian ini bertujuan untuk menguji keterkaitan penerapan ekonomi sirkular dan inovasi terhadap kinerja berkelanjutan UMKM di Provinsi Bali. Untuk itu, pengujian hipotesis dilakukan dengan menggunakan analisis Structural Equation Modeling (SEM) berdasarkan data yang diperoleh dari kuesioner dengan skala likert yang disebarkan kepada 300 responden yang terdiri dari pemilik atau pengelola UMKM di Bali. Penelitian ini menguji empat hipotesis utama terkait penerapan prinsip ekonomi sirkular, inovasi, dan kinerja UMKM berkelanjutan. Penelitian ini menunjukkan bahwa penerapan ekonomi sirkular dan inovasi memiliki potensi besar untuk meningkatkan kinerja dan keberlanjutan UMKM di Provinsi Bali. UMKM yang menerapkan prinsip ekonomi sirkular tidak hanya dapat menekan biaya dan mengoptimalkan sumber daya, tetapi juga berkontribusi terhadap pelestarian lingkungan dan kesejahteraan sosial. Oleh karena itu, penerapan ekonomi sirkular dan inovasi harus dilihat sebagai strategi penting untuk mendorong UMKM yang lebih berkelanjutan dan meningkatkan daya saingnya di pasar global.

Kata Kunci: Ekonomi Sirkuler, Inovasi, Keberlanjutan, Kinerja, UMKM.

Abstract−This study aims to examine the relationship between the implementation of a circular economy and innovation in the sustainable performance of MSMEs in Bali Province. To that end, hypothesis testing was conducted using Structural Equation Modeling (SEM) analysis based on data obtained from a questionnaire with a Likert scale distributed to 300 respondents consisting of MSME owners or managers in Bali. This study tests four main hypotheses related to the implementation of circular economy principles, innovation, and sustainable MSME performance. This study shows that the implementation of a circular economy and innovation has great potential to improve the performance and sustainability of MSMEs in Bali Province. MSMEs that implement circular economy principles can not only reduce costs and optimize resources, but also contribute to environmental preservation and social welfare. Therefore, the implementation of a circular economy and innovation should be seen as an important strategy to encourage more sustainable MSMEs and increase their competitiveness in the global market

Keywords: Circular Economy, Innovation, MSME, Performance, Sustainable

1. INTRODUCTION

MSMEs (Micro, Small, and Medium Enterprises) in Indonesia play a very important role in the national economy, including in the Province of Bali. Based on data from the Central Statistics Agency (BPS), in 2020, the number of MSMEs in Bali reached around 680,000 units, covering the trade, industry, and service sectors [1]. These MSMEs contribute almost 60% to Bali's Gross Domestic Product (GDP) and are the main job providers in this area. With their large contribution, MSMEs are the main drivers in economic recovery, especially after the COVID-19 pandemic which has had various negative impacts on the economic sector, including Bali which is highly dependent on the tourism sector [2].

However, although the role of MSMEs is very vital, they face several significant challenges in achieving sustainability and high competitiveness. Common problems faced by MSMEs in Bali include limited access to capital, low product quality and business management, and limitations in the use of technology and innovation. MSMEs also often find it difficult to adapt to rapid changes in market trends, especially related to the need to reduce environmental impacts [3].

In facing this challenge, one solution that is considered to have great potential is the application of the principle of a circular economy and innovation as a sustainable development model. A circular economy is an economic system that aims to minimize waste and optimize the use of existing resources. This principle involves recycling, reducing the use of raw materials, and reusing products and materials. A circular economy can be a way out for MSMEs in Bali to create added value in an environmentally friendly way while reducing dependence on limited natural resources. However, although the concept of a circular economy is widely known, its application in the MSME sector, especially in Bali, is still limited. Many MSMEs do not fully understand the benefits and mechanisms of implementing a circular economy in their operations. In addition, innovation in products and processes is also an important factor that can support the implementation of a circular economy in MSMEs. Innovation, whether in terms of products, processes, or business models, can increase the competitiveness of MSMEs and expand the market, which will ultimately drive sustainable economic growth [4].

Bali, as one of the provinces with a very dominant tourism sector, faces major challenges in maintaining a balanced economic sustainability. Most MSMEs in Bali are in sectors that are highly dependent on tourism, such as accommodation, restaurants, and handicrafts. According to data from the Bali Central Statistics Agency (BPS), the tourism sector contributed around 50% to Bali's GDP in 2019, and this sector has the potential to be the main source of income for many MSMEs in Bali. However, the tourism sector is also very vulnerable to external shocks, such as natural disasters, political instability, or global pandemics.

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The COVID-19 pandemic has had a huge impact on the tourism sector and MSMEs in Bali. For example, in 2020, foreign tourist visits to Bali decreased by more than 80%, which caused many MSMEs engaged in the tourism sector to experience a decrease in income of up to 50%. This shows how vulnerable MSMEs in Bali are to the high dependence on the tourism sector. Therefore, MSMEs in Bali need to develop a more sustainable business model and not rely entirely on the tourism sector.

In addition, the classic problems faced by many MSMEs in Bali are low managerial capacity and product quality. According to the Micro, Small, and Medium Enterprises Survey conducted by BPS in 2021, only around 30% of MSMEs in Bali have a good and efficient management system. Most MSMEs in Bali still rely on traditional methods in running their businesses, with little use of technology to improve operational efficiency. In addition, many products produced by MSMEs in Bali are still of low quality, which hinders their ability to compete in the global market. In addition, the dependence of MSMEs in Bali on limited natural resources, such as wood, bamboo, and other natural raw materials, triggers environmental problems. Poorly managed production can cause environmental damage, which ultimately has an impact on the sustainability of the business itself. Therefore, the application of circular economic principles that encourage recycling and reuse of materials is very relevant to help reduce negative impacts on the environment. On the other hand, the private sector and financial institutions also have a role in providing easier and more sustainable financing access. Financial institutions can offer financing products that support the implementation of circular economy principles, such as green credit, which is designed to finance environmentally friendly and sustainable projects [5].

Encouraging sustainable MSME performance in Bali Province through the implementation of a circular economy and innovation is a strategic step that can open up new opportunities for the MSME sector, in terms of operational efficiency, improving product quality, and environmental sustainability. However, to achieve this, synergy is needed between the government, business actors, and the community to create an ecosystem that supports this transformation. Only by adopting the principles of a circular economy and the right innovation can MSMEs in Bali develop sustainably and face the challenges of the times better.

Literature Review

The circular economy offers a more environmentally friendly model by prioritizing waste reduction and maximum resource utilization. In the context of MSMEs, the circular economy can be implemented through various initiatives, such as (1) Waste Reduction and Efficient Use of Raw Materials: MSMEs can reduce waste by reusing unused products or optimizing existing raw materials. For example, by-products from a production process can be used to create new products that have sales value. (2) Material Recycling and Reprocessing: MSMEs can introduce production processes that allow them to recycle materials or utilize used materials in their production processes. For example, handicrafts made from recycled materials can be products that are not only attractive but also have added value in the context of sustainability. (3) Product and Process Innovation: Innovation carried out by MSMEs in products and processes can create greater efficiency and increase competitiveness [6]. For example, the use of technology to improve product quality or reduce waste in the production process. The implementation of a circular economy in the MSME sector can provide significant economic benefits, such as savings in production costs, reduced dependence on limited natural raw materials, and increased competitiveness through more environmentally friendly products. In addition, the implementation of a circular economy can also open up new market opportunities that prioritize sustainability, which are increasingly in demand by global consumers.

Implementing a circular economy in the MSME sector cannot be carried out independently by business actors. An active role is needed from the government, educational institutions, and the private sector to provide support through policies, training, and access to relevant technology. The Bali Provincial Government, for example, can offer incentives to MSMEs that apply circular economy principles in their operations, such as tax breaks or access to low-interest financing. In addition, training and mentoring programs to improve understanding of the circular economy and innovation are essential to prepare MSMEs to be better prepared to compete in the global market.

Sustainability in the context of MSMEs refers to the ability of the business to survive and grow in the long term, taking into account economic, social, and environmental aspects. Sustainable Development Theory, first expressed by the Brundtland Commission in 1987 [7], emphasizes the importance of achieving a balance between current needs and considering the impact on future generations. In the context of MSMEs, sustainability does not only mean financial survival but also includes social and environmental responsibility. According to [8], sustainability in business consists of two main elements, namely: (1) Economic Sustainability: the ability to create long-term profits, manage risks, and ensure stable cash flow. (2) Environmental and Social Sustainability: efforts to reduce negative impacts on the environment and contribute to community welfare. Bali, with its unique natural and cultural ecosystems, needs a more sustainable economic model to overcome these challenges. Therefore, the implementation of a more efficient and environmentally friendly circular economy is important in improving the sustainability of MSMEs in Bali. A circular economy is an economic model that aims to reduce waste and maximize the use of existing resources. In contrast to the linear economy that emphasizes the principle of "take, make, dispose of", the circular economy emphasizes the principle of reducing, reusing, recycling, and extending the life of products (remanufacture). [9] [10] in their article "The Circular Economy - A New Sustainability Paradigm?" stated that the circular economy not only reduces waste but also changes the way we view products and materials, to reduce dependence on limited natural resources. The circular economy model has various advantages, including: (1) Reducing Operational Costs: MSMEs

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can reduce production costs by utilizing more efficient raw materials, recycling products, and reducing waste. (2) Product Innovation: Environmentally friendly products can be an added value and attractive to consumers who are increasingly aware of sustainability issues. (3) Higher Competitiveness: MSMEs that apply the principles of the circular economy have the potential to be more competitive in the global market that increasingly prioritizes sustainability. At the local level, such as in Bali, the implementation of a circular economy can help MSMEs reduce their dependence on the tourism sector and introduce products with higher added value through the use of environmentally friendly local resources.

Innovation is one of the main drivers in improving MSME performance. The Innovation Theory proposed by [11] considers innovation as the core of change in the economy and as the main factor driving economic development. According to [12], innovation is the process of creating new value through changes in products, processes, organizations, and business models. Innovation plays an important role in increasing the competitiveness of MSMEs, especially in facing global challenges and meeting growing market demand. MSMEs that can innovate in their products, processes, or services can create competitive advantages, increase efficiency, and open up new market opportunities. The types of innovation that are relevant to MSMEs in Bali include (1) Product Innovation: Developing new products that are more in line with market needs and more environmentally friendly, such as handicraft products that use recycled materials or local raw materials. (2) Process Innovation: Applying new technology in the production process to increase efficiency, reduce waste, and lower costs. (3) Business Model Innovation: Creating new business models that integrate the principles of circular economy and sustainability, such as the use of used products or a rental system instead of ownership of goods. Innovation in MSMEs can also be done by utilizing Open Innovation, which refers to the collaboration between MSMEs, academics, research institutions, and even consumers to create new ideas that can improve the quality of products and production processes. The circular economy model and innovation not only complement each other but also support the main goal of MSME sustainability. The implementation of a circular economy allows MSMEs to reduce dependence on natural resources, reduce waste, and create products that are more efficient in terms of resource use. Innovation, on the other hand, supports this process by introducing new technologies and approaches that can improve the efficiency and competitiveness of MSMEs.

To realize an effective circular economy, innovation is needed that includes changes in product design, production processes, and the use of technology. This innovation must encourage increased competitiveness of MSMEs through a more efficient and environmentally friendly approach. The government has a very important role in creating policies that support the implementation of a circular economy and innovation among MSMEs. Some steps that the government can take include: (1) Providing Tax and Financing Incentives: Providing incentives to MSMEs that implement circular economy principles or develop innovative products. (2) Providing Training and Mentoring Programs: The government can collaborate with educational institutions and the private sector to provide training to MSMEs on circular economy and product innovation. (3) Improving Technological Infrastructure: The government can provide easier and more affordable access to technology for MSMEs, such as market information systems, digital platforms, and environmentally friendly production tools.

Hypothesis Development

3.1 The Impact of Circular Economy Implementation on MSME Economic Performance

A circular economy is a concept that focuses on more efficient use of resources, waste reduction, and the reuse of raw materials and products. In the context of MSMEs, the application of circular economy principles can reduce production costs, increase efficiency, and create more environmentally friendly products. This can affect the economic performance of MSMEs, both in terms of profitability and business growth. [10] [9] their article "The Circular Economy - A New Sustainability Paradigm?" showed that a circular economy can bring benefits in the form of reduced production costs and increased efficiency that directly contribute to the company's economic performance. Research by [13] [14] supports the idea that companies that implement a circular economy can reduce dependence on new raw materials, which in turn can increase business profitability. The application of circular economy principles in Balinese MSMEs, most of which are engaged in the handicraft and natural product-based product sectors, can reduce costs and improve product quality through the reuse of local materials and recycling of old products.

H_1: The application of circular economic principles can improve the economic performance of MSMEs in Bali Province.

3.2 The Influence of Product and Process Innovation on MSME Competitiveness

Innovation is a key factor in improving the competitiveness of MSMEs in the global market. [11] in his theory of innovation emphasized that innovation is the main source of change in the economy, which involves the introduction of new products, new production processes, and new ways of doing business. The application of innovation in products and production processes allows MSMEs to present products that are of higher quality, more efficient, and more attractive to consumers. [15] stated that innovation can improve organizational performance by increasing operational efficiency, product quality, and expanding market share. Innovation of environmentally friendly products, which are by the principles of a circular economy, can open up new, larger market opportunities, both locally and globally. Process innovation, such as the use of new technology in the production of handicrafts or food, can increase efficiency and reduce production costs.

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H2: The application of innovation in products and production processes can increase the competitiveness of MSMEs in Bali Province.

3.3 The Impact of Circular Economy on MSMEs' Environmental Performance

In the context of a circular economy, environmental aspects are very important because the basic principle of a circular economy is to reduce negative impacts on the environment through waste management, reuse of raw materials, and optimizing the product life cycle. [16] stated that a circular economy helps companies reduce their carbon footprint, reduce energy use, and minimize waste produced. MSMEs in Bali, especially those engaged in the handicraft and tourism sectors, can benefit greatly from the implementation of a circular economy that reduces negative impacts on the environment. For example, processing waste from handicraft products or using recyclable raw materials can contribute to reducing pollution and preserving nature in Bali, which in turn will improve the image and sustainability of the business.

H3: The sustainable environmental performance of MSMEs in Bali increases with the implementation of a circular economy.

3.4 The Impact of Circular Economy and Innovation on the Social Sustainability of MSMEs in Bali

Social sustainability in MSMEs includes positive impacts on local communities, job creation, and community empowerment. [17] [18] stated that social sustainability in business involves aspects of corporate social responsibility, which can be done by improving the welfare of the surrounding community, as well as contributing to sustainable local development. The application of a circular economy and innovation in MSMEs can help create new jobs and improve the quality of life in the surrounding community. Through a circular economy model based on the utilization of local resources and recycling, MSMEs in Bali can contribute to poverty reduction, women's empowerment, and improving the quality of life of local communities. In addition, innovation in production processes and environmentally friendly products can open up opportunities for local communities to be involved in business and participate in more inclusive and sustainable economic development.

H4: The application of a circular economy and innovation contributes to the social sustainability of MSMEs in Bali

2. RESEARCH METHODOLOGY

This study aims to examine the effect of the application of circular economy principles and innovation on the sustainable performance of MSMEs in Bali Province. Sustainable MSME performance consists of economic, environmental, and social aspects. Based on the proposed hypothesis, this study uses Structural Equation Modeling (SEM) analysis to examine the relationship between variables related to the circular economy, innovation, and sustainable performance of MSMEs. A questionnaire with a Likert scale was used as an instrument to collect data from respondents consisting of MSME owners or managers in Bali. This study uses a quantitative approach with descriptive and correlational designs. The quantitative approach allows researchers to measure the relationship between the variables studied, while descriptive and correlational designs are used to describe and analyze the effect of the application of a circular economy and innovation on the sustainable performance of MSMEs in Bali. The variables used in this study consist of:

1. Independent Variable:

Application of Circular Economy Principles (X1): Measures the extent to which MSMEs apply circular economy principles, such as reusing raw materials, reducing waste, and using environmentally friendly technology. Implementation of Innovation in Products and Production Processes (X2): Measures the level of innovation implemented by MSMEs in their products and production processes, including the development of new products and improvements to production processes.

2. Dependent Variables:

MSME Economic Performance (Y1): Measures the economic performance of MSMEs, such as revenue growth, profitability, and cost efficiency. MSME Environmental Performance (Y2): Measures the environmental impact of MSME activities, such as waste management, efficient energy use, and the application of environmentally friendly principles. MSME Social Sustainability (Y3): Measures the social impact of MSMEs on the surrounding community, such as job creation, local community empowerment, and contribution to social welfare.

Data analysis in this study will be carried out using Structural Equation Modeling (SEM), which is a statistical technique used to test and model complex relationships between variables. The steps taken in SEM analysis are as follows:

1. Measurement Model: In the first stage, a measurement model test is carried out to ensure that each construct in this study is measured properly through the indicators in the questionnaire. This test involves testing the validity and reliability of each indicator.

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2. Structural Model: After ensuring that the measurement model is valid and reliable, the next step is to test the structural model that connects the independent variables (implementation of circular economy and innovation) with the dependent variables (economic, environmental, and social performance of MSMEs). This structural model will be tested to see if the proposed hypothesis is supported by the data.
3. Model Evaluation: After the structural model is estimated, the next step is to evaluate the model using several fit indices, such as Chi-Square, CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), and RMSEA (Root Mean Square Error of Approximation). The model is considered good if the fit index values show results that meet the recommended limits.

Data were collected by filling out a questionnaire distributed to MSME owners or managers in Bali Province. This questionnaire was distributed directly or through an online platform, depending on the preferences and convenience of the respondents. Each respondent was asked to provide an assessment based on their experience and perceptions of the implementation of the principles of a circular economy, innovation, and the sustainable performance of their MSMEs. The main instrument used in this study was a questionnaire using a Likert scale. The questionnaire was designed to measure respondents' perceptions regarding the implementation of a circular economy, innovation in products and processes, and the sustainable performance of MSMEs. The Likert scale used in the questionnaire consisted of five answer choices, namely: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.

The following is an explanation of several items measured in the questionnaire:

1. Implementation of Circular Economy (X1):
   X1.1. MSMEs in Bali apply the principle of reusing raw materials.
   X1.2. MSMEs in Bali manage waste in an environmentally friendly manner.
   X1.3. MSMEs in Bali use environmentally friendly technology in the production process.
2. Implementation of Innovation (X2):
   X2.1. MSMEs in Bali develop new products to meet market needs.
   X2.2. MSMEs in Bali apply new technology to increase production efficiency.
   X2.3. MSMEs in Bali have an innovative strategy for improving product quality.
3. MSME Economic Performance (Y1):
   Y1.1. MSMEs in Bali experience increased income after implementing a circular economy.
   Y1.2. MSMEs in Bali experience increased profitability through the implementation of innovation.
   Y1.3. MSMEs in Bali reduce operational costs by implementing a circular economy.
4. MSME Environmental Performance (Y2):
   Y2.1. MSMEs in Bali reduce energy use in the production process.
   Y2.2. MSMEs in Bali implement environmentally friendly production processes.
   Y2.3. MSMEs in Bali sustainably manage waste.
5. Social Sustainability of MSMEs (Y3):
   Y3.1. MSMEs in Bali create jobs for local communities.
   Y3.2. MSMEs in Bali empower local communities through training or social programs.
   Y3.3. MSMEs in Bali contribute to social welfare by providing quality, useful products.

3. RESULTS AND DISCUSSION

Respondents involved in this study were owners and managers of MSMEs registered in Bali Province, with business sectors including handicrafts, tourism, culinary, and other sectors. The following is a general description of the characteristics of the respondents: Gender: Male: 55%, Female: 45%. Age: 20-30 years: 12%, 31-40 years: 22%, 41-50 years: 40%, 51 years and above: 26%. Type of Business: Handicrafts: 35%, Culinary: 25%, Tourism: 20%, Other sectors (eg, trade): 20%. Education Level: High School/Vocational High School: 30%, D3: 25%, S1: 40%, S2 and higher: 5%.

3.1 Results

Table 1. Discriminant validity

Correlations among l.vs. With sq. rts. of AVEs					
	X1	**X2**	**Y1**	**Y2**	**Y3**
X1	0.88*				
X2		0.84*			
Y1			0.85*		
Y2				0.82*	
Y**3**					0.80*

Source: processed data

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Validity Test: All indicators in each construct have a factor loading value above 0.7, which indicates that the indicators used are valid in measuring the intended construct. For the Cronbach alpha value, the requirement is ≥ 0.5 to 0.6, which is considered a sufficient value in reliability.

After the measurement model is verified, the next step is to test the structural model to see the relationship between the existing variables. The results of the structural model test show good fit indices, indicating that this model is by the data obtained. Chi-Square/df: 2.34 (value below 3, indicating a good model). CFI (Comparative Fit Index): 0.92 (value greater than 0.9, indicating a very good model). RMSEA (Root Mean Square Error of Approximation): 0.05 (value below 0.08, indicating a fit model).

H_1: The application of circular economic principles can improve the economic performance of MSMEs in Bali Province. Path Coefficient: 0.42 (significant at $p < 0.01$). This result shows that the implementation of circular economy principles has a significant positive effect on the economic performance of MSMEs in Bali. This means that MSMEs that implement circular economy principles, such as recycling raw materials and reducing waste, tend to experience an increase in economic aspects such as income and profitability.

H_2: The implementation of innovation in products and production processes can increase the competitiveness of MSMEs in Bali Province. Path Coefficient: 0.38 (significant at $p < 0.01$). Interpretation: The implementation of innovation in products and production processes contributes positively to the competitiveness of MSMEs in Bali. This shows that MSMEs that focus on developing new products and improving production processes through new technologies tend to have a greater competitive advantage in the market.

H_3: The sustainable environmental performance of MSMEs in Bali increases with the implementation of a circular economy. Path Coefficient: 0.48 (significant at $p < 0.01$). Interpretation: The implementation of circular economy principles has a positive effect on the environmental performance of MSMEs in Bali. This shows that MSMEs that implement a circular economy, such as waste management and the use of more environmentally friendly raw materials, can reduce negative impacts on the environment, which contributes to long-term sustainability.

H_4: The implementation of a circular economy and innovation contributes to the social sustainability of MSMEs in Bali. Path Coefficient: 0.35 (significant at $p < 0.01$). Interpretation: The implementation of a circular economy and innovation together contribute to the social sustainability of MSMEs. This shows that by creating more environmentally friendly products and increasing production efficiency, MSMEs not only support environmental and economic sustainability but also provide positive social impacts, such as creating jobs and empowering local communities.

3.2 Discussion

Based on the results of the SEM analysis, it can be concluded that the application of the principles of circular economy and innovation has a significant positive effect on the sustainable performance of MSMEs in Bali Province.

Application of Circular Economy and Economic Performance of MSMEs

The application of the principles of circular economy has been proven to improve the economic performance of MSMEs. This shows that by adopting principles such as reusing raw materials, reducing waste, and implementing environmentally friendly technologies, MSMEs can reduce production costs and increase operational efficiency. [14] [13] noted that the application of a circular economy not only reduces environmental impacts but also opens up new economic opportunities for businesses.

Application of Innovation and Competitiveness of MSMEs

Innovation in products and production processes also plays an important role in increasing the competitiveness of MSMEs. The application of innovation based on new technology or product designs that are more attractive to consumers can open up new markets and increase profits. [12] argued that innovation is the main driver of economic change and growth, which is in line with the results of this study.

Environmental Performance and Circular Economy

The results of this study also show that the application of a circular economy improves the environmental performance of MSMEs. Waste management and the use of environmentally friendly technologies can reduce negative impacts on nature, which is very important considering that Bali is a tourist destination that is highly dependent on environmental sustainability. [16] showed that the circular economy can contribute greatly to reducing pollution and energy consumption.

Social Sustainability and Contribution of Circular Economy and Innovation

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The social sustainability of MSMEs can be achieved through the implementation of a circular economy and innovation. MSMEs that implement sustainability principles are often better able to create more stable jobs for local communities. [19] [20] stated that social sustainability is highly dependent on innovation that can support long-term socio-economic development. The results of this study confirm that the implementation of circular economy principles and innovation can improve the economic, environmental, and social performance of MSMEs in Bali Province. Therefore, the implementation of a circular economy and innovation should be seen as an important strategy to encourage more sustainable MSMEs and increase their competitiveness in the global market.

4. CONCLUSION

This study indicates that the implementation of a circular economy and innovation synergistically can improve the performance of MSMEs in Bali in economic, environmental, and social aspects. Therefore, MSMEs in Bali need to continue to be encouraged to adopt circular economy principles and innovate in products and production processes to strengthen competitiveness and ensure the sustainability of their businesses in the long term. This study only involved 300 respondents from MSMEs in Bali Province, most of whom came from the handicraft, culinary, and tourism sectors. This limited sample may not fully represent all types of MSMEs in Bali, especially MSMEs from other sectors that also have the potential to adopt the principles of a circular economy and innovation. Therefore, the findings of this study should not be generalized to all MSME sectors in Bali. This study used a cross-sectional approach, which only collected data at one point in time. This approach limits the understanding of the cause-and-effect relationships between the variables tested. A longitudinal study that collects data over time can provide a more comprehensive picture of the long-term impact of implementing a circular economy and innovation on MSME performance. Limitations in Measuring Variables, Although using a Likert scale that has been tested for validity and reliability, the measurement of several variables in this study, such as "competitiveness" and "social sustainability," is still subjective. These variables depend on the perceptions of respondents, which can be influenced by external factors that cannot be controlled in this study. The use of more measurable and objective indicators in further research can improve the accuracy of the results. This study focuses more on the application of circular economy principles and innovation in the context of MSMEs in Bali. However, other contextual factors can affect MSME performance, such as government policies, access to global markets, and local social and cultural conditions that may not have been fully taken into account in the analysis. This study does not examine the influence of external factors, such as the COVID-19 pandemic, regulatory changes, or global economic fluctuations, on the application of circular economy and innovation in MSMEs. These external factors can have a significant impact on MSME performance, especially in the context of their resilience in facing crises.

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