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Assessing the Performance and Competitive Strategies of Bamboo Weaving MSMEs in Bali Using Quantitative Associative Causal Design

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Abstract

This study explores the factors influencing the competitiveness and performance of bamboo weaving Micro, Small, and Medium Enterprises (MSMEs) in Bali, using a quantitative associative causal design. Bamboo weaving, an integral part of Balinese culture, faces significant challenges post-COVID-19. This research aims to analyze key factors such as business capabilities, product quality, infrastructure, technology, resources, government policies, and external support, and their impact on the competitiveness and performance of these MSMEs. Data were collected from 100 bamboo weaving MSMEs in Buleleng and Bangli using structured surveys. The collected data were analyzed using Partial Least Squares (PLS) structural equation modeling to validate the proposed hypotheses. The study reveals that product quality (path coefficient = 0.275, t-statistic = 3.048, p-value = 0.003), infrastructure (path coefficient = 0.187, t-statistic = 2.176, p-value = 0.032), technology (path coefficient = 0.239, t-statistic = 3.231, p-value = 0.002), resources (path coefficient = 0.179, t-statistic = 2.048, p-value = 0.043), and external support (path coefficient = 0.185, t-statistic = 2.387, p-value = 0.019) significantly influence the competitiveness of bamboo weaving MSMEs. In contrast, business capabilities (path coefficient = 0.169, t-statistic = 1.856, p-value = 0.066) and government policies (path coefficient = -0.031, t-statistic = 0.283, p-value = 0.778) were found to be insignificant in this context. The findings indicate that improvements in product quality, better infrastructure, adoption of modern technologies, effective resource management, and robust external support systems are critical in enhancing competitiveness. However, the expected positive impact of competitiveness on MSME performance (path coefficient = 0.182, t-statistic = 1.269, p-value = 0.207) was not statistically significant. This suggests that factors beyond competitiveness, such as market conditions and internal business processes, play a more substantial role in determining performance outcomes. This study provides practical recommendations for MSMEs to enhance competitiveness, emphasizing the need for improved product quality, infrastructure, technology adoption, resource management, and leveraging external support. Additionally, the research highlights the necessity for stronger, more effective government policies tailored to the unique challenges of bamboo weaving MSMEs. These insights are valuable for MSME owners, policymakers, and stakeholders aiming to support the bamboo weaving industry in Bali, ensuring its sustainability and growth in the post-pandemic era.

Keywords: Bamboo Weaving, MSMEs, Competitiveness, Performance, Quantitative Associative Causal Design

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are pivotal to the economy of Indonesia, including in Bali. These enterprises are considered the backbone of the economy due to their significant contributions to GDP, job creation, and overall economic growth [1]. In developing countries, MSMEs are crucial for providing income, reducing poverty, and facilitating employment, thereby serving as an economic backbone [2]. Specifically, in Indonesia, MSMEs play a foundational role in the national economy, contributing up to 60% of the national income (GDP) compared to large industries [3]. Moreover, in India, the MSME sector is the backbone of the economy, contributing around 30% of the GDP, 50% of exports, and a major share in employment [4]. The importance of MSMEs is further emphasized by their role in driving economic growth, social development, and sustainable practices. These enterprises contribute significantly to the GDP and the creation of new job opportunities [5]. Additionally, MSMEs are crucial for stability, employment creation, and the economic development of a country, with their ability to adapt to business trends such as flexible production, downsizing, and outsourcing [6]. The resilience of the MSME sector is highlighted as a vital driver of the world economy, underscoring its crucial role in economic progress [7]. In addition to their economic

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contributions, MSMEs are essential for community development. They leverage local resources and skills, fostering entrepreneurship and innovation. The presence of MSMEs enhances economic dynamism and provides a pathway for upward social mobility. The adaptability of MSMEs allows them to respond quickly to market changes, ensuring economic stability and resilience in Bali. Their ability to innovate and cater to niche markets, especially in traditional crafts and local products, further cements their importance in the regional economy.

Recent statistics underscore the significance of MSMEs in Bali. As of May 2022, there were 440,609 registered MSMEs in the region, according to the Bali Cooperative and MSMEs Agency [8]. This marks a notable increase from 412,265 units in 2021, reflecting a growth of 28,344 MSMEs or 6.4% within a year. This growth trend highlights the resilience and dynamism of the MSME sector, which continues to thrive despite the economic disruptions caused by the COVID-19 pandemic. The sector's contribution to Bali's GDP and employment figures illustrates its critical role in sustaining economic activity and providing livelihoods. The government of Bali has recognized the importance of MSMEs and has implemented various initiatives and policies to support their growth and sustainability. Financial assistance programs have been established to provide much-needed capital to these enterprises, enabling them to expand and innovate. Training programs to enhance entrepreneurial skills and business management have been rolled out to ensure that MSME owners and employees can effectively manage and grow their businesses. Marketing support initiatives, including the promotion of local products and participation in trade fairs, have been instrumental in helping MSMEs reach broader markets and increase their sales. Moreover, the government has introduced policies to create a conducive environment for MSMEs to flourish. These policies include simplifying business registration processes, providing tax incentives, and improving access to credit. By creating a supportive ecosystem, the government aims to empower MSMEs, ensuring they continue to play their vital role in Bali's economy. The ongoing support and development of MSMEs are essential for maintaining economic growth, fostering innovation, and ensuring the long-term sustainability of Bali's economy.

The bamboo weaving industry in Bali holds a profound cultural significance, deeply rooted in the island's history and traditions. Bamboo weaving has been integral to Balinese culture for centuries, showcasing the island's rich heritage and artisanal skills. This craft involves intricate techniques passed down through generations, reflecting the creativity and expertise of Balinese artisans. Bamboo weaving is not just an economic activity but a cultural practice embedded in the daily lives and rituals of the Balinese people. The traditional techniques involve a meticulous process of selecting, cutting, drying, and weaving bamboo into various functional and decorative items. These items, from baskets and mats to intricate decorative pieces, play an essential role in religious ceremonies and daily use, signifying their importance in maintaining cultural heritage. The economic contribution of the bamboo weaving industry to Bali is substantial, particularly in rural areas where employment opportunities are limited. This industry provides a source of income for many families, helping to alleviate poverty and improve living standards. The products crafted by Balinese weavers are highly valued for their quality and craftsmanship, making them popular among tourists and international buyers. This demand has elevated the bamboo weaving industry to a significant position in Bali's export economy. The industry's integration with the tourism sector further amplifies its economic impact, as tourists often seek authentic, handcrafted souvenirs embodying local culture. Moreover, the global trend towards sustainable and eco-friendly products has increased the demand for bamboo weaving items, enhancing their market value and economic contribution. Prominent areas in Bali known for their exceptional bamboo weaving craftsmanship include Desa Sidetapa in Buleleng and Desa Kayubihi in Bangli. Desa Sidetapa is renowned for producing some of the finest bamboo crafts that have gained international recognition. The artisans in this village are skilled in creating a wide variety of products, from traditional household items to modern decorative pieces, maintaining high-quality standards that attract local and international markets. Similarly, Desa Kayubihi in Bangli is famous for its diverse bamboo products, including sokasi (traditional baskets), lampshades, and other decorative items. The bamboo weaving industry in Kayubihi has thrived due to its strategic blend of traditional techniques and contemporary designs, catering to evolving market preferences and ensuring the sustainability of the craft.

The COVID-19 pandemic has had a profound impact on the bamboo weaving market in Bali, leading to a significant decline in demand from both local and international buyers [9]. The abrupt halt in tourism, a major demand driver for bamboo products, severely affected sales. Tourists who previously purchased these items as souvenirs or decorative pieces were no longer visiting, leading to a sharp drop in local market demand. Similarly, international trade restrictions

and logistical challenges disrupted the export of bamboo products, further diminishing the market reach of these MSMEs. As a result, many bamboo weaving enterprises faced substantial revenue losses, threatening their financial stability and long-term viability. Operational challenges also escalated during the pandemic, compounding the difficulties faced by bamboo weaving MSMEs. Supply chain disruptions became a major issue as transportation restrictions and lockdowns hindered the procurement of raw materials. The increased raw materials and transportation costs financially strained these small businesses. Furthermore, labor shortages emerged as a critical problem. Many artisans, fearing COVID-19 transmission, were reluctant to work in close quarters or had to stay home to care for family members. This labor shortage reduced production capacity and affected the quality and timely delivery of products, exacerbating the financial woes of the MSMEs. In response to these unprecedented challenges, MSMEs and the government initiated several recovery efforts to mitigate the pandemic's impact. Many bamboos weaving MSMEs have turned to digital marketing to reach customers now shopping online more than ever. By leveraging social media platforms and e-commerce websites, these enterprises aimed to sustain their customer base and expand their market reach. The government also played a crucial role by providing financial assistance, training programs, and infrastructure support to help MSMEs navigate the crisis. Initiatives such as promoting local markets and encouraging domestic consumption of bamboo products were implemented to boost sales. Additionally, efforts were made to streamline supply chains and improve access to raw materials, ensuring that MSMEs could maintain production despite the ongoing challenges.

These combined efforts have shown positive results, helping bamboo weaving MSMEs slowly recover and adapt to the new market conditions. However, the path to full recovery remains long and requires continued support and innovation. Embracing digital transformation and strengthening local market ties will be essential for these enterprises to build resilience against future disruptions. By addressing immediate operational issues and long-term strategic adjustments, bamboo weaving MSMEs in Bali can hope to regain their foothold in the market and continue to thrive post-pandemic. The bamboo weaving MSMEs in Bali have long been integral to the local economy and cultural heritage. These small and medium enterprises (SMEs) are known for their intricate and high-quality bamboo crafts, which have domestic and international markets. However, the COVID-19 pandemic brought unprecedented challenges, severely disrupting the operations and sales of these MSMEs. Pre-pandemic, these businesses thrived on a stable market demand and consistent tourist influx, significantly contributing to their revenue. The pandemic-induced lockdowns, travel restrictions, and economic slowdown led to a sharp decline in sales, leaving many of these enterprises struggling to stay afloat. Despite the gradual easing of rules and a slow return to normalcy, bamboo weaving MSMEs have found it challenging to regain their pre-pandemic sales. This issue highlights a critical problem that needs addressing to ensure the survival and growth of these enterprises.

The need to enhance competitiveness among bamboo weaving MSMEs has become more pressing in the post-pandemic period. The traditional methods and business models that served these MSMEs well in the past need to be revised in the current economic landscape. Competitiveness in this context refers to the ability of these enterprises to attract and retain customers, innovate in their product offerings, and efficiently manage their resources. Several factors influence this competitiveness, including business capabilities, product quality, infrastructure, technology, resources, government policies, and external support. To successfully navigate the post-pandemic economic environment, bamboo weaving MSMEs must adapt to these factors and leverage them to enhance their market position. This paper aims to explore these factors comprehensively, analyzing how they impact the competitiveness of bamboo weaving MSMEs and, consequently, their overall performance. By identifying and addressing these challenges, the study seeks to provide actionable insights that can help these MSMEs improve their competitiveness and achieve sustainable growth in the long run. In Bali's rapidly evolving economic landscape, where traditional crafts such as bamboo weaving play a significant role, understanding the dynamics that influence the success of these small and MSMEs is crucial. The primary objective of this study is to analyze the factors that affect the competitiveness of bamboo weaving MSMEs in Bali. Competitiveness is a multifaceted concept encompassing various elements, including business capabilities, product quality, infrastructure, technology, resources, government policies, and external support. By systematically examining these factors, the study aims to identify which aspects are most critical for enhancing the market position of these enterprises. This comprehensive analysis will provide valuable insights into the strengths and weaknesses of the current business practices and suggest areas for improvement to ensure the sustainable growth of these MSMEs.

Additionally, the study seeks to assess the impact of competitiveness on the performance of bamboo weaving MSMEs post-COVID-19. The pandemic has significantly altered the business environment, and MSMEs need to adapt to survive and thrive. This research will evaluate how different competitive strategies these enterprises adopt influence their sales, market share, and overall business sustainability performance outcomes. By correlating competitiveness with performance metrics, the study highlights the most effective strategies to help these MSMEs recover from the pandemic's adverse effects and build resilience against future disruptions. The findings from this assessment will contribute to the academic understanding of MSME competitiveness and provide practical recommendations for business owners and policymakers to support the revitalization of the bamboo weaving industry in Bali.

In the context of Bali's economy, where MSMEs play a pivotal role, particularly in traditional crafts like bamboo weaving, understanding the factors that drive their success is essential. The global COVID-19 pandemic has underscored these enterprises' need for resilience and adaptability. As the economy begins to recover, it is crucial to investigate the elements that enhance the competitiveness of bamboo weaving MSMEs. This study is guided by the first critical research question: What factors influence the competitiveness of bamboo weaving MSMEs? Addressing this question involves exploring various determinants such as business capabilities, product quality, infrastructure, technology adoption, resource availability, supportive government policies, and external support mechanisms. By identifying and analyzing these factors, the study aims to comprehensively understand what drives competitive advantage in the bamboo weaving industry. Competitiveness, however, is not an end; it must translate into tangible business performance to be meaningful. Therefore, the second research question of this study is: How does competitiveness affect the performance of these MSMEs? This question links the identified competitiveness factors to key performance indicators such as sales growth, market share, and overall business sustainability. The study will examine how competitive strategies and strengths impact bamboo weaving MSMEs' operational and financial outcomes post-COVID-19. By establishing this connection, the research aims to highlight effective practices and techniques to help these enterprises survive and thrive in the new economic reality. This dual focus on competitiveness factors and their impact on performance ensures a holistic approach to understanding and enhancing the viability of bamboo weaving MSMEs in Bali.

The significance of this study lies in its potential to contribute meaningfully to the strategic development of MSMEs in Bali, particularly those involved in bamboo weaving. By systematically analyzing the factors that influence competitiveness and their subsequent impact on performance, this research provides valuable insights that can help MSMEs navigate the post-pandemic economic landscape. The findings can guide business owners in adopting best practices, optimizing resource allocation, and enhancing product quality and innovation. This, in turn, can improve their market positioning, ensure sustainability, and drive growth. The strategic recommendations derived from this study can empower MSMEs to not only recover from the setbacks of the COVID-19 pandemic but also build resilience against future economic disruptions. Moreover, the study's insights extend beyond individual businesses to inform policymakers and stakeholders involved in the economic development of Bali. For policymakers, understanding the critical factors that enhance MSME competitiveness can aid in formulating supportive policies and programs. This includes financial assistance, infrastructure development, technology adoption, and regulatory frameworks that create a conducive environment for MSMEs to thrive. Stakeholders, including investors, non-governmental organizations, and community leaders, can leverage these insights to provide targeted support and resources. By fostering a collaborative ecosystem, the study underscores the collective effort required to bolster the bamboo weaving sector and, by extension, the broader MSME landscape in Bali. Ultimately, the significance of this study is reflected in its ability to drive practical, impactful changes that benefit both the business community and the regional economy.

2. Literature Review

2.1. Overview of MSMEs

MSMEs are widely recognized as crucial components of developing economies. Various criteria, including the size of the workforce, annual revenue, and the total value of assets, define them. In many developing countries, MSMEs form the backbone of the economy, driving innovation, fostering entrepreneurship, and creating employment opportunities. MSMEs are characterized by their agility and ability to adapt quickly to market changes, which is essential for economic dynamism. They play a significant role in poverty alleviation by providing jobs and income to large

population segments, particularly in rural and underserved areas. Moreover, MSMEs contribute to economic diversification and resilience by engaging in various sectors such as manufacturing, agriculture, and services, thus reducing dependency on a few large industries. In addition to their economic roles, MSMEs promote social inclusion and regional development. They often employ marginalized groups, including women and young people, supporting broader social and financial goals. The development of MSMEs is typically supported by government policies and programs aimed at enhancing their capacity, access to finance, and market reach. Despite their importance, MSMEs in developing economies often need help with numerous challenges, including limited access to capital, inadequate infrastructure, and regulatory barriers. Addressing these challenges is crucial for harnessing the full potential of MSMEs and ensuring sustainable economic growth.

In Bali, MSMEs are particularly vital for the local economy. The island's economy relies heavily on tourism, and MSMEs contribute significantly by providing goods and services supporting this sector. According to the Bali Cooperative and MSMEs Agency, as of May 2022, there were 440,609 registered MSMEs in Bali, an increase from 412,265 units in 2021. This growth underscores the resilience and importance of MSMEs in sustaining the island's economic activity, especially in the face of external shocks such as the COVID-19 pandemic. MSMEs in Bali are diverse, encompassing various industries, including agriculture, handicrafts, food processing, and retail. This diversity is essential for economic stability, as it reduces dependency on a single sector and spreads economic risks more evenly. One of the standout features of MSMEs in Bali is their integration with the island's cultural heritage. Many MSMEs are involved in traditional crafts and artisanal products, such as bamboo weaving, which are economically and culturally valuable. These enterprises help preserve Balinese traditions and promote cultural tourism, which attracts visitors from around the world. The economic contribution of MSMEs in Bali extends beyond job creation and income generation. They also play a crucial role in community development by fostering local entrepreneurship and supporting the sustainable use of local resources. The Balinese government has implemented various initiatives to support MSMEs, including financial assistance programs, capacity-building workshops, and marketing support to help them compete in local and international markets.

2.2. Bamboo Weaving Industry

The bamboo weaving industry in Bali has a rich historical context and profound cultural importance. Bamboo weaving is a traditional craft that has been integral to Balinese culture for centuries. The bamboo weaving industry in Bali is deeply rooted in tradition and culture. The Tigawasa people have a long-standing tradition of bamboo weaving [10]. Bamboo is utilized in Bali for various purposes, such as ceremonies, culture, handicrafts, and light construction [11]. The weaving products in Bali showcase distinct techniques, shapes, patterns, and colors, reflecting the rich cultural heritage of the region [12]. Efforts have been made to sustainably design bamboo products, such as woven-bamboo packaging sustainably, by incorporating traditional weaving techniques [13]. Additionally, the utilization of bamboo resources in Bali has been linked to eco-tourism initiatives, emphasizing the importance of conservation and sustainable practices [11]. The bamboo weaving industry not only preserves cultural heritage but also contributes to the local economy by creating job opportunities [14]. Challenges have arisen in integrating design and technology into modern bamboo weaving practices. The lack of labor division between design and manufacturing has hindered innovation and research in the industry [15]. However, advancements such as virtual reality technology have been explored to enhance the sustainability and preservation of intangible cultural heritage related to bamboo weaving [16]. Moreover, cooperation among bamboo weavers, companies, and workshops is crucial for supporting the local bamboo industry and revitalizing the economy of communities engaged in bamboo weaving [17]. Training programs focusing on bamboo weaving not only emphasize product quality but also consumer orientation, highlighting the importance of market demand and consumer preferences [18].

The current state of the bamboo weaving industry in Bali is a mix of tradition and adaptation to modern challenges. While the craft remains deeply rooted in cultural practices, the industry faces several key challenges threatening its sustainability. One of the primary challenges is the decline in demand, exacerbated by the COVID-19 pandemic, which has significantly reduced the influx of tourists who are major buyers of these crafts. Competition from mass-produced, cheaper alternatives threatens the traditional bamboo weaving industry. These products, often imported, can undercut prices and reduce the market share for local artisans. Another significant challenge is the need for more skilled labor. As younger generations move towards more urbanized and technologically driven careers, fewer people are learning

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and continuing the traditional craft of bamboo weaving. This skills gap threatens the continuity of the craft and its transmission to future generations. Furthermore, the industry needs more access to capital and modern marketing channels, hindering bamboo weaving businesses' growth and expansion. Many MSMEs in this sector need more resources to invest in marketing, product innovation, and scaling their operations, making competing in a globalized market difficult. Despite these challenges, there are opportunities for revitalization and growth. Initiatives to promote sustainable practices, improve access to training and capital, and leverage digital marketing can help enhance the resilience of the bamboo weaving industry. By addressing these issues, the bamboo weaving MSMEs in Bali can sustain their cultural heritage while adapting to the demands of contemporary markets. The continued support from government and non-governmental organizations is crucial in providing the necessary resources and infrastructure to overcome these challenges and ensure the longevity of this vital cultural and economic sector.

2.3. Theoretical Frameworks

Competitiveness refers to the ability of a business or sector to achieve sustainable economic performance and maintain a favorable position in the market relative to its competitors. This concept encompasses various dimensions, including efficiency in resource utilization, innovation capacity, quality of products or services, and the ability to adapt to changing market conditions. In the context of MSMEs, especially those involved in traditional crafts such as bamboo weaving, competitiveness is crucial for survival and growth in local and international markets. Theoretical perspectives on competitiveness often highlight the role of strategic management practices, access to resources, technological advancements, and supportive regulatory environments in enhancing businesses' competitive edge. Scholars like Porter [19] have developed frameworks such as the Competitive Advantage of Nations, which outlines how factors like firm strategy, structure, rivalry, demand conditions, related and supporting industries, and government policies contribute to national and firm-level competitiveness. For MSMEs in Bali, these factors can significantly influence their ability to compete in a post-pandemic economy. Understanding these theoretical constructs helps identify specific areas where interventions can be made to improve the competitiveness of bamboo weaving MSMEs.

Organizational performance refers to how an organization achieves its predefined objectives and goals. It is a multidimensional concept that can be measured using various indicators such as financial performance (e.g., profitability, revenue growth), operational performance (e.g., efficiency, productivity), and market performance (e.g., market share, customer satisfaction). For MSMEs, especially those in the traditional crafts sector, measuring performance can provide insights into their operational effectiveness and market position. The Balanced Scorecard [20] is one of the widely used frameworks for assessing organizational performance, incorporating financial and non-financial metrics to provide a holistic view of the organization's health. In bamboo weaving MSMEs in Bali, performance measurement can include sales volume, customer feedback, production efficiency, and market expansion. These indicators reflect the current state of the business and help identify areas that need improvement. Effective performance measurement enables MSMEs to make informed strategic decisions, align their operations with market demands, and ensure long-term sustainability.

The relationship between competitiveness and organizational performance is well-documented in the literature. Competitiveness is often seen as a precursor to enhanced organizational performance, equipping businesses with the necessary tools and capabilities to outperform their rivals. The Resource-Based View (RBV) of the firm [21] posits that firms with valuable, rare, inimitable, and non-substitutable resources can achieve sustained competitive advantage, leading to superior performance. For MSMEs, factors such as innovation, product quality, efficient resource management, and strong market presence are critical components of competitiveness that drive performance outcomes. Empirical studies have shown that MSMEs that invest in improving their competitiveness tend to exhibit better performance metrics. For instance, adopting new technologies, enhancing product quality, and securing external support can significantly boost sales and market share. In the case of bamboo weaving MSMEs in Bali, enhancing competitiveness through strategic initiatives can improve performance, enabling these enterprises to recover from the pandemic's impact and achieve growth. This theoretical understanding underscores the importance of targeted interventions to strengthen MSMEs' competitive capabilities to drive sustainable performance.

2.4. Factors Influencing Competitiveness

2.4.1. Business Capabilities

Business capabilities refer to an organization's inherent skills, resources, and competencies, enabling it to perform activities effectively and efficiently. These capabilities are crucial in building a competitive edge as they determine the firm's ability to innovate, adapt, and respond to market changes. For MSMEs, particularly those in traditional crafts such as bamboo weaving, business capabilities encompass a range of factors, including management expertise, operational efficiency, and strategic planning. These elements collectively influence the firm's ability to produce high-quality products, manage costs, and deliver customer value. Previous studies have highlighted the significance of business capabilities in enhancing the competitiveness of MSMEs. For instance, a study [22] found that business capabilities such as innovation capability, networking capability, and production capability significantly impact the competitive advantage of MSMEs. In the context of bamboo weaving MSMEs in Bali, capabilities related to craftsmanship, design innovation, and efficient production processes are particularly important. These capabilities enable enterprises to differentiate their products in the market, meet customer expectations, and maintain a sustainable competitive position. Strengthening these business capabilities can play a pivotal role in improving these MSMEs' overall competitiveness and performance.

2.4.2. Product Quality

Product quality is a critical determinant of competitiveness, especially in markets where consumers are highly discerning and quality-sensitive. High product quality not only satisfies customer needs but also fosters customer loyalty, enhances brand reputation, and creates opportunities for premium pricing. For bamboo weaving MSMEs, product quality is reflected in the craftsmanship, durability, aesthetic appeal, and functionality of the woven products. Ensuring high product quality requires attention to detail in the production process, high-quality raw materials, and adherence to quality control standards. Case studies and examples from the bamboo weaving industry illustrate the importance of product quality in achieving competitive success. For instance, a study by [23] highlighted that superior product quality was a key factor in attracting and retaining customers in niche markets. Similarly, bamboo weaving MSMEs in Bali that consistently produce high-quality products are likelier to gain a loyal customer base and enjoy positive word-of-mouth marketing. These MSMEs can leverage their reputation for quality to expand their market reach and enhance their competitive position. Therefore, investing in processes and practices that ensure high product quality is essential for bamboo weaving enterprises' competitiveness and long-term success.

2.4.3. Infrastructure

Infrastructure plays a crucial role in supporting the operations and growth of MSMEs. It includes physical structures such as transportation networks, utilities, communication systems, and logistical facilities that enable businesses to function efficiently. For MSMEs, particularly those engaged in traditional crafts like bamboo weaving, adequate infrastructure is essential for the timely procurement of raw materials, efficient production processes, and effective distribution of finished products. Good infrastructure facilitates market access, reduces operational costs, and enhances productivity. However, bamboo weaving MSMEs in Bali face several infrastructure challenges that hinder their competitiveness. Limited access to reliable transportation can delay the delivery of raw materials and finished goods, impacting production schedules and customer satisfaction. Inadequate utility services, such as inconsistent electricity supply, can disrupt production processes and increase operational costs. Additionally, poor communication networks can limit market reach and hinder the adoption of digital marketing strategies. Addressing these infrastructure challenges is critical for improving the competitiveness of bamboo weaving MSMEs. Investments in transportation, utilities, and communication infrastructure can significantly enhance these enterprises' operational efficiency and market access, enabling them to compete more effectively in both local and international markets.

2.4.4. Technology

Technological advancements have a profound impact on the competitiveness of MSMEs. Technology can enhance productivity, improve product quality, streamline operations, and expand market reach. For bamboo weaving MSMEs, adopting modern technologies can lead to design, production, and marketing innovations, thereby enhancing their competitive edge. Technologies such as automated weaving machines, computer-aided design (CAD) software, and e-

commerce platforms can transform traditional production methods and open new avenues for business growth. However, the adoption of technology in bamboo weaving is often met with challenges such as limited financial resources, lack of technical expertise, and resistance to change. Despite these challenges, some bamboo weaving MSMEs in Bali have successfully integrated technology into their operations. For instance, CAD software allows for precise and intricate designs that cater to modern market demands, while e-commerce platforms enable these businesses to reach a global customer base. Empirical studies have shown that MSMEs that embrace technological innovations tend to perform better in productivity and market expansion. Therefore, encouraging and supporting technology adoption in bamboo weaving MSMEs is crucial for enhancing their competitiveness. This includes providing access to affordable technology solutions, training programs to build technical skills, and fostering a culture of innovation within these enterprises.

2.4.5. Resources

Resource availability and management are critical factors influencing the competitiveness of MSMEs. Resources encompass financial capital, human capital, raw materials, and technological assets. Effective resource management involves optimizing the use of these resources to achieve the highest possible efficiency and productivity. For bamboo weaving MSMEs, having access to high-quality bamboo, skilled labor, and sufficient financial resources is vital for producing superior products and maintaining steady operations. Resource constraints, however, pose significant challenges to competitiveness. More financial capital must allow MSMEs to invest in new technologies, marketing, and capacity building. Access to quality raw materials can help the consistency and quality of the final products. Moreover, more skilled labor can lead to inefficiencies and higher productivity. These constraints can hamper the ability of bamboo weaving MSMEs to scale their operations, innovate, and respond to market demands, ultimately impacting their competitive edge. Addressing these resource-related challenges is essential for enhancing the competitiveness and sustainability of these enterprises.

2.4.6. Government Policies

Government policies play a crucial role in supporting the growth and competitiveness of MSMEs. Policies can provide financial assistance, training programs, infrastructure development, and market access opportunities. In Indonesia, various government initiatives aim to bolster MSMEs, including grants, low-interest loans, and business development services. These policies create a favorable business environment, encouraging entrepreneurship and fostering competitive markets. Analyzing the effectiveness of these policies in Bali reveals mixed results. While some MSMEs benefit from government support, others find the processes to access these resources more convenient and bureaucratic. For bamboo weaving MSMEs, effective policies would include specific programs that address their unique challenges, such as providing access to high-quality bamboo, specialized training in bamboo weaving techniques, and marketing support to reach broader markets. Evaluating the impact of these policies helps in understanding their effectiveness and areas where improvements are needed to support the competitiveness of bamboo weaving MSMEs better.

2.4.7. External Support

External support from non-governmental organizations (NGOs), community organizations, and other stakeholders can significantly enhance the competitiveness of MSMEs. These entities often provide resources, training, and networking opportunities that complement government efforts. For bamboo weaving MSMEs, external support can include access to new markets, technical training, and financial assistance. Case studies of successful support initiatives illustrate the impact of such aid. For example, collaborations between NGOs and bamboo weaving cooperatives in Bali have led to new product lines and increased market access. Community organizations have also played a role in preserving traditional weaving techniques and promoting sustainable practices. These support systems help MSMEs overcome resource constraints, improve their skills and knowledge, and enhance their market presence. By leveraging external support, bamboo weaving MSMEs can strengthen their competitive position and achieve sustainable growth.

2.5. Impact of Competitiveness on MSME Performance

Numerous studies have established a strong link between competitiveness and organizational performance. Competitiveness, often defined by a firm's ability to maintain a favorable position in the market through superior productivity, innovation, and resource management, is a critical driver of performance outcomes. Porter [19] emphasized that competitive advantage, derived from cost leadership, differentiation, or focus strategies, directly

influences a firm's market performance. In the context of MSMEs, particularly in traditional industries like bamboo weaving, maintaining competitiveness is vital for achieving sustainable business success. Studies such as those by [21] have highlighted the RBV as a framework where unique resources and capabilities form the basis of competitive advantage, leading to enhanced performance. Empirical research, specifically focusing on MSMEs, further reinforces this relationship. For instance, a study by [22] demonstrated that business capabilities, including innovation and production efficiency, significantly impact the competitive positioning of MSMEs, which in turn positively affects their performance metrics, such as sales growth and market share. Similarly, research by [24] identified that strategic planning and market orientation are crucial components that link competitiveness with improved performance in small businesses. These studies underscore the importance of competitiveness as a foundational element driving MSME performance.

Measuring MSME performance involves various quantitative and qualitative metrics that reflect the enterprise's efficiency, effectiveness, and market position. Financial metrics are among the most common indicators, including revenue growth, profitability, return on assets (ROA), and return on equity (ROE). These metrics provide a clear picture of the financial health and sustainability of the business. Operational metrics such as production efficiency, inventory turnover, and cost management are also crucial for assessing the internal performance of MSMEs. Market performance metrics, including market share, customer satisfaction, and brand recognition, offer insights into the firm's competitive position and ability to attract and retain customers. Additionally, innovation-related metrics such as the number of new products developed, the speed of product development, and investment in research and development (R&D) reflect the enterprise's capacity for innovation and long-term growth. For bamboo weaving MSMEs, performance metrics could also include the quality and uniqueness of products, adherence to traditional craftsmanship standards, and the extent of market reach locally and internationally.

Several case studies and empirical examples illustrate how enhanced competitiveness leads to improved performance in MSMEs. One notable example is the adoption of technology and innovation in traditional craft industries. Bamboo weaving MSMEs integrating computer-aided design (CAD) software into their production processes have significantly improved product quality and design complexity, increasing market demand and higher sales. Additionally, MSMEs that have leveraged e-commerce platforms to reach broader markets have reported substantial growth in revenue and customer base. Another example is the impact of strategic partnerships and external support on MSME performance. Bamboo weaving enterprises that have formed alliances with NGOs and community organizations for training and capacity building have enhanced their production techniques and management practices. These improvements have resulted in higher productivity, better product quality, and expanded market access, ultimately improving financial and operational performance. These examples underscore the importance of competitiveness factors such as technology adoption, innovation, and strategic partnerships in driving the success and sustainability of MSMEs.

2.6. Hypotheses Development

Hypothesis 1: Business Capabilities Significantly Influence Competitiveness

Business capabilities encompass a range of competencies, including management skills, operational efficiency, and strategic planning. These capabilities enable MSMEs to optimize their operations, innovate, and adapt to market changes, enhancing their competitiveness. Studies such as those by [22] have demonstrated that robust business capabilities positively correlate with competitive advantage in MSMEs. The RBV theory supports this hypothesis, suggesting that unique and valuable capabilities are critical for sustaining competitiveness [21].

Hypothesis 2: Product Quality Significantly Influences Competitiveness

Product quality is a critical determinant of an enterprise's competitive edge. High-quality products meet customer expectations, foster loyalty, and enhance brand reputation. In bamboo weaving MSMEs, superior craftsmanship and durability are key product quality attributes. Research by [23] indicates that product quality significantly impacts consumer satisfaction and market positioning. This hypothesis is grounded in the understanding that consistently delivering high-quality products enables MSMEs to differentiate themselves in competitive markets.

Hypothesis 3: Infrastructure Significantly Influences Competitiveness

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Infrastructure, including transportation networks, utilities, and communication systems, plays a vital role in the operational efficiency and market access of MSMEs. Adequate infrastructure supports timely procurement of raw materials, efficient production, and effective distribution of products. Studies such as those by [25] have highlighted the positive impact of infrastructure on the competitiveness of small businesses. For bamboo weaving MSMEs, improved infrastructure can mitigate logistical challenges and enhance overall productivity.

Hypothesis 4: Technology Significantly Influences Competitiveness

Technology adoption is a major driver of innovation and efficiency in MSMEs. Technological advancements such as automated machinery, design software, and e-commerce platforms can transform traditional production processes and expand market reach. Research by [26] shows that technology adoption is positively associated with improved business performance and competitiveness. For bamboo weaving MSMEs, integrating modern technology can enhance product design, quality, and market access.

Hypothesis 5: Resources Significantly Influence Competitiveness

Access to and effective management of resources, including financial capital, human capital, and raw materials, are crucial for MSMEs' competitiveness. The availability of resources determines MSMEs' capacity to invest in innovation, maintain production quality, and scale operations. Studies by [27] underscore the importance of resources in achieving competitive advantage. For bamboo weaving MSMEs, securing high-quality bamboo and skilled labor is essential for maintaining their competitive position.

Hypothesis 6: Government Policies Significantly Influence Competitiveness

Supportive government policies can create an environment conducive to MSMEs' thriving. Policies that provide financial assistance, training programs, and infrastructure development can significantly enhance MSMEs' competitiveness. Research by [28] highlights the role of government interventions in supporting small business growth. In Bali, effective policies tailored to the needs of bamboo weaving MSMEs can address their specific challenges and promote sustainable development.

Hypothesis 7: External Support Significantly Influences Competitiveness

External support from NGOs, community organizations, and other stakeholders can enhance MSMEs' capabilities and market access. Such support often includes technical training, financial aid, and networking opportunities. Case studies by [29] have demonstrated the positive impact of external support on the competitiveness of small businesses. For bamboo weaving MSMEs, collaborations with external entities can provide the necessary resources and expertise to improve their competitive position.

Hypothesis 8: Competitiveness Significantly Influences MSME Performance

Competitiveness is a key determinant of organizational performance, influencing sales growth, market share, and profitability. The relationship between competitiveness and performance is well-documented, with studies by [19], [21] Illustrating that competitive firms tend to achieve superior performance outcomes. For bamboo weaving MSMEs, enhancing competitiveness through strategic initiatives can improve operational and financial performance, ensuring long-term sustainability and growth. The hypotheses formulated above are supported by extensive literature and empirical research. The theoretical frameworks and studies referenced provide a robust basis for understanding the relationship between competitiveness factors and MSME performance. By examining business capabilities, product quality, infrastructure, technology, resources, government policies, and external support, this study aims to comprehensively analyze the determinants of competitiveness in bamboo weaving MSMEs and their impact on performance. Each hypothesis is grounded in established theories and backed by relevant studies, ensuring a thorough and evidence-based approach to the research.

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3. Method

3.1. Research Design

The research design adopted for this study is a quantitative associative causal design. This design is appropriate for examining the relationships between multiple variables and determining the causal effects of one variable on another. In the context of this study, the aim is to analyze the factors influencing the competitiveness of bamboo weaving MSMEs in Bali and to assess the impact of these competitive factors on the performance of these MSMEs. A quantitative associative causal design involves collecting numerical data that can be quantified and subjected to statistical analysis to test the hypotheses. This approach identifies significant relationships and causal pathways between independent variables (business capabilities, product quality, infrastructure, technology, resources, government policies, and external support) and dependent variables (competitiveness and MSME performance). By employing this design, the study seeks to provide empirical evidence on how these factors interact and influence the competitiveness and performance of bamboo weaving MSMEs post-COVID-19. To better understand the demographic characteristics of the respondents, we collected data from 100 bamboo weaving MSMEs in Buleleng and Bangli. The demographic profile includes gender, age, and location, providing insights into the distribution of these variables among the respondents. The detailed demographic breakdown is presented in table 1.

Table 1. Profile of Respondents

Demographic Variable	Category	Frequency	Percentage
Gender	Male	47	47%
Gender	Female	53	53%
Age	30-40 years	25	25%
Age	41-50 years	45	45%
Age	Above 50 years	30	30%
Location	Buleleng	60	60%
Location	Bangli	40	40%

The questionnaire captured detailed information on business operations, product quality, infrastructure, technological adoption, resource availability, government policies, and external support. The responses were then analyzed using Partial Least Square (PLS) structural equation modeling, which is well-suited for examining complex relationships between multiple variables. This analytical method helps validate the proposed hypotheses and provides a robust framework for understanding the dynamics of competitiveness and performance in bamboo weaving MSMEs. The research model is depicted in figure 1, illustrating the hypothesized relationships between the variables.

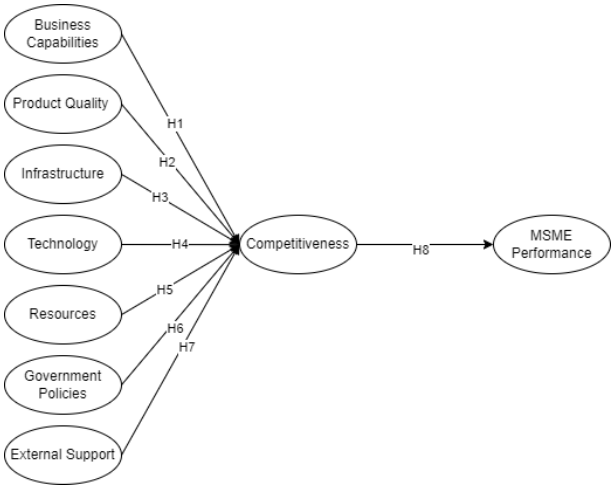

Figure 1. Research Model

The hypotheses described in this study aim to test the significant relationships between factors influencing competitiveness and the performance of bamboo weaving MSMEs in Bali. Specifically, the study hypothesizes that business capabilities (H1), product quality (H2), infrastructure (H3), technology (H4), resources (H5), government policies (H6), and external support (H7) significantly influence competitiveness. Furthermore, competitiveness (H8) is hypothesized to influence MSME performance significantly.

3.2. Variables

In this study, the variables are divided into independent and dependent variables to analyze the factors influencing the competitiveness of bamboo weaving MSMEs in Bali and their performance post-COVID-19. The independent variables include business capabilities, products, infrastructure, technology, resources, government policies, and external support. Business capabilities encompass management skills, strategic planning abilities, and operational efficiency, measuring how well businesses leverage their internal strengths. Products focus on the quality of bamboo weaving items, uniqueness, and market appeal, assessing MSMEs' ability to produce high-quality goods that meet consumer demands. Infrastructure refers to the availability and quality of physical and organizational structures such as transportation networks, utilities, and communication systems that support MSME operations. Technology evaluates the adoption and integration of modern technologies in production and marketing processes, including automated weaving machines, design software, and digital marketing platforms. Resources include financial capital, human resources, and raw materials, measuring their availability and management, which is crucial for the sustainability and growth of the MSMEs. Government policies assess the impact of initiatives, regulations, and support programs aimed at promoting and assisting MSMEs, examining the effectiveness of these policies in enhancing competitiveness. External support involves assistance from non-governmental organizations, community organizations, and other stakeholders, evaluating the role of external entities in providing resources, training, and market access opportunities.

The dependent variables are competitiveness and MSME performance. Competitiveness is measured by the MSMEs' ability to maintain a favorable market position, attract and retain customers, and sustain their business operations, including factors like market share, customer satisfaction, and innovation capabilities. MSME performance assesses the overall success and efficiency of MSMEs, using financial indicators like revenue growth and profitability, operational metrics such as productivity and cost management, and market performance indicators like market expansion and customer loyalty. By analyzing these variables, the study aims to provide a comprehensive understanding of the determinants of competitiveness and their impact on the performance of bamboo weaving MSMEs in Bali, identifying key areas for improvement and strategic interventions to enhance the sustainability and growth of these enterprises in the post-pandemic era.

3.3. Sample and Data Collection

The sample for this study comprises 100 bamboo weaving MSMEs located in the regions of Buleleng and Bangli in Bali. These two regions are known for their rich tradition in bamboo weaving, making them ideal for studying the competitiveness and performance of MSMEs in this sector. The selection of 100 MSMEs ensures a representative sample size sufficient for statistical analysis, providing a comprehensive view of the industry’s current state and the factors affecting its competitiveness and performance. Data collection was conducted through structured surveys administered to the owners or managers of the selected MSMEs. The survey instrument was designed to gather detailed information on various aspects of the businesses, including their capabilities, product quality, infrastructure, technology usage, resource availability, government policy impacts, and external support. Questions were formulated to capture quantitative data, such as financial performance and production capacity, and qualitative insights, such as perceptions of market challenges and strategic priorities. The surveys were distributed and collected over a specified period, ensuring that responses reflected the most recent operational and market conditions. The collected data were then systematically coded and entered into a database for analysis. This methodical approach to data collection ensures the reliability and validity of the data, providing a solid foundation for the subsequent analysis using Partial Least Squares (PLS) structural equation modeling. This approach allows for a robust examination of the relationships between the independent and dependent variables, ultimately leading to actionable insights for enhancing the competitiveness and performance of bamboo weaving MSMEs in Bali.

3.4. Data Analysis

The data collected from the surveys were analyzed using the PLS method, a robust statistical technique suitable for complex models with multiple variables. PLS is particularly effective for small to medium sample sizes and does not require the data to follow a normal distribution. It is ideal for this study on bamboo weaving MSMEs in Bali. This method enables the assessment of both the measurement model, which examines the reliability and validity of the constructs, and the structural model, which evaluates the relationships between the variables. The reliability of the measurement model was assessed through the outer loadings of the indicators. Outer loading values indicate how well each indicator correlates with its respective construct. Indicators with higher outer loading values demonstrate stronger relationships with their constructs, indicating better reliability. The outer loading values for each indicator are presented in table 2.

Table 2. Outer Loading Values

Variable	Indicator	Outer Loading
Business Capabilities	X1.1	0.833
	X1.2	0.746
	X1.3	0.723
	X1.4	0.76
	X1.5	0.745
	X1.6	0.774
Product Quality	X2.1	0.812
	X2.2	0.786
	X2.3	0.751
Infrastructure	X3.1	0.701
	X3.2	0.799
	X3.3	0.834
	X3.4	0.732
Technology	X4.1	0.726
	X4.2	0.822
	X4.3	0.792
	X4.4	0.719
Resources	X5.1	0.764
	X5.2	0.707
	X5.3	0.727
	X5.4	0.66
	X5.5	0.548
Government Policies	X6.1	0.623
	X6.2	0.626
	X6.3	0.887
External Support	X7.1	0.8
	X7.2	0.888

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Variable	Indicator	Outer Loading
Competitiveness	Y1.1	0.637
	Y1.2	0.691
	Y1.3	0.753
	Y1.4	0.561
	Y1.5	0.764
MSME Performance	Y2.1	0.641
	Y2.2	0.586
	Y2.3	0.527
	Y2.4	0.857

The analysis began with the evaluation of the measurement model to ensure the validity and reliability of the constructs. Validity tests included convergent validity, assessed through factor loadings, Average Variance Extracted (AVE), and discriminant validity, evaluated using the Fornell-Larcker criterion. Discriminant validity tests whether constructs that should have no relationship do, in fact, not correlate too highly. The criterion compares the square root of the AVE values with the correlations between constructs. The results, shown in table 3, confirm the discriminant validity of the constructs.

Table 3. Fornell-Larcker Criterion

	X1	X2	X3	X4	X5	X6	X7	Y1	Y2
X1	0.76								
X2	0.07	0.78							
X3	0.35	-0.08	0.77						
X4	-0.01	0.02	0.07	0.77					
X5	0.17	0.07	0.15	0.15	0.69				
X6	-0.17	-0.02	-0.23	0.09	-0.19	0.72			
X7	0.03	-0.09	0.27	0.15	0.26	-0.08	0.85		
Y1	0.29	0.27	0.32	0.31	0.34	-0.13	0.3	0.69	
Y2	0.04	0.25	0.24	0.04	0.16	-0.09	0.18	0.18	0.67

Indicators with factor loadings above 0.5 were considered valid, while AVE values above 0.5 indicated that the construct explains more than half of the variance of its indicators. Discriminant validity was confirmed if the square root of the AVE for each construct was greater than the correlations with other constructs. Composite reliability and AVE values were calculated to ensure the constructs' reliability and validity. Composite reliability assesses the internal consistency of the constructs, while AVE measures the amount of variance captured by the construct's indicators relative to the amount due to measurement error. Table 4 presents the composite reliability and AVE values for each construct. Reliability was measured using composite reliability (CR) and Cronbach's alpha, with values above 0.7 indicating good internal consistency. Composite reliability and AVE values were calculated to ensure the constructs' reliability and validity. Composite reliability assesses the internal consistency of the constructs, while AVE measures the amount of variance captured by the construct's indicators relative to the amount due to measurement error. Table 4 presents the composite reliability and AVE values for each construct.

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Table 4. Composite Reliability and AVE

Variable	Composite Reliability	AVE
Business Capabilities	0.894	0.69
Product Quality	0.826	0.78
Infrastructure	0.852	0.77
Technology	0.850	0.77
Resources	0.814	0.69
Government Policies	0.761	0.72
External Support	0.833	0.85
Competitiveness	0.814	0.69
MSME Performance	0.753	0.67

Following the validation of the measurement model, the structural model was evaluated to test the hypothesized relationships between the independent and dependent variables. The structural model assessment involved examining path coefficients, R-squared values, and the significance of the paths through bootstrapping techniques. Path coefficients indicate the strength and direction of the relationships between variables, while R-squared values show the proportion of variance in the dependent variable explained by the independent variables. A high R-squared value signifies a strong explanatory power of the model. Additionally, the significance of the paths was determined using t-statistics and p-values, with a p-value less than 0.05 indicating a statistically significant relationship. This comprehensive approach to data analysis ensures that the findings are both statistically sound and meaningful, providing valuable insights into the factors influencing the competitiveness and performance of bamboo weaving MSMEs in Bali. By rigorously testing the measurement and structural models, the study aims to produce reliable results that can inform strategies for enhancing the sustainability and growth of these enterprises in the post-pandemic era.

4. Result and Discussion

4.1. Demographic Data of Respondents

The demographic data of the respondents in this study provide a comprehensive overview of the characteristics of the bamboo weaving MSME owners in Buleleng and Bangli, Bali. A total of 100 respondents participated in the survey, and their demographic profiles are detailed below. The survey results indicated that a majority of the respondents were female, accounting for 53% of the sample, while 47% were male. This gender distribution highlights the significant involvement of women in the bamboo weaving industry, which can be attributed to the meticulous and detailed nature of the weaving process that aligns well with the skills traditionally associated with women in these communities. The age distribution of the respondents showed a concentration in the middle age groups. Specifically, 25% of the respondents were aged between 30 and 40, 45% were between 41 and 50, and 30% were over 50. This indicates that a substantial portion of the bamboo weaving MSME owners are in their most productive years, with significant experience and maturity in managing their businesses. The dominance of the 41-50 age group suggests that this is a crucial period for business leadership in this sector, where the blend of youthful energy and accumulated experience can drive innovation and sustainability.

In terms of geographical distribution, 60% of the respondents were based in Kabupaten Buleleng, and 40% were from Kabupaten Bangli. The higher concentration of respondents in Buleleng can be attributed to the region's historical and cultural ties to bamboo weaving. Buleleng is known for its long-standing tradition in bamboo crafts, which have been passed down through generations and have now become an integral part of the local economy. The presence of these businesses in Bangli also underscores the widespread nature of bamboo weaving across different regions in Bali. The demographic analysis of the respondents underscores the pivotal role of both gender and age in the bamboo weaving

industry in Bali. It highlights the significant participation of women and the central role of middle-aged business owners in sustaining and growing these traditional crafts. Understanding these demographics is crucial for tailoring support and development programs that can enhance the competitiveness and performance of bamboo weaving MSMEs in these regions.

4.2. Validity and Reliability of Measurement Models

Ensuring the validity and reliability of the measurement models is crucial for the accuracy and robustness of the study's findings. Validity refers to the extent to which the instruments measure what they are intended to measure, while reliability assesses the consistency of the measurement. In this study, both convergent and discriminant validity were tested to ensure the accuracy of the constructs. Convergent validity was assessed using factor loadings, AVE, and CR. For a construct to have good convergent validity, the factor loadings should be above 0.5, the AVE should exceed 0.5, and the CR should be higher than 0.7. The results indicated that all the constructs met these criteria. The factor loadings for the indicators of business capabilities, products, infrastructure, technology, resources, government policies, external support, competitiveness, and MSME performance were all above 0.5, indicating that the items were well-correlated with their respective constructs. The AVE values ranged from 0.69 to 0.85, demonstrating that more than half of the variance of the indicators was explained by their latent constructs. The CR values for all constructs were above 0.7, ensuring the reliability of the measurement model.

Discriminant validity was tested using the Fornell-Larcker criterion, which compares the square root of the AVE values with the correlations between constructs. A construct is considered to have good discriminant validity if the square root of its AVE is greater than the correlations with other constructs. The results showed that the square root of the AVE for each construct was higher than the corresponding inter-construct correlations, confirming that each construct was distinct from the others. This indicates that the measurement model not only accurately captures the intended constructs but also distinguishes between different constructs effectively. The combination of these tests confirms that the measurement model used in this study is both valid and reliable. The high factor loadings, AVE, and CR values ensure that the constructs are accurately measured, while the Fornell-Larcker criterion supports the distinctiveness of the constructs. This robust measurement model lays a solid foundation for further analysis and interpretation of the relationships between competitiveness factors and MSME performance in the bamboo weaving industry in Bali. These findings ensure that the conclusions drawn from this study are based on sound and reliable data, providing valuable insights for enhancing the competitiveness and performance of bamboo weaving MSMEs.

4.3. Structural Model Evaluation

The structural model evaluation focuses on determining the significant factors that influence the competitiveness of bamboo weaving MSMEs in Bali. The analysis used path coefficients, t-statistics, and p-values to identify the relationships between the variables. The results reveal that product quality, infrastructure, technology, resources, and external support significantly influence the competitiveness of bamboo weaving MSMEs. The structural model evaluation revealed several significant factors influencing the competitiveness of bamboo weaving MSMEs. The path coefficients, t-statistics, and p-values for each hypothesized relationship are summarized in table 5, indicating the significance of each path in the model.

Table 5. Path Coefficients, t-Statistics, and P-Values

Path	Path Coefficient	t-Statistics	P Values	Significance
Business Capabilities (X1) → Competitiveness (Y1)	0.169	1.856	0.066	Not Significant
Product Quality (X2) → Competitiveness (Y1)	0.275	3.048	0.003	Significant
Infrastructure (X3) → Competitiveness (Y1)	0.187	2.176	0.032	Significant
Technology (X4→ Competitiveness (Y1)	0.239	3.231	0.002	Significant
Resources (X5) →Competitiveness (Y1)	0.179	2.048	0.043	Significant

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Government Policies (X6) → Competitiveness (Y1)	-0.031	0.283	0.778	Not Significant
External Support (X7) → Competitiveness (Y1)	0.185	2.387	0.019	Significant
Competitiveness (Y1) → MSME Performance (Y2)	0.182	1.269	0.207	Not Significant

Specifically, product quality exhibits a path coefficient of 0.275 with a t-statistic of 3.048 and a p-value of 0.003, indicating a significant positive relationship. This suggests that improvements in product quality enhance the competitiveness of MSMEs by attracting customers, fostering loyalty, and improving market reputation. Infrastructure also plays a crucial role, with a path coefficient of 0.187, a t-statistic of 2.176, and a p-value of 0.032. This significant positive relationship implies that better infrastructure supports efficient operations and market access, thereby enhancing competitiveness. Similarly, technology adoption is vital for competitiveness, as indicated by a path coefficient of 0.239, a t-statistic of 3.231, and a p-value of 0.002. The integration of modern technologies in production and marketing processes boosts the competitiveness of MSMEs. Resources, encompassing financial capital and raw materials, show a path coefficient of 0.179 with a t-statistic of 2.048 and a p-value of 0.043. This significant positive relationship highlights the importance of resource availability and effective management in maintaining competitiveness. Lastly, external support from NGOs and community organizations is crucial, with a path coefficient of 0.185, a t-statistic of 2.387, and a p-value of 0.019. This relationship underscores the value of external support in providing additional resources and training, which enhance the competitiveness of MSMEs.

Some factors were found to be insignificant in influencing the competitiveness of bamboo weaving MSMEs. Business capabilities, with a path coefficient of 0.169, a t-statistic of 1.856, and a p-value of 0.066, indicate an insignificant relationship. Although management skills and operational efficiency are important, they do not significantly impact competitiveness in this context. Similarly, government policies exhibit a path coefficient of -0.031, a t-statistic of 0.283, and a p-value of 0.778, also indicating an insignificant relationship. This suggests that current government policies may not effectively enhance the competitiveness of MSMEs. Furthermore, the path coefficient for competitiveness (Y1) to MSME performance (Y2) is 0.182 with a t-statistic of 1.269 and a p-value of 0.207, indicating that competitiveness does not significantly influence MSME performance in this study. This implies that factors other than competitiveness might play a more critical role in determining the overall performance of bamboo weaving MSMEs in Bali. These findings provide a detailed understanding of the factors that significantly and insignificantly influence the competitiveness of bamboo weaving MSMEs, highlighting areas where strategic interventions can be most effective. The results of hypothesis testing are summarized in table 6. This table indicates which hypotheses were supported and which were not, based on the significance of the relationships between the variables.

Table 6. Hypothesis Testing Results

Hypothesis	Relationship	Result
H1	Business Capabilities → Competitiveness	Not Supported
H2	Product Quality → Competitiveness	Supported
H3	Infrastructure → Competitiveness	Supported
H4	Technology → Competitiveness	Supported
H5	Resources →Competitiveness	Supported
H6	Government Policies → Competitiveness	Not Supported
H7	External Support → Competitiveness	Supported
H8	Competitiveness → MSME Performance	Not Supported

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4.4. Impact of Competitiveness on Performance

The analysis of the relationship between competitiveness and MSME performance revealed that competitiveness, as measured by the combined effect of product quality, infrastructure, technology, resources, and external support, does not significantly influence the performance of bamboo weaving MSMEs in Bali. The path coefficient from competitiveness (Y1) to MSME performance (Y2) was found to be 0.182 with a t-statistic of 1.269 and a p-value of 0.207. This indicates that the hypothesized positive impact of competitiveness on performance is not statistically significant within the context of this study. This finding suggests that while competitiveness is an essential factor for operational efficiency and market presence, other variables may play a more critical role in determining the overall performance of these MSMEs. Factors such as market conditions, customer preferences, economic policies, and internal business processes could directly and significantly impact performance outcomes. The lack of a significant relationship also implies that merely improving competitiveness through the identified factors may not be sufficient to enhance performance without addressing these additional variables.

The results indicate a complex interplay between competitiveness and performance, where other contextual and external factors may overshadow the direct influence of competitiveness. This highlights the need for a more holistic approach to improving MSME performance, one that goes beyond enhancing competitiveness. For instance, MSMEs may need to strengthen their internal processes, improve customer relationship management, and adapt to market changes more effectively. The insignificant relationship between competitiveness and performance also underscores the importance of policy interventions that address broader issues affecting MSMEs. Policymakers should consider providing more targeted support beyond infrastructure and technology improvements, such as facilitating access to new markets, offering financial incentives, and creating a more conducive regulatory environment. Additionally, support programs should be designed to help MSMEs navigate economic uncertainties and changing consumer behaviors, which are critical for sustaining performance.

5. Conclusion

This study aimed to analyze the factors influencing the competitiveness of bamboo weaving MSMEs in Bali and assess the impact of competitiveness on their performance. The key findings identified product quality, infrastructure, technology, resources, and external support as significant factors enhancing competitiveness. Each of these factors demonstrated a positive and significant relationship with the competitiveness of MSMEs, highlighting their critical role in sustaining and improving market position. Conversely, business capabilities and government policies did not influence competitiveness. The study also examined the relationship between competitiveness and MSME performance. The results indicated that competitiveness, while crucial for operational efficiency and market presence, did not significantly influence performance outcomes in this study. This suggests that other variables, including market conditions and internal business processes, play a more direct role in determining overall performance. Based on the findings, several practical recommendations can be made for MSMEs to enhance their competitiveness. First, improving product quality is essential, as high-quality products are more likely to attract and retain customers. Investing in better infrastructure and adopting modern technologies can also significantly boost competitiveness by streamlining operations and expanding market reach. Effective resource management, including securing financial and human resources, is critical for maintaining consistent production quality and capacity. External support from NGOs and community organizations should be leveraged to provide additional resources and training. These support mechanisms can help MSMEs overcome resource constraints and enhance their competitive edge. Additionally, stronger government support is needed to create a more conducive business environment. Policies should be more effectively implemented and tailored to address the specific challenges bamboo weaving MSMEs face.

This study has several limitations that should be acknowledged. The sample size was limited to 100 MSMEs in Buleleng and Bangli, which may only partially represent part of the population of bamboo weaving businesses in Bali. Additionally, the study relied on self-reported data from survey respondents, which may introduce biases or inaccuracies. The study's cross-sectional nature also limits the ability to infer causality between the variables. Future research should consider a larger and more diverse sample to enhance the generalizability of the findings. Longitudinal studies could provide deeper insights into the causal relationships between competitiveness and performance over time. Further investigation into other potential factors influencing MSME performance, such as market conditions, customer

behaviors, and internal management practices, is also recommended. Exploring the role of digital transformation and innovation in enhancing the competitiveness of traditional craft MSMEs could offer valuable insights for policy and practice. By addressing these limitations and expanding the scope of research, future studies can build on the findings of this study to develop more comprehensive strategies for supporting the growth and sustainability of bamboo weaving MSMEs in Bali.

6. Declarations

6.1. Author Contributions

Conceptualization: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Methodology: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Software: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Validation: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Formal Analysis: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Investigation: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Resources: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Data Curation: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Writing Original Draft Preparation: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Writing Review and Editing: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; Visualization: I.M.K., I.M.S., I.M.A.S., Y.A., I.D.G.P.S., I.W.M.; All authors have read and agreed to the published version of the manuscript.

6.2. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6.3. Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

6.4. Institutional Review Board Statement

Not applicable.

6.5. Informed Consent Statement

Not applicable.

6.6. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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