

# DIGITAL LITERACY, ISLAMIC VALUE CO-CREATION AND INNOVATION CAPABILITY: IN IMPROVING THE SUSTAINABILITY OF MSME'S PERFORMANCE IN THE DIGITAL ERA

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**Abstract:** Penelitian ini bertujuan menganalisis pengaruh literasi digital, penciptaan bersama nilai-nilai Islam (Islamic Value Co-Creation), kapabilitas inovasi, dan keberlanjutan terhadap kinerja UMKM di Kabupaten Grobogan. Menggunakan pendekatan kuantitatif dengan metode Partial Least Squares Structural Equation Modeling (PLS-SEM), penelitian ini melibatkan 95 responden dari total populasi 125 pelaku UMKM yang dihitung menggunakan rumus Slovin. Hasil penelitian menunjukkan bahwa literasi digital berpengaruh positif signifikan terhadap keberlanjutan kinerja UMKM, namun tidak signifikan terhadap kapabilitas inovasi. Sebaliknya, Islamic Value Co-Creation berpengaruh positif signifikan terhadap kapabilitas inovasi dan keberlanjutan kinerja UMKM. Kapabilitas inovasi juga terbukti memediasi secara signifikan hubungan antara Islamic Value Co-Creation dan keberlanjutan kinerja UMKM. Temuan ini memberikan implikasi praktis bagi pelaku UMKM dan pembuat kebijakan untuk mengintegrasikan nilai-nilai Islam dalam proses bisnis serta meningkatkan literasi digital guna mendorong inovasi berkelanjutan. Penelitian ini menekankan pentingnya pendekatan holistik berbasis nilai religius dalam pengelolaan UMKM guna menciptakan keunggulan kompetitif yang berkelanjutan di tengah dinamika ekonomi yang terus berubah.

**Keywords :** Digital Literacy, Islamic Value Co-Creation, Innovation Capability, Sustainability of MSME's Performance

**Abstract:** This study aims to analyze the impact of digital literacy, the co-creation of Islamic values, innovation capabilities, and sustainability on the performance of MSMEs. This study uses a quantitative approach with the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. The study population consists of 125 SME operators in Grobogan District, with a sample size of 95 respondents calculated using the Slovin formula. The analysis results indicate that Digital Literacy has a significant positive influence on the Sustainability of SME Performance, but not on Innovation Capability. Islamic Value Co-Creation demonstrates a significant positive influence on both Innovation Capability and the Sustainability of SME Performance. Innovation Capability was found to act as a significant mediator in strengthening the relationship between Islamic Value Co-Creation and the Sustainability of MSME Performance. On the other hand, this study provides practical implications for policymakers and MSME actors to integrate Islamic values into business operations, as well as to enhance digital access and training to create more sustainable innovations. This study also emphasizes the importance of a holistic understanding in managing religious-based MSMEs to create long-term competitive advantages.

**Keywords:** Digital Literacy, Islamic Value Co-Creation, Innovation Capability, Sustainability of MSME's Performance

## INTRODUCTION

The current age of disruption has generated both possibilities and problems for business professionals. An organization's capacity to recognizing, understand, and adeptly handle technical and knowledge advancements is pivotal in influencing the efficiency and responsiveness of its operations in a dynamic environment. In the absence of innovative and contemporary ideas, organizations risk being overwhelmed by rapid changes. Competitive advantage is increasingly derived not from traditional production factors, such as tangible assets, but from the utilization of knowledge, innovation, and technology—collectively referred to as intangible assets—as the primary resources (Chang & Hsieh, 2011). The Covid-19 pandemic has prompted business leaders to rapidly adjust to evolving consumer behavior. This situation has necessitated a shift from traditional business practices to digital approaches in response to increasingly complex market dynamics and the accelerating pace of digital transformation (Kusumawati, 2022; Rahayu et al., 2024).

**Table 1:** Development of MSMEs in Indonesia

Year	Number of MSMEs (Millions)	MSME contribution to GDP (%)	Labor Absorbed (Millions)
2018	64.2	60.3	116.3
2019	65.4	61.2	118.5
2020	65.9	61.9	120.1
2021	66.3	62.3	121.5
2022	67.1	63.5	123.0

Source: Badan Pusat Statistik, 2024.

Table 1 illustrates the increase in the quantity of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia during a five-year span, from 2018 to 2022. The data reveals a consistent upward trend in the number of MSMEs, which have significantly contributed to the country's Gross Domestic Product (GDP), rising from 60.3% in 2018 to 63.5% in 2022. Furthermore, MSMEs serve as a significant source of employment, with the workforce expanding from 116.3 million individuals in 2018 to 123 million in 2022. This underscores the critical role of MSMEs in bolstering the Indonesian economy and their vital function in job creation across various sectors.

**Table 2:** Digital Literacy Levels in Indonesia

Year	Percentage of Internet Users (%)	Percentage of Social Media Users (%)	Percentage of MSME Entrepreneurs Using Digital Technology (%)
2020	75.0	64.5	45.0
2021	78.0	68.0	50.0
2022	80.0	70.0	53.0

Source: Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), 2022.

Table 2 presents an overview of digital literacy in Indonesia, highlighting the proportions of internet users, social media participants, and MSME entrepreneurs engaging with digital technologies. The data indicates a notable rise in both internet and social media engagement among the Indonesian population, achieving 80% and 70% respectively by the year 2022. Furthermore, the adoption of digital technology among MSME entrepreneurs has also seen a significant uptick, with over 50% beginning to integrate technology into their business practices. This trend underscores the growing significance of digitalization for the sustainability of MSMEs in Indonesia, despite the ongoing challenges that persist.

The Micro, Small and Medium Enterprises (MSME) sector has experienced one of the most substantial adverse effects from the Covid-19 pandemic, indicating its high vulnerability to global crises such as pandemics. According to a survey conducted by the Asian Development Bank in 2020, nearly 49% of MSMEs in Indonesia have temporarily ceased operations. Among those that continue to operate, a substantial majority have reported a decline in sales exceeding 30%. Additionally, over half of the owners of Micro and Small Enterprises have been compelled to temporarily suspend their employees, while Medium Enterprises have opted to reduce working hours instead. Furthermore, employees within the MSME sector have faced delays in receiving their salaries (Putra et al., 2025). The government's implementation of physical restrictions aimed at curbing the spread of the Covid-19 virus has adversely affected various economic activities, with the exception of those businesses that have successfully adapted to and transitioned to digital platforms.

According to Maedche (2016), the primary challenge encountered by business actors in the digital era lies not solely in their ability to keep up with technological developments, innovations, or evolving consumer behavior. Rather, the more critical concern involves how organizations strategically and sustainably respond to these dynamics in order to maintain their competitive advantage. Instead, it lies in their ability to transform organizational culture, mindset, and competencies to align with digital methodologies. In the context of digital technology, data emerges as a crucial asset. Currently, data serves as the cornerstone for organizations seeking to generate value. A company's proficiency in gathering, analyzing, and leveraging data will significantly influence its negotiating power with stakeholders. Enhancing digital maturity is essential for fostering digital innovation, constitutes a fundamental element in enhancing an organization's digital competencies (Prakasa et al., 2020). Digital competence is a crucial element for business owners seeking to foster innovation within digital frameworks. Khin & Ho (2019) emphasized that digital competence plays a significant role in enabling digital innovation and improving organizational performance, thereby supporting business sustainability. Similarly, Ullah et al., (2021) affirmed that IT capability substantially affects business continuity. The strength of a firm's digital competence is a fundamental determinant of its innovative capacity. Digital competence extends beyond technical expertise, involving the effective use of devices, software applications, and online platforms. It is closely associated with information and communication technology (ICT) communication skills, information literacy, domain-specific knowledge, and awareness of legal, ethical, and privacy issues.

Furthermore, it includes understanding the security aspects, social implications of ICT, and maintaining a balanced perspective on technology (Janssen et al., 2013). The success of digital capabilities hinges on two essential factors: firstly, the presence of robust information management

capabilities, and secondly, the adaptability of the Information Technology infrastructure (Levallet & Chan, 2018). Although studies specifically examining the relationship between digital capabilities and digital innovation remain limited, prior research by Zawislak (2013) and Zhou & Wu (2010) has provided compelling evidence regarding the positive influence of technological capabilities on innovation. Within digital environments, digital capabilities serve a crucial function in driving digital innovation. An organization's effectiveness in managing digital technologies significantly contributes to the development of digital products and services, highlighting the essential role of such capabilities.

Research examining the relationship between digital capabilities and digital innovation within the micro, small, and medium enterprises (MSME) sector remains limited. This study employs the theory of planned behavior as a foundational framework for understanding digital innovation. It aims to identify behavioral changes among small business owners that facilitate the development of digital-based innovations. The advent of the digital age presents both opportunities and challenges for Indonesia. According to a report by (Kemp, 2020), Indonesians demonstrate a significant adaptability to digital technologies, particularly in the use of mobile phones (66.6%), the internet (59.5%), and social media (53.6%). Furthermore, the Covid-19 pandemic has accelerated a shift in consumer behavior from traditional to digital platforms. This transition indicates substantial market opportunities for business owners to leverage digital platforms in their operations. However, the IMD World Digital Competitiveness Ranking (2020) reveals that Indonesia ranks 56th out of 63 countries in terms of digital competitiveness. Within the ASEAN region, Indonesia significantly trails behind Singapore (2nd), Malaysia (26th), and Thailand (39th). Digital competitiveness is assessed based on factors such as knowledge, technology, and readiness for the future. While Indonesia is witnessing improvements in its readiness for digital transformation, this progress is not matched by advancements in knowledge and technology necessary to support the swift digital transformation of its society. Consequently, digital capabilities and innovation are critical components of the contemporary digital economy. This research seeks to investigate the digital capacities of small business owners and their role in enhancing digital innovation, which in turn affects business sustainability and resilience amid technological disruption. The study will focus on prominent creative small business owners in the Grobogan district, specifically within the fashion and culinary industries.

## **LITERATURE REVIEW**

### **a. Digital Literacy**

In the transition from the fourth to the fifth industrial revolution, the integration of digital technology has become indispensable across all facets of life. The implementation of sophisticated digital solutions is now a prerequisite for effective operation in various sectors. Historically, the implementation of digital technology was initially more prevalent among large-scale enterprises, whereas small and medium-sized organizations exhibited relatively lower levels of adoption, with small and medium-sized enterprises (SMEs) rarely utilizing such advancements, often relying instead on manual or analog systems. In the contemporary business landscape, a comprehensive understanding of digital technology and its multifaceted applications is essential for success, applicable to both large enterprises and SMEs alike.

Digital literacy is a program that the Ministry of National Education prioritizes within

educational institutions, particularly due to the increasing significance of digital technology in the educational landscape, especially for those engaged in online learning. The incorporation of digital literacy enhances the effectiveness of interaction and communication throughout the learning process. Proficient digital literacy fosters the development of skills necessary for utilizing digital technologies. Bawden (2001) posits that strong digital literacy empowers individuals to discern information and utilize technology judiciously, thereby facilitating community engagement. Furthermore, Lankshear & Knobel (2008) and Rahmana (2021) argue that digital literacy, which encompasses elements of computer and information literacy, enhancing digital literacy is believed to improve the performance of small and medium enterprises (SMEs) by expanding their customer reach. However, a study by Ranatunga & Priyanath (2020) found that digital literacy does not have a significant impact on the performance of small businesses in Sri Lanka.

Digital literacy encompasses five distinct competencies as outlined by Hobbs (2011): 1) The capability to utilize texts, tools, and technology for the purpose of accessing information and entertainment; 2) The skill of critical thinking, which includes the analysis and evaluation of data; 3) The competence to engage in creative practices through composition; 4) The ability to engage in reflective and ethical thinking; and 5) The active participation in social action, whether individually or in collaboration with diverse groups.

## **b. Innovation Capability**

Globally, innovation is the cornerstone of prosperous economies. It is commonly acknowledged as a key force behind economic expansion, helping to create jobs, reduce poverty, and boost GDP growth in both developed and developing nations. Innovation competency, according to (Kafetzopoulos & Psomas, 2015), is the capacity to consistently transform knowledge and concepts into new systems, procedures, and products that benefit the company and its stakeholders. This competency includes both the integration of existing business models and the efficient handling of new business possibilities (Lawson & Samson, 2001). Romijn & Albaladejo (2002) go on to explain that innovation capability entails having the abilities and know-how to successfully interact with, direct, and improve current technologies while creating new relationships. Similarly, the ability to create, design, and implement novel methods for production design and simulation can be defined as innovative capabilities (Xu et al., 2008). The idea of innovation-based capabilities is presented by Ngo & O'Cass (2009) as a holistic procedure that makes use of a company's combined resources, expertise, and knowledge to pursue both technical and non-technical innovation projects. Numerous empirical studies have confirmed the link between innovation and improved corporate performance. According to recent academic research, innovation and outstanding performance in the industrial sector are strongly correlated (Cheng et al., 2010; Löf & Heshmati, 2002). The ability of SMEs to innovate is a crucial component that enables them to achieve notable competitiveness in both domestic and international markets (Çakar & Ertürk, 2010).

Digital innovation is framed within the scope of transformative digital solutions that enhance organizations, products, services, and various business operations. Consequently, digital innovation can be defined as the creation of new products, services, or solutions through the application of digital technologies (Khin & Ho, 2019). This definition underscores the



importance of novelty, highlighting the generation of new offerings and solutions derived from the utilization of digital technology. In this context, innovation refers specifically to digital innovation that is facilitated by digital technology throughout the process. Regarding small enterprises, Baker Mark (2014) noted that the digital technologies employed by small and medium-sized enterprises predominantly involve internet usage (IoT/Internet of Things) and software applications (including those aimed at enhancing internet security) to boost operational efficiency. According to the Oslo Manual (OECD, 2005), innovation capability is measured by four key indicators: product, process, marketing, and organizational innovation.

### **c. Islamic Value Co-Creation**

The Theory of Value (TOV) provides the conceptual foundation for Service Dominant Logic (SDL), which in turn underpins the development of Value CoCreation (VCC) as a central construct in understanding value formation. TOV encompasses both philosophical and ethical dimensions, addressing the fundamental inquiry into the nature of value. It is predominantly applied to the understanding of consumer value, with SDL positing that services constitute a core element of economic transactions, while goods are viewed primarily as vehicles for distribution rather than as distinct representations of value. Value is inherently centered on the customer and is collaboratively generated by both the company and the consumer. As articulated by Lusch & Vargo (2014), the process of value creation can initiate through meaningful interactions, collaborative efforts, reciprocal exchanges, assessments of job performance, and the integration of resources. Engaging in these activities enables both customers and service providers to realize shared advantages, foster service excellence, and enhance the sustainability of the service ecosystem.

Collaboration is a foundational principle within the Service Dominant Logic framework. In the context of Value CoCreation, this collaborative dynamic is conceptualized as “marketing with” rather than “marketing to,” highlighting a participatory approach among stakeholders. This perspective enables the removal of barriers, opens access to new opportunities and resources, enhances the understanding of effective resource integration, improves service quality, and reduces the likelihood of service delivery errors (Lusch & Vargo, 2014). However, when the involved parties fail to contribute resources or actively engage in the collaborative process, the potential value may remain unrealized or even be perceived negatively (Roberts et al., 2014). Conversely, significant contributions and active involvement from all parties can generate greater mutual benefits (Lusch & Vargo, 2014). Enthusiasm and optimism about achieving more valuable and meaningful outcomes for all stakeholders play a pivotal role in the success of the Value CoCreation process (Roberts et al., 2014).

Religious value co-creation refers to the process of generating value that is intrinsically linked to religious principles. The values that emerge from religious beliefs are closely tied to an individual’s commitment to their faith (Rahman, 2012). This commitment reflects the degree to which an individual adheres to their religious values and incorporates them into their everyday activities, which may include a motivation to engage in proselytism during the purchasing process. Da’wah, or the act of inviting others to understand and embrace religious beliefs, has the capacity to foster harmony among individuals, thereby enhancing group cohesion (Kashif et al., 2015). Furthermore, da’wah encompasses elements of interactive communication; as

individuals engage in proselytizing, they not only disseminate their religious values but also receive feedback regarding their messages.

IVCC encompasses aspects of both contribution, illustrated by the dimension of sincere giving, and collaboration, exemplified by the dimension of sincere receiving. The Quran emphasizes the importance of charitable giving, stating, “And among the best alms is the alms of knowledge” (HQ [4:114]). Additionally, a narration by Ibn Majah conveys the words of the Prophet Muhammad: “The best charity is when a Muslim acquires knowledge and subsequently imparts it to another Muslim brother.” In Islam, the significance of knowledge is paramount, as numerous verses in the Quran highlight that individuals endowed with knowledge hold a distinguished status. A review of the literature concerning the internalization of Islamic values reveals several indicators associated with the Islamic Value Co-Creation dimension. These indicators include: (a) the frequent provision of insights regarding Islamic products to owners of micro, small, and medium enterprises (MSMEs), (b) the regular encouragement of MSMEs to develop Islamic products, (c) the consistent offering of guidance on how to effectively communicate the advantages of Islamic products, and (d) the ongoing reinforcement of MSME owners’ confidence in their ability to manage Islamic products.

#### **d. Sustainability of MSME’s Performance**

Colbert & Kurucz (2007) define organizational sustainability as a condition or capability that enables an organization to endure and evolve within its industry. Building upon this perspective, Brent & Labuschagne (2007) conceptualize sustainability within the business context as the integration of practices and strategies that not only address the short-term needs of the organization and its stakeholders but also preserve the resources required for future operations. Therefore, sustainability is best understood as a strategic approach aimed at generating long-term value. As such, sustainability has become a critical issue for organizations across all sectors, including small and medium-sized enterprises (SMEs). Mutegi et al., (2015) describe SME performance as the outcomes produced by individuals, tailored to their specific roles or tasks within a company over a defined timeframe, and measured against certain value standards of the organization. Performance reflects the successful attainment or failure to meet organizational objectives that have been set forth. It is frequently linked to the concept of business growth (Sindania & Hartono, 2022). Adomako et al., (2016) assert that business growth pertains to a company’s capacity to expand its size.

Fatoki (2014) posits that the concept of business growth and its measurement is typically characterized by absolute or relative changes in various metrics such as sales, assets, employment, productivity, and profit. At different developmental stages, distinct factors become essential for the sustained growth and success of small and medium-sized enterprises (SMEs). Eresia-Eke & Raath (2013) further elaborate that business growth can be assessed from three interconnected dimensions: financial growth, strategic growth, and structural growth. It is imperative for business owners to incorporate these three dimensions into their growth planning. Various indicators can be employed to evaluate an organization’s sustainability. Brent & Labuschagne (2007) identify indicators related to environmental, economic, and social sustainability. Additionally, Bourlakis et al., (2014), Pranisya et al., (2024) and Liu et al., (2018) emphasize that business sustainability can be assessed through three key dimensions namely financial efficiency which

reflects the effective utilization of financial resources by SMEs, flexibility which indicates the firm's ability to respond and adapt to environmental changes, and quality which represents the capacity of SMEs to maintain and improve the standards of their human resources and operational processes.

## RESEARCH METHODS

This study utilises a descriptive research design with a quantitative methodology, wherein the findings are presented through both visual and textual formats that incorporate numerical data to address the research objectives. The target population consists of 125 fashion small and medium-sized enterprises (SMEs) located in Grobogan Regency. The selection of this region is based on its growing fashion MSME sector, which shows strong market dynamics but limited digital integration. A total of 95 respondents were selected using Slovin's formula. The fashion sector is one of the creative industry subsectors that has been greatly affected by the development of digital technology, particularly in terms of marketing and sales through social media and e-commerce. Therefore, fashion SMEs are a relevant population to study in the context of digital literacy, digital marketing adoption, and business performance (Kementerian KUKM, 2022). These enterprises are officially registered with the Grobogan Cooperative and SME Office, integrate technology into their operations, and have a workforce. The sample size of 95 respondents was calculated using the Slovin formula. The sampling method employed is proportional random sampling, which involves a stratified yet random selection process similar to a lottery system.

## RESEARCH RESULTS AND DISCUSSION

### a. Outer Model

The measurement model in the context of Partial Least Squares Structural Equation Modeling (PLS SEM) serves to assess the validity and reliability of indicators in measuring latent constructs, refers to the relationship between indicators or manifest variables and the latent construct being measured (Syaiful, 2018). Convergent validity is tested by looking at the loading factor value of each indicator against the latent construct that should be measured, with values above 0.7 considered adequate. In addition, construct reliability is evaluated through Composite Reliability (CR) and Average Variance Extracted (AVE), where CR values above 0.7 and AVE above 0.5 indicate that the indicators are consistent in measuring the intended latent construct (Hair et al., 2019). Outer model testing is important to ensure that the research instruments used are valid and reliable, so that the analysis results are more accurate and reliable.

This study employs the Partial Least Squares (PLS) methodology to assess the validity and reliability of the model constructs with SmartPLS software. The analytical procedure encompasses evaluating both the external model and the internal model of the study framework. The outer model assessment seeks to analyse the validity and reliability of the indicators and constructs, as proposed by (Hair et al., 2019). This evaluation is organised into three primary criteria: (1) Convergent validity, necessitating an outer loading value surpassing 0.7 and an Average Variance Extracted (AVE) value exceeding 0.5; (2) Internal consistency, assessed by a Cronbach's alpha coefficient greater than 0.7 and a Composite Reliability value also exceeding 0.7; and (3) Discriminant validity, determined using the Fornell-Larcker criterion, where the



**Table 1. 1** Measurement Evaluation Models

Latent Variables	Convergent Validity	Internal Composite Reliability	Discriminant Validity		C.A	HTMT
	Indicators	Loading	AVE	CR		
		> 0.70	>0.50	>0.70	>0.70	< 1
Digital Literacy	DL.1	0.791				YES
	DL.2	0.833	0.594	0.879	0.831	
	DL.3	0.819				
	DL.4	0.723				
	DL.5	0.778				
Islamic Value Co - Creation	IVCC.1	0.794				YES
	IVCC.2	0.749				
	IVCC.3	0.838	0.590	0.849	0.799	
	IVCC.4	0.863				
Innovation Capability	IC.1	0.702				YES
	IC.2	0.738	0.525	0.815	0.769	
	IC.3	0.764				
	IC.4	0.791				
Sustainability of MSME's Performance	SMP.1	0.702				YES
	SMP.2	0.746				
	SMP.3	0.767				
	SMP.4	0.864	0.519	0.866	0.827	
	SMP.5	0.768				
	SMP.6	0.769				

square root of the AVE (diagonal value) must exceed its correlations with other constructs, and the Heterotrait-Monotrait (HTMT) ratio must remain below 1. According to these criteria, the indicators and constructs included in this study are validated as both valid and reliable.

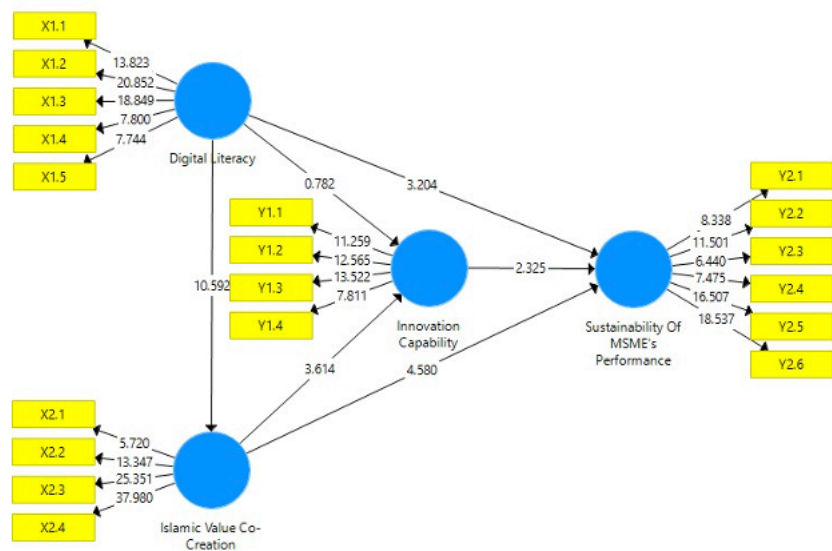
#### **b. Inner Model**

The inner model evaluation in this study focuses on assessing the structural relationships among the latent variables, namely Digital Literacy, Islamic Value Co-Creation, Innovation Capability, and Sustainability of MSME Performance. The results indicate that Digital Literacy has a significant positive effect on Sustainability but does not significantly affect Innovation Capability. Islamic Value Co-Creation demonstrates a strong and significant influence on both Innovation Capability and Sustainability. Moreover, Innovation Capability significantly mediates the relationship between Islamic Value Co-Creation and Sustainability of MSME Performance, suggesting its pivotal role in translating religious value integration into long-term business outcomes. The coefficient of determination ( $R^2$ ) values indicate that the model has a moderate to substantial explanatory power, and the path coefficients are statistically significant, confirming the robustness of the hypothesized relationships. The inner model in Partial Least Squares Structural Equation Modeling (PLS-SEM) refers to the relationship

between latent constructs in the research model. In this study, the inner model is used to test hypotheses regarding the relationship between Inner model analysis involves testing the strength and direction of the relationship between these constructs through path coefficients and t-values resulting from bootstrapping (Priyono, 2016).

### The Influence of Digital Literacy on Innovation Capability

Hypothesis testing regarding the effect of Digital Literacy on Innovation Ability shows that Digital Literacy has no significant effect on Innovation Ability. This is evidenced by the statistical results, where the T-Statistic value is 0.782 and the P-Value is 0.217, which exceeds the significance threshold of 0.05. This finding indicates that in the context of MSMEs in Grobogan Regency, the level of digital literacy of businesses is not sufficient to encourage or facilitate a significant increase in their ability to innovate. One possible cause of this result



**Table 1.2** Hypothesis Testing

	Original Sample	Sample Mean	Standard Deviation	T-Statistics	P-Value
Digital literacy on Innovation Capability	0.121	0.129	0.154	0.782	0,217
Digital literacy on Islamic Value Co-Creation	0.668	0.672	0.063	10,592	0,000
Digital Literacy on Sustainability of MSME's Performance	0.309	0.310	0.096	3.204	0.001
Innovation Capability on Sustainability of MSME's Performance	0.170	0.166	0.073	2.325	0,010
Islamic Value Co-Creation on Innovation capability	0.473	0.482	0.131	3.614	0.000
Islamic Value Co-Creation on Sustainability of MSME's Performance	0.506	0.510	0.111	4.580	0.000

is that Digital Literacy, while important for adapting to technological advancements, does not directly translate into the development of innovation capabilities in the absence of other supporting factors.

Such factors could include access to advanced technological tools, training programs that integrate innovation processes, or a business ecosystem that actively encourages creative problem solving and innovative thinking. Without these supporting elements, the potential of Digital Literacy to stimulate innovation remains suboptimal. Furthermore, the results of this study emphasize the need for targeted interventions to improve the effectiveness of Digital Literacy in driving innovation. Policymakers and stakeholders need to design programs that not only improve digital skills, but also integrate those skills into practical applications for innovation. This could involve collaborative workshops, mentoring programs and access to case studies of successful innovations thanks to digital literacy. Such efforts are critical to bridging the gap between digital competencies and the practical ability to innovate, allowing MSMEs to make the most of their digital potential for sustainable growth and competitiveness.

### **The Influence of Digital Literacy on Islamic Value Co-Creation.**

The results show a significant influence between Digital Literacy on Islamic Value Co-Creation. This is evidenced by the T-Statistic value of 10.592 and P-Value of 0.000, which is far below the significance threshold of 0.05. This finding indicates that the high level of digital literacy among MSME players in Grobogan Regency plays an important role in improving the Islamic Value Co-Creation process in their business practices.

Digital Literacy enables MSME players to access, utilize and share information effectively, thus supporting collaboration based on Islamic values. By utilizing digital platforms, businesses can communicate more efficiently with stakeholders, integrate Islamic principles in business operations, and create shared value in accordance with ethical and religious norms. This synergy between digital competencies and Islamic values helps strengthen trust and relationships with customers and business partners, which in turn supports business sustainability. These findings confirm the importance of developing digital literacy programs that are specifically designed to align with Islamic business ethics. Training modules that integrate the use of digital tools with Islamic values can empower businesses to innovate while adhering to religious principles. Such initiatives not only enhance the capacity to create shared value, but also strengthen the identity and competitiveness of Islamic MSMEs in local and global markets. Therefore, policymakers and business associations need to prioritize the development of these integrative skills to maximize the potential of Digital Literacy in driving Islamic Value Co-Creation.

### **The Influence of Digital Literacy on Sustainability of MSME's Performance**

The findings indicate a statistically significant relationship between digital literacy and the sustainability of MSME performance. This is demonstrated by a T statistic value of 3.204 and a P value of 0.001, which falls well below the conventional significance threshold of 0.05. These results confirm that higher levels of digital literacy among MSME actors significantly contribute to enhancing the sustainability of their performance, particularly in adapting to the evolving dynamics of the digital economy.

Digital Literacy provides MSME players with the ability to adopt and utilize digital tools

to improve operational efficiency, market reach, and customer engagement. With mastery of digital technology, MSMEs can optimize resource allocation, reduce costs, and develop innovative strategies that are in line with sustainable business practices. In addition, digital literacy enables businesses to access global markets and gain competitive advantage, thereby driving long-term performance growth while maintaining environmental, social, and economic sustainability.

These findings emphasize the importance of targeted initiatives to improve digital literacy among MSME players. Stakeholders, including policymakers and business associations, need to focus efforts on developing training programs and resources that empower MSME actors to integrate digital competencies into their sustainability strategies. This approach not only ensures business resilience but also promotes inclusive economic development in line with the sustainable development goals (SDGs). Strengthening the digital capabilities of MSMEs is an important step to ensure their role as drivers of sustainable economic growth.

### **The Influence of Innovation Capability on Sustainability of MSME's Performance.**

The results showed a very significant influence between Innovation Capability and MSME Performance Sustainability. This is supported by a T-Statistic value of 2.325 and a P-Value of 0.010, which is below the 0.05 significance threshold. This finding indicates that the ability of MSMEs to innovate plays an important role in ensuring the sustainability of their performance amidst intense business competition. Innovation capabilities enable MSMEs to adapt to market changes, develop unique products or services, and improve operational processes. By encouraging innovation, MSMEs can meet customer needs more effectively, differentiate themselves from competitors, and create a sustainable competitive advantage. In addition, innovation also encourages the adoption of more efficient and environmentally friendly practices, which is in line with sustainable development goals.

These findings confirm the importance of prioritizing MSMEs in developing innovation capabilities as part of their strategic planning. Stakeholders need to support this by providing access to innovation-related training, funding and technology resources. Collaborative initiatives with research institutions and industry experts can also help MSMEs capitalize on their innovation potential. Strengthening innovation capabilities not only ensures the sustainability of MSME performance but also makes them a key contributor to economic resilience and growth.

### **The Influence of Islamic Value Co-Creation on Innovation Capability.**

The test results show a significant influence between Islamic Value Co-Creation on Innovation Ability. This is evidenced by the T-Statistic value of 3.614 and P-Value of 0.000, which is far below the significance threshold of 0.05. This finding indicates that the integration of Islamic values in business practices plays an important role in improving the ability of MSMEs to innovate effectively and sustainably.

Islamic Value Co-Creation emphasizes collaboration based on ethical and religious principles, which can inspire creative and innovative solutions in business operations. By embedding values such as honesty, fairness and social responsibility in their business strategies, MSMEs can create an environment that supports innovation. This collaborative approach rooted in Islamic teachings encourages businesses to not only focus on profitability, but also create value for society, ensuring long-term growth and ethical development. These findings emphasize the importance of aligning Islamic values with innovation efforts. Business leaders in MSMEs need

to actively seek ways to integrate these values into their organizational culture and innovation processes. This can be achieved through training programs, collaborative partnerships and strategic initiatives that emphasize the integration of ethical values with business innovation. By doing so, MSMEs can strengthen their innovation capabilities while adhering to the principles of Islamic business ethics, resulting in more sustainable and impactful business outcomes.

### **The Effect of Islamic Value Co-Creation on Sustainability of MSME's Performance.**

The test results show that Islamic Value Co-Creation has a significant influence on the Sustainability of MSME Performance. This is evidenced by the T-Statistic value of 4.580 and P-Value of 0.000, which indicates a very strong relationship between the application of Islamic values in business and the sustainability of MSME performance. This finding indicates that Islamic values applied in business practices can support long-term business continuity.

Islamic Value Co-Creation emphasizes the principle of collaboration based on Islamic ethics and morality, which not only pays attention to the profit aspect, but also benefits the community and the environment. This approach encourages MSMEs to run businesses that not only prioritize profits, but also have a positive impact on the community and maintain social and environmental sustainability. Therefore, the application of Islamic values in business strategy can be a key driver for MSMEs to survive and thrive in the long term. This finding confirms the importance of applying Islamic values in sustainable business decision-making. MSMEs that are able to integrate Islamic values in every aspect of their operations tend to have a competitive advantage and can maintain the sustainability of their performance. Therefore, stakeholders need to support initiatives that encourage the application of Islamic principles in business to ensure the future viability and success of MSMEs.

### **Islamic Value Co-Creation mediates Digital Literacy towards Innovation Capability**

The test results show that Islamic Value Co-Creation mediates the effect of Digital Literacy on Innovation Ability. This is evidenced by the T-Statistic value of 3.452 and P-Value of 0.000 (P-Value <0.05), which indicates that the role of Islamic Value Co-Creation is very

**Table 1.3** Testing Mediation Effects

	Original Sample	Sample Mean	Standard Deviation	T-Statistics	P-Value
Digital Literacy > Islamic Value Co-Creation > Innovation Capability	0.316	0.323	0.092	3,452	0,000
Digital Literacy > Innovation Capability > Sustainability of MSME's Performance	0.021	0.020	0.028	0,743	0,229
Islamic Value Co-Creation > Innovation Capability > Sustainability of MSME's Performance	0.081	0.082	0.047	1,700	0.045
Digital Literacy > Islamic Value Co-Creation > Innovation Capability > Sustainability of MSME's Performance	0.054	0.055	0.032	1,683	0,046
Digital Literacy > Islamic Value Co-Creation > Sustainability of MSME's Performance	0.338	0.340	0.070	4,817	0,000



significant in strengthening the relationship between Digital Literacy and Innovation Ability. This finding indicates that digital literacy not only has a direct impact on innovation capability, but also through the application of Islamic values in the collaborative process that supports such innovation.

Islamic Value Co-Creation incorporates ethical and collaboration principles based on Islamic teachings, which can enrich the innovation process with moral and social values. In this context, digital literacy provides MSME actors with the tools and knowledge to utilize technology, while Islamic values direct them to use technology in a way that is ethical and beneficial to society. Thus, Islamic Value Co-Creation plays an important role in enhancing MSMEs' innovation capabilities through a balanced approach between technology and moral values.

These findings emphasize the importance of integrating digital literacy and Islamic values in MSME innovation strategies. Stakeholders need to ensure that digital literacy development does not only focus on technical skills, but also on understanding ethical values that can enrich and direct innovation towards more sustainable outcomes that benefit society at large.

### **Innovation Capability mediates Digital Literacy towards Sustainability of MSME's Performance**

The table shows that the association between MSME Performance Sustainability and Digital Literacy is not mediated by Innovation Capability. A T Statistic of 0.743 and a P Value of 0.229, both of which are above the 0.05 significance level, support this. These findings imply that Innovation Capability is not a significant mediator, but Digital Literacy has an impact on MSME Performance Sustainability.

Innovation capability, while important to support the growth and competitiveness of MSMEs, is not enough to bridge the direct influence between Digital Literacy and performance sustainability. This may be due to other factors that better influence how Digital Literacy contributes to performance sustainability, such as resource management, market networks, or other external factors that affect business sustainability.

These findings provide insights that the influence of Digital Literacy on the sustainability of MSME performance may be more complex and influenced by various other variables. Therefore, it is important for stakeholders to consider a more holistic approach in supporting MSMEs, taking into account not only the improvement of digital literacy, but also other factors that can support the sustainability of their performance.

### **Innovation Capability mediates Islamic Value Co-Creation towards Sustainability of MSME's Performance**

In this pathway, the mediation effect proved significant with a T-Statistic value of 1.700 and a P-Value of 0.045 ( $P\text{-Value} < 0.05$ ). This indicates that Innovation Capability mediates the relationship between Islamic Value Co-Creation and MSME Performance Sustainability. This finding indicates that Islamic Value Co-Creation can improve the sustainability of MSME performance through strengthening innovation capability.

Innovation capability, which is influenced by the application of Islamic values in business, enables MSMEs to adapt to market challenges, develop new products or services, and create

sustainable solutions. In other words, Islamic values integrated in business practices not only encourage ethical and social behavior, but also support increased innovation that is essential for the sustainability of MSME performance.

These findings indicate the importance of combining Islamic values with innovation efforts in business strategy. Stakeholders should pay special attention to how ethical values can support and facilitate the innovation process, which in turn will improve the sustainability of MSME performance in the long run.

### **Islamic Value Co-Creation mediates Digital Literacy towards Sustainability of MSME's Performance**

The test results show that Islamic Value Co-Creation mediates the effect of Digital Literacy on MSME Performance Sustainability. This is evidenced by the T-Statistic value of 4.817 and P-Value of 0.000, which indicates a highly significant effect. This finding indicates that the application of Islamic values in business practices can strengthen the relationship between Digital Literacy and MSME performance sustainability.

Islamic Value Co-Creation provides an ethical and moral foundation that can increase the effectiveness of digital literacy in driving the sustainability of MSME performance. By integrating Islamic values, MSMEs can not only optimally utilize digital technology, but can also ensure that the use of technology has a positive impact on society and the environment. This approach leads to business sustainability that not only prioritizes financial returns, but also sustainable social benefits.

The findings confirm the importance of integrating digital literacy and Islamic values in MSME business strategies. Stakeholders need to support initiatives that encourage the development of digital literacy balanced with an understanding of ethical values that can strengthen the sustainability of MSME performance in the future.

### **Islamic Value Co-Creation and Innovation Capability mediate Digital Literacy towards Sustainability of MSME's Performance**

In this pathway, the effect of Digital Literacy on MSME Performance Sustainability is mediated by Islamic Value Co-Creation and Innovation Ability, with a T-Statistic value of 1.683 and a P-Value of 0.046. This finding shows that Digital Literacy not only has a direct impact on the sustainability of MSME performance, but also through a mediation process involving the integration of Islamic values and increased innovation capabilities.

Islamic Value Co-Creation plays a role in strengthening the positive impact of digital literacy by providing an ethical basis that directs the responsible use of digital technology. Meanwhile, Innovation Capability enables MSMEs to adapt to market changes and create more sustainable solutions. These two factors work together to ensure that digital literacy can support the long-term sustainability of MSME performance.

The findings emphasize the importance of considering mediating factors such as Islamic Value Co-Creation and Innovation Capability in MSME development strategies. Stakeholders need to ensure that digital literacy is combined with ethical values and innovation capabilities that can strengthen the competitiveness and sustainability of MSMEs.

## CONCLUSION

This research shows that Digital Literacy has a significant influence on various aspects of MSME Sustainability, especially in supporting Islamic Value Co-Creation and Innovation Capability. Good digital literacy provides MSME players with the knowledge and skills to optimally utilize technology, which not only strengthens business operations, but also provides a competitive advantage in facing market challenges. Through improved digital literacy, MSMEs can improve efficiency, expand market reach, and introduce product and service innovations that are more in line with consumer needs.

Furthermore, digital literacy not only contributes to technical and operational aspects, but also plays a role in supporting the application of Islamic values in business practices. Islamic value co-creation that integrates Islamic ethical principles in business activities, such as honesty, justice and social benefit, becomes easier to realize when MSMEs have adequate digital literacy. This allows them to access information, improve business processes, and collaborate with various parties to create sustainable value for society.

In addition, Digital Literacy also supports the development of Innovation Capability, which is an important factor in the sustainability of MSMEs. With better innovation capabilities, MSMEs can create new products and services that are more relevant and sustainable, and have higher competitiveness in the market. Thus, the positive influence of Digital Literacy is not only limited to technical aspects, but also affects the long-term sustainability of MSMEs through increased social value and innovation based on Islamic values. This research confirms the importance of digital literacy as a catalyst that supports various dimensions of MSME sustainability, in terms of social, economic and environmental aspects.

## Managerial Implications

Based on the results of this study, it is recommended that the government and educational institutions improve digital literacy training programs that are more affordable and accessible to MSME actors, especially in areas with limited access to technology. These training programs should cover basic to advanced understanding of digital technology, as well as ways to integrate it in businesses to support more efficient operations. This is important so that MSMEs can optimally utilize digital technology, which in turn will strengthen their competitiveness and business sustainability.

In addition, it is important to educate MSME players on the importance of integrating ethical values in their business practices, especially those based on Islamic teachings. Training and coaching programs that combine digital literacy and Islamic Value Co-Creation can help MSMEs to be more aware of running their businesses in a way that not only prioritizes financial returns, but also provides sustainable social benefits. This will create MSMEs that not only compete globally but also play a role in building a better society. MSMEs are advised to continue developing their Innovation Capability as one of the main keys to long-term sustainability. Increasing this innovation capability can be encouraged by utilizing various available digital resources, as well as collaborating with other parties to create products and services that are more relevant to market needs. In addition, MSME players must utilize digital platforms to expand their networks and create new opportunities that can strengthen their business sustainability.

## Limitations

This study has several limitations that need to be considered. First, the sample used was limited to 95 MSMEs in Grobogan Regency, so the results may not fully represent the conditions of MSMEs in other regions with different characteristics. Secondly, this study relies solely on quantitative data obtained through questionnaires, which may be influenced by respondent bias or different understanding of the questions asked. Third, although this study focuses on digital literacy, Islamic value co-creation, innovation capability, and sustainability of MSME performance, other external factors that may affect MSME sustainability, such as government policies or macroeconomic conditions, are not discussed in depth. Therefore, the results of this study need to be further tested by involving a wider sample and more diverse variables to obtain more comprehensive conclusions.

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