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Navigating sustainable competitive advantage: social and technological challenges and open innovation in creative economy-based traditional markets

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ABSTRACT

Purpose — *Innovation and technology introduce businesses to uncertain conditions, necessitating a focus on enhancing competitiveness. This research aims to investigate the impact of social and technological challenges, as well as open innovation, on the sustainable competitive advantage of a creative economy-based traditional market.*

Method — *This study employs a quantitative approach by distributing questionnaires to 100 MSMEs in Yogyakarta traditional markets. The Partial Least Squares-Structural Equation Modeling (PLS-SEM) was utilized to analyze the effects.*

Result — *The results indicate that social and technological challenges contribute to a sustainable competitive advantage. However, open innovation does not significantly influence the enhancement of a sustainable competitive advantage.*

Practical implications — *The study suggests that the government should support MSMEs in addressing technological disruption by offering digital training to expand their market reach.*

Keywords: *social and technological challenges, open innovation, sustainable competitive advantage*

INTRODUCTION

The shift in economic dynamics has led to changes that emphasize sustainable economic development rooted in creativity, innovation, and discovery. This economic transformation is known as the creative economy, a concept prioritizing information and creativity by leveraging ideas and knowledge from human resources as a key production factor in the new economic era. The creative economy encompasses 14 subsectors, including advertising, architecture, goods market, art, craft, design, fashion, video, film and photography, interactive games, music, performing arts, publishing and printing, computer and software services, television and radio, and research and development.

The utilization of creativity and motivation in developing products and services with high creative content in economic activities' inputs and outputs can propel the creative economy. The resilience of the creative economy was notably effective during Indonesia's economic crisis when major companies faced bankruptcy. Moreover, the creative economy has the potential to contribute to national development through GDP growth (Polnaya & Darwanto, 2015).

In recent years, the trade trend of creative economic products in Indonesia has reached 60%, with the Java region, particularly the Special Region of Yogyakarta, making the highest contribution to GDP growth. In the first quarter of 2023, the Special Region of Yogyakarta experienced a notable growth of 5.3% in sectors such as manufacturing industry, information and communication, accommodation and food services, as well as educational services (Kementerian PPN/Bappenas, 2023). This success is attributed to the city government's proactive role in empowering and protecting the creative industry, as outlined in local government regulation No.9 of 2017, with a specific focus on optimizing MSMEs in traditional markets (Badan Kebijakan Fiskal, 2019).

Traditional markets, typically centers for basic needs exchange, have been expanded in function considering the high creative capital of Yogyakarta. The revitalization of traditional markets aims to increase sustainable competitive advantages. The process of creating a sustainable competitive advantage aligns with the resource-based view, emphasizing that organizations can achieve such an advantage by leveraging both tangible and intangible resources (Wernerfelt, 1984; González-Benito & González-Benito, 2005). These resources encompass skilled human resources, data, standard operating procedures, technology, machinery, and more, originating from both internal and external sources (Teece et al., 1997).

Effective utilization of available resources enables organizations to create innovative and high-quality products and services compared to competitors (Barney, 1991). The resource-based view underscores the alignment between organizational capabilities and opportunities, with indicators such as value, rarity, imitability, and substitutability influencing sustainable competitive advantage. For instance, the expertise of human resources in social media must not only be valuable but also rare and inimitable.

Sustainable competitive advantage, distinct from traditional competitive advantage, is obtained through a series of traditional competitive advantages and a strong position in technological resources and capabilities (Huang et al., 2015). In the new economic era, MSMEs need strategic approaches to compete effectively. Prior studies indicate that managing social and technological challenges can enhance sustainable competitive advantage (Haseeb et al., 2019a; Tiep et al., 2021). Social challenges encompass social responsibility and values & beliefs, while technological challenges may manifest as IT managerial resources and successful IT implementation. MSMEs adept at managing these challenges can create a sustainable competitive advantage.

Zhang et al.'s (2023a) study on Chinese high-tech enterprises suggests that open innovation can increase sustainable competitive advantage through enhanced organizational learning. Open innovation involves businesses acquiring innovative ideas from both internal and external sources, which are then transformed into value for customers to generate profits (de Andrés-Sánchez et al., 2022; Moradi et al., 2021).

This study seeks to investigate the influence of social and technological challenges and open innovation in enhancing sustainable competitive advantage. While previous studies have predominantly focused on technology-based companies, this research uniquely examines MSMEs in traditional markets based on the creative economy in Yogyakarta to assess the effectiveness of ongoing traditional market revitalization initiatives by the local government.

METHOD

This study employed a quantitative approach to test the hypotheses in the research model. Data were collected through the distribution of questionnaires to Micro, Small, and Medium Enterprises (MSMEs) in creative economic-based traditional markets in Yogyakarta. We randomly selected 100 potential respondents from Malioboro Market 1, Malioboro Market 2, and Beringharjo Market. These three markets were chosen because they are part of the priority program for creative economic development in local markets by the Yogyakarta City Government.

The questionnaire utilized a 5-point Likert scale. The Social & Technological Challenge incorporated 4 dimensions (Haseeb et al., 2019), including social responsibility, values & beliefs, IT managerial resources, and IT implementation success. The open innovation variable was measured using 7 statement items from Zhang et al. (2023). Sustainable competitive advantage was assessed through measurement items from Chang (2011) and Ed-Dafali et al. (2023), totaling 7 statements. A detailed breakdown of variables, dimensions, and indicators can be found in Table 1.

Table 1. Research variables, dimensions, and indicators

Variables	Dimensions	Indicators
Social & Technological Challenges	Social Responsibility	My business uses technology that considers environmental aspects
		My business sponsors community activities or other programs
	Values & Beliefs	My business has knowledge of technological developments
		My business uses technology well
		Use of technology increases business productivity
		To use technology in my business requires the value and belief that technology will play a role in developing my business.
	IT Managerial Resources	I have a plan to use technology for business activities
		I understand the use of technology for business function activities such as marketing, finance, and communication
	IT Implementation Success	Use of technology affects effectiveness in decision making
		The use of technology will save money on business operations
		I provide training to employees on the use of technology that supports the business
		New products or services introduced in my business keep up with technological developments
Open Innovation		Our business conducts innovation collaboration activities with academia
		Our business conducts innovation collaboration activities with suppliers
		Our business conducts innovation collaboration activities with competitors
		Our business conducts innovation collaboration activities with customers
		Our business uses external innovation-related products and services
		Our business participates in exhibitions
		Our business is open to new innovations
Sustainable Competitive Advantage		My product quality is better than competitors
		I have better business management skills than my competitors
		My business profits are better than competitors
		My business reputation is better than competitors
		Competitors find it difficult to replace my business's competitive advantage
		My business is more innovative than competitors
		The service I provide is better than competitors

Source: Developed for this study (2023)

Data analysis was performed using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The utilization of both reflective and formative indicators in this study made PLS-SEM appropriate for analyzing these constructs. The research model with PLS-SEM underwent

analysis using a two-stage approach, a methodology recommended for models with variables formed from multiple dimensions (Becker et al., 2012).

Hypotheses development

Social and technological challenges on sustainable competitive advantage

A business's success often hinges on its competitive advantage over rivals. This necessitates strategic alignment in addressing social and technological challenges, including considerations of social responsibility, values & beliefs, IT managerial resources, and IT implementation success. Enhancements in these facets contribute to achieving sustainable competitive advantage, subsequently leading to sustainable business performance (Haseeb et al., 2019a).

In the realm of social responsibility, businesses are not only obligated to meet financial objectives but are also expected to demonstrate a commitment to societal well-being. Studies by Porter & Kramer (2006) posit that social responsibility serves as a mechanism for creating sustainable competitive advantage. The contributions to social responsibility can manifest internally through the development and improvement of working conditions, and externally through initiatives addressing community challenges. Businesses embracing social responsibility practices tend to cultivate a positive image and bolster their competitive position, ultimately attaining sustainable competitive advantage (Abdeljawad, 2022).

Beyond social considerations, businesses grapple with intricate technological challenges. Ineffectual application of technology often leads to business competition failures. This is intrinsically linked to the values and beliefs held by entrepreneurs. Essentially, individual values and beliefs shape behavior (Haseeb et al., 2019b). Entrepreneurs who embrace technology without skepticism believe that its utilization can differentiate their products, ultimately leading to a sustainable competitive advantage. Previous studies have demonstrated the correlation between information technology issues, values & beliefs, and sustainable competitive advantage (Luu & Venkatesh, 2010; Özbilen, 2017; Rice & Aydin, 1991).

Among the technological challenges faced by SMEs, two critical aspects are IT managerial resources and IT implementation success. The foundational element of IT managerial resources is human capital (Hatch & Dyer, 2004), recognizing that human resources play a pivotal role in applying technology to create business value (Muazu & Abdulmalik, 2021). Hence, individuals in the workforce must possess IT skills (Boynton et al., 1994) to effectively manage marketing, finance, communication, and support various business processes. Previous research has demonstrated that IT managerial resources and successful IT implementation can enhance sustainable competitive advantage (Haseeb et al., 2019b). Consequently, we propose the following hypothesis:

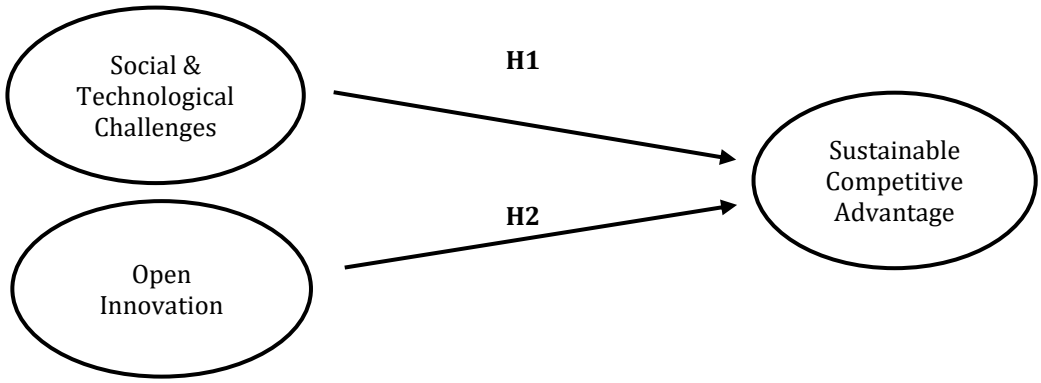
H1: Social and technological challenges affect sustainable competitive advantage

Open innovation on sustainable competitive advantage

Open innovation is characterized by a business's capacity to amalgamate both internal and external resources to exploit market opportunities (Zhang et al., 2023b). This integration serves to mitigate business shortcomings while maximizing available resources (Rigby & Zook, 2002). External resources, in particular, aid businesses in establishing and solidifying their market position (Rass et al., 2013). Building on the findings of prior studies, it is evident that open innovation significantly contributes to the attainment of sustainable competitive advantage (Zhang et al., 2023b). Consequently, this leads to the formulation of the final hypothesis:

H2: Open innovation affects sustainable competitive advantage

Figure 1. Research framework



Source: Own compilation (2023)

RESULT AND DISCUSSION

Respondents' demographics

This study involved 100 respondents who are operators of Micro, Small, and Medium Enterprises (MSMEs) in the creative economy sector, distributed among Malioboro 1, Malioboro 2, and Beringharjo Market. The respondents were classified based on various demographic characteristics, including gender, age, education, business age, and monthly turnover. A detailed overview of the demographic characteristics of the research respondents is provided in Table 2.

Table 2. Demographic of the respondents

Characteristics	Classification	Frequency
Gender	Male	48
	Female	52
Age (years old)	<20	9
	21-30	26
	31-40	18
	41-50	29
	51-60	9
	>61	9
Education	Elementary School	10
	Junior High School	18
	Senior High Scholl	60
	Diploma	4
	Bachelor	8
Business age (years)	0-5	21
	6-10	16
	11-15	10
	16-20	15
	21-25	14
	26-30	13
	>30	11
Turnover per month (million)	>1	81
	1-5	13
	5-10	4

Characteristics	Classification	Frequency
	>10	2

Source: Own compilation (2023)

Evaluation on measurement models

Data analysis in this study adopts a two-stage approach, involving measurements at the dimension level to generate latent variable scores. Subsequently, these scores are utilized as formative indicators for a second-order construct.

In the research model, the variable measured with a second-order construct is "social and technological challenge." This variable is comprised of dimensions such as social responsibility, values and beliefs, IT managerial resources, and IT implementation success. Consequently, the initial evaluation of the measurement model is conducted at the dimension level, as detailed in Table 3.

Table 3. First order measurement model result

Indicators	LF	Dimensions	CR	AVE
SR1	0,851	Social Responsibility	0,849	0,737
SR3	0,866			
VB1	0,841	Value & Belief	0,933	0,777
VB2	0,873			
VB3	0,917			
VB4	0,892			
ITMR1	0,941	IT Managerial Resources	0,923	0,857
ITMR2	0,911			
ITIS1	0,888	IT Implementation Success	0,909	0,716
ITIS2	0,873			
ITIS3	0,749			
ITIS4	0,868			

Source: Own compilation (2023)

Upon analyzing the measurement results, it was observed that question item SR2 was not deemed valid. Consequently, this item was excluded and subsequently re-measured. As a result, all question items within the dimension measuring the social & technological challenge variable are valid, with Loading Factors surpassing 0.70. The Composite Reliability values for all dimensions surpass 0.70, indicating that the employed question items consistently measure these dimensions. Overall, the Average Variance Extracted (AVE) values for each dimension are deemed acceptable, signifying good convergent validity, as they exceed the minimum threshold of 50%.

The next step involves using the latent variable scores derived from the dimension-level measurement to evaluate at the variable level, as illustrated in Table 4.

Table 4. Second order measurement model result

Variable	Items	LF	α	CR	AVE
STC	SR	0,935			
	VB	0,876			
	ITMR	0,727			
	ITIS	0,924			
OI	OI1	0,852	0,938	0,949	0,726
	OI2	0,862			
	OI3	0,904			
	OI4	0,850			

Variable	Items	LF	α	CR	AVE
	OI5	0,864			
	OI6	0,812			
	OI7	0,817			
SCA	SCA1	0,706			
	SCA4	0,851			
	SCA5	0,803			
	SCA6	0,895	0,914	0,932	0,664
	SCA7	0,891			
	SCA8	0,785			
	SCA10	0,751			

Source: Own compilation (2023)

Table 4 indicates that all question items exhibit Loading Factors above 0.70, affirming their validity. Moreover, the reliability levels of the open innovation and sustainable competitive advantage variables are deemed acceptable, given their Cronbach's alpha (α) and Composite Reliability (CR) values exceeding 0.70, as well as Convergent Validity (AVE) values surpassing 0.50.

It is noteworthy that the indicators for social responsibility, values & beliefs, IT managerial resources, and IT implementation success measure social & technological challenges in a formative manner. In contrast to reflective indicators, formative measurement models are evaluated solely based on the significance of weights or, at times, loading factors. Formative constructs do not possess Cronbach's alpha, Composite Reliability, and Convergent Validity as part of their evaluation metrics.

The subsequent phase in the measurement model evaluation involves assessing discriminant validity. This evaluation is essential to confirm that the variables are both theoretically distinct and empirically validated. The Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) criterion are employed as the evaluation methods in this study. Specifically, these methods are exclusively applied to the open innovation and sustainable competitive advantage variables, given that both are measured reflectively. The test results indicate that open innovation and sustainable competitive advantage satisfy the criteria for discriminant validity, as illustrated in Table 5.

Tabel 5. Discriminant validity

Fornell-Larcker Method		
	OI	**SCA**
OI	0,852	
SCA	0,309	0,815
HTMT Method		
	OI	
SCA	0,312	

Source: Own compilation (2023)

Evaluation of structural models

The evaluation of the structural model aimed to test the hypotheses outlined in this study. Given that the social and technological challenge variable is measured in a formative manner, it is crucial to assess the multicollinearity among variables. The study reveals that the VIF values are <5, indicating an absence of multicollinearity among variables (refer to Table 6).

Additionally, the proposed research model in this study exhibits a good fit to the data, evident from an SRMR value of <0.08, indicating a well-fitting model (refer to Table 7).

Table 6. Multicollinearity variables

	SCA
OI	3,119
STC	3,119

Source: Own compilation (2023)

Table 7. Summary of structural model evaluation

	Criteria	**Results**	**Conclusions**
F Square	0,02 (weak), 0,15 (moderate), 0,35 (strong)	0,048	Weak
SRMR	<0,08	0,069	Good

Source: Own compilation (2023)

In the final segment of the structural evaluation of the model, hypothesis testing was conducted, with two hypotheses proposed in the study. However, not all hypotheses were accepted (refer to Table 8). The analysis results reveal that the first hypothesis (H1) is accepted, with a p-value of 0.007 (<0.05) and a t-value of 2.694. This implies that social and technological challenges indeed affect sustainable competitive advantage. Nonetheless, it's important to note that the effect of social and technological challenges on sustainable competitive advantage is deemed weak, as indicated by the f-square value of 0.048.

Conversely, the second hypothesis in this study was rejected, as the p-value exceeded the standard threshold of 0.911, which should ideally be <0.05. The findings suggest that open innovation has no significant effect on sustainable competitive advantage (refer to Table 8).

Table 8. Structural model evaluation

Hypothesis	**t-Value**	**P-Value**	**Conclusions**
STC → SCA	2,694	0,007	Accepted
OI → SCA	0,112	0,911	Rejected

Source: Own compilation (2023)

Discussion

The study's findings reveal that not all proposed hypotheses were accepted. According to the test results, social and technological challenges exhibit a positive and significant effect on sustainable competitive advantage in MSMEs operating in traditional markets based on the creative economy. Despite the formidable challenges posed by technology in these MSMEs, they have initiated the adoption of technology in their business operations, albeit not on a massive scale. The prevalent use of QRIS as a payment system by these MSMEs, catering to the preferences of many buyers, aligns with the findings of Haseeb et al. (2019a). Consequently, it is imperative for MSMEs in traditional markets based on the creative economy to effectively manage the social and technological challenges they face to attain sustainable competitive advantage.

On the other hand, the test results indicate that open innovation does not have a significant effect on sustainable competitive advantage. Theoretically, the open innovation paradigm involves integrating entrepreneurs' capabilities with external company resources and developing markets through various channels. However, this study discovered that MSMEs in Yogyakarta's creative economic-based traditional markets are not actively engaging in such practices. Their reliance is more on offline sales, contingent on the number of visitors. Additionally, these MSMEs

have shifted to new locations provided by the local government, where the visitor count is not as high as before. Although many MSMEs turned to social media and online marketplaces during the Covid-19 pandemic, these channels are no longer in use post-pandemic. These findings diverge from the results reported by Zhang et al. (2023).

CONCLUSION

This study seeks to investigate the impact of social and technological challenges, as well as open innovation, on sustainable competitive advantage. In summary, the findings indicate that social and technological challenges significantly contribute to the augmentation of sustainable competitive advantage among MSMEs in creative economy-based traditional markets in Yogyakarta. However, open innovation does not play a role in enhancing sustainable competitive advantage, primarily due to the absence of innovation strategies in their business operations.

The practical implication derived from this research underscores the necessity for government support for MSMEs in traditional markets based on the creative economy, particularly in addressing technological disruption. Government interventions, such as providing digital skills training encompassing areas like gadget mastery, storytelling, basic photography, digital marketing, and basic business management, could empower MSMEs to broaden their market reach and reduce dependency on offline sales.

It's crucial to acknowledge the study's limitations, as it is confined to creative economy-based traditional market MSMEs in Yogyakarta, thus limiting the generalizability of its findings. Future research endeavors could explore respondents from diverse regions or countries, and the inclusion of additional variables would enhance the comprehensiveness of the study, recognizing that each region or country has its unique set of challenges.

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