

Bridging Tradition and Technology: A Sociotechnical Perspective on Digitalising the Kasongan Pottery Industry

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ABSTRACT

This study explores how Kasongan pottery entrepreneurs—a community rooted in cultural heritage—navigate the transition to the digital era. As digital technology rapidly reshapes business practices in Indonesia, traditional industries such as Kasongan pottery face unique challenges in adopting new platforms. Drawing on the theories of diffusion of innovation, the digital divide, and sociotechnical systems, this research examines the structural, generational, and cultural factors influencing digital adaptation in this artisanal sector. Using a qualitative case study approach, the study involved purposive and snowball sampling to select ten key informants, including senior and younger-generation entrepreneurs, government officials, and digital facilitators. Thematic analysis of in-depth interviews and observations identified a generational divide in digital literacy, uneven platform utilisation, and market segmentation patterns based on product type and target audience. The findings highlight that while younger artisans are more open to digital tools, systemic support and intergenerational collaboration are lacking. Based on these insights, the study proposes a culturally sensitive digital adaptation framework, focusing on four pillars: capacity building, intergenerational mentorship, platform localisation, and policy integration. These findings contribute to both academic discourse and policy design by situating digitalisation within the sociocultural dynamics of heritage-based industries. The study underscores the importance of inclusive strategies that preserve cultural identity while enabling digital growth, offering valuable implications for similar traditional sectors across Indonesia and beyond.

Keywords: digital adaptation, Kasongan pottery, cultural industry, diffusion of innovation, digital divide

INTRODUCTION

The development of the digital economy in Indonesia has been a major highlight in recent years. In 2023, the digital economy in Indonesia will continue to grow. . With the rapid growth of internet users in Indonesia, businesses of all sizes now have a great opportunity to utilize digital media channels to reach their target audiences (Mustika & Maulidah, 2023). Digital marketing not only offers more effective marketing, but also contributes to significantly expanding distribution reach. In addition, Digital Marketing is also used to significantly increase visibility through social media platforms. (Sasikirana et al., 2024). In addition to offering cost and time efficiency, digital marketing also changes the distribution model by facilitating a home delivery system and providing applications that connect distributors directly with consumers. The application of digital technology in marketing provides new hope for entrepreneurs to develop and adapt in the digital era. (Jasri et al., 2022).

Business development in the digital era requires business actors from various sectors to be more responsive to technology (Putri et al., 2024), especially in marketing. Business actors are now faced with major challenges, such as expanding market access and maintaining competitiveness in an increasingly global market. Businesses that successfully utilize technology in marketing are able to increase product visibility and market reach more efficiently and effectively (Asrah et al., 2024). However, adapting this technology is not always easy for industries that have traditional cultural roots and methods, because there needs to be a balance between maintaining product authenticity and the needs of the modern market that continues to grow.

However, amidst technological developments in the marketing process, adaptation is key to business continuity in various sectors. Entrepreneurs must adapt in the face of the development of the digital era, this is done by evaluating and updating methods and procedures that are no longer relevant, as well as implementing new technologies (Supriyanto & Hana, 2020). The traditional handicraft business sector has a very important contribution to the preservation of traditional culture (Ibadurrahman, 2025). one of them is Kasongan pottery, a traditional craft from Yogyakarta known as the center of pottery craftsmen. business actors in Kasongan not only maintain traditional techniques and motifs, but also actively develop the cultural and aesthetic values of each pottery product. Through technological adaptation in marketing, such as the use of social media and e-commerce platforms, Kasongan craftsmen can introduce their products to a wider market. This innovation allows business actors in Kasongan not only to maintain the unique culture and artistic value of traditional pottery, but also to contribute to the village economy and strengthen Kasongan's position as a center for high-value ceramic crafts.

Previous research has shown that effective digital marketing strategies can be implemented through product launches packaged with interesting content, such as stories accompanied by photos and videos. (Aisyah et al., 2024). In addition, it has been proven that the use of digital technology can help MSMEs in increasing operational efficiency, reaching wider markets, and increasing customer satisfaction. (Putra et al., 2023).

Although digital development is increasingly rapid and offers various opportunities in marketing, there are still many business actors who have not utilized digital marketing optimally. This phenomenon can be seen in the case that occurred in Tanah Abang, Jakarta, where a number of traders complained about the decline in turnover caused by the existence of e-commerce platforms such as TikTok Shop according to *ekonomibisnis.com*. They argue that transactions that occur on the platform have shifted consumer interest from shopping directly in physical markets to online shopping, which ultimately reduces the competitiveness of their businesses. This phenomenon illustrates the inequality in digital adoption between traditional and digital business actors, which has an impact on the imbalance in the local economy.

This study seeks to fill that gap by examining the Kasongan pottery industry through the theoretical lenses of the diffusion of innovation, digital divide (Yunos & Din, 2019), and sociotechnical systems (Navanti et al., 2024). These frameworks help interpret how technological change interacts with generational differences, social structures, and cultural norms. To guide this investigation, the study poses the following research questions:

1. How do Kasongan pottery entrepreneurs experience and manage digitalisation?
2. What are the key barriers and opportunities in the adaptation process?
3. What culturally sensitive strategies and policy interventions can support digital transformation in heritage-based industries?

RESEARCH METHODS

This study uses a qualitative research design and a case study approach to delve into how Kasongan pottery entrepreneurs manage and adapt to digital transformation. The qualitative paradigm allows for the investigation of lived experiences, values, and socio-cultural dynamics within a particular environment. The case study method is particularly useful because it allows for a focused examination of a bounded system the Kasongan pottery industry in its natural surroundings.

Data were gathered through direct observation and in-depth semi-structured interviews with selected ceramic entrepreneurs, local government leaders, and digital marketing facilitators. To guarantee that different business scales and levels of digital adoption were represented,

respondents were chosen using a purposive sample technique. This triangulation technique resulted in a more comprehensive understanding of how various actors perceive and respond to digital concerns.

To maintain methodological rigour, the study followed key qualitative concepts like credibility, transferability, and dependability. Field notes and interview recordings were transcribed and analysed thematically using a coding procedure based on Miles and Huberman's interactive approach, which included data reduction, data display, and conclusion draughting. The technique addresses the reviewer's previously observed gap by focussing on both individual and collective adaptation mechanisms, allowing for a cohesive link between the research objectives and the empirical data in order to provide a more comprehensive understanding of digital transformation on a local scale (Sidiq & Choiri, 2019)

RESULT AND DISCUSSION

Kasongan, a village located in Bantul Regency, Yogyakarta, has long been known as a center for pottery crafts that are rich in cultural and aesthetic values. The history of ceramic crafts in Kasongan began during the Diponegoro War (1825–1830), when clay processing skills began to be known and applied by the local community. At that time, this activity developed not only as a form of innovation to meet daily needs, such as making household equipment, but also as part of a cultural tradition that was passed down from generation to generation. The name "Kasongan" itself refers to Kyai Song, a soldier and spiritual teacher of Prince Diponegoro, who played an important role in popularizing clay processing in Kasongan. Expertise in this craft later became the foundation of the local economy, which not only supported the lives of the community, but also preserved the cultural identity of the region. In 2019, data showed that the number of Kasongan residents working as craftsmen and artists only reached 221 people, this figure is lower compared to the number of residents working as factory employees and laborers which reached 341 people (Adib et al., 2024).

Initially, pottery production in Kasongan focused on making simple household products and toys. However, over time, this craft industry has experienced significant development by producing a variety of more complex and highly artistic home accessories. The main material of Kasongan pottery is clay, which is then processed through a firing technique at a certain temperature. The products produced are very diverse, such as jars, piggy banks, flower vases, and pots. Craftsmen in Kasongan use three main techniques in their production, namely printing, turning, and manual techniques, which allow them to create distinctive products, ranging from jars, pots or vases, loro blonyo statues, fountains, wuwung, to other ceramic products.



Figure 1 : Kasongan Pottery Products
Source : Researcher Observation.

Among these products, jars are in high demand due to their varied sizes, from small to adult shoulder-sized, and their unique natural finishing. This finishing highlights the natural color of the clay with a touch of paint that gives an original and authentic impression, typical of Kasongan. Jars with this natural finishing remain a favorite of tourists due to their long-lasting traditional image and varied color and motif choices.

Table 1. Product Differences and Market Segmentation in the Kasongan Pottery Industry

Businessman	Product	Market
Jambul Ceramic	Miniature Statues, souvenirs, vases, jars, tables and chairs	Global Market
Dwiyanto Ceramics	Jars, Chairs, Tables, Mortars, Pots, Miniature Statues	Global Market
Nagasakti Ceramics	Jars, Pots, Miniature Statues, Tables, Chairs, Cups, Jars	Global Market
Merajak Ceramics	Roof Tile Decoration	Domestic Market
Moko Ceramics	Pot, Mortar, Souvenir, Jug, Stove, Ashtray, Pencil Case	Domestic Market
Langgeng Ceramics	Pots, Souvenirs, Stoves, Jugs, Jars	Domestic Market
Jumiran Ceramics	Pot, Piggy Bank, Stove, Jug, Mortar	Domestic Market

Source : Research Results (2024)

The Kasongan ceramic industry produces various types of products including vases, jars, tables, chairs, pots, miniature statues, and pencil cases. Based on the segmentation of entrepreneurs, there are differences in market orientation. Industries such as Jambul Keramik, Dwiyanto Keramik, and Nagasakti Keramik tend to move towards the global market by prioritizing decorative and functional products. This means that the products sold are designed to meet aesthetic needs while having utility value in everyday life and functional products have the main purpose of meeting household equipment needs. Or in other words, the three stores have experienced digitalization developments in product design. Meanwhile, in Merajak Keramik, Moko Keramik, Langgeng Keramik and Jumiran Keramik focus distribution on the domestic market by producing traditional household equipment, such as stoves, jugs, and ashtrays. This illustrates the innovation capacity and competitiveness of Kasongan ceramics in both the domestic and global markets.

Since 1986, Kasongan ceramic products have successfully penetrated the international market, with export destinations including countries such as Europe, Japan, Australia, and Canada. Many international consumers not only buy directly on site, but also bring typical designs from their cultures, such as Buddha statues, Chinese soldier statues, and various unique pot and jar models. Adaptation to cross-cultural designs not only enriches product variety but also enhances global appreciation of the artistic value of Kasongan ceramics, while expanding its appeal in the world market.

In terms of price, Kasongan ceramic products are available in a variety of ranges, starting from IDR 5,000 for small souvenirs such as pencil cases, ashtrays, and candle holders, to millions of rupiah for products with a high level of complexity such as large ceramic jars. The price of the product is usually determined by the size, complexity of the design, and the type of finishing applied. With a budget of around IDR 100,000 to IDR 1,000,000, consumers can choose a variety of jars with attractive patterns and finishes, making them a highly artistic decoration option.

Equality, Regeneration of Kasongan Pottery Entrepreneurs in the Digital Era

Regeneration is a process of leadership transformation from the older generation to the younger generation with the aim of sustainability and growth of the company or organization. In the Big Indonesian Dictionary (KBBI), regeneration is defined as the process of replacing the old with the younger generation or known as rejuvenation. Komaruddin & Majdi (2021) states that regeneration comes from English, namely the word generate or generation. Generate means "to produce or create something," while generation refers to "all people born in the same time

period." When both words are given the prefix re-, the word regenerate is formed, which means "to make a region, institution, or other develop and become strong again."

In the regeneration of Kasongan pottery entrepreneurs face various challenges in the era of ever-growing digitalization. The importance of young regeneration is increasingly clear, given the increasing influence of digital factors on production methods, marketing, and interaction with consumers. Many pottery entrepreneurs who are the older generation are worried about the future of their crafts, especially since the younger generation tends to be less interested in continuing.

Lack of interest from the younger generation is one of the main obstacles in the pottery industry. Although they have great potential and a good understanding of digital technology, many prefer to look for work in other sectors that are considered more financially promising. This creates a gap in the regeneration of pottery entrepreneurs, where the knowledge and skills of the older generation cannot be passed on to the next generation.

Digitalization provides opportunities for pottery entrepreneurs to expand their market through online platforms and social media. Social media not only functions as a communication tool, but also as a means to build awareness of various issues in people's lives (Alif et al., 2023). But what happens in the field, many entrepreneurs are still trapped in traditional methods and have not fully utilized technology. The younger generation has the ability to create in a more modern way, combining local wisdom with digital technology.(Tanjung et al., 2024). Pottery entrepreneurs can attract the interest of the younger generation to get involved in the industry, they will not only get new workers but also innovative ideas that can help develop products and marketing strategies. Thus, effective regeneration will ensure the sustainability of the Kasongan pottery industry amidst increasingly complex global and local challenges.

Kasongan Entrepreneurs' Resistance to Digital Adaptation

The development of the digital era has become a significant challenge for Kasongan pottery entrepreneurs, especially in terms of product marketing. Rapid digitalization changes require entrepreneurs to adapt to various digital platforms in order to increase the visibility and competitiveness of their products. Although digitalization offers opportunities, many entrepreneurs are still constrained in optimizing social media as a marketing instrument. This is in accordance with what was conveyed by informant :

The development of the digital era actually has an impact on business, but it's complicated (informan 1, 08/10/2024).

The above statement is reinforced by other informants' statements as follows:

I am old-fashioned with the development of the digital era and cannot keep up with digital developments (informant 2, 08/10/2024).

Entrepreneurs realize that technological advances have a significant impact on increasing operational efficiency and marketing opportunities. With the rise of digital platforms, businesses can reach a wider market and interact directly with buyers through social media, thereby increasing their efficiency and productivity (Hisyam et al., 2024). However, behind this potential, entrepreneurs feel that the process of adapting to new digitalization is often considered complicated. Difficulty in understanding complex digital systems, along with the need to continue learning and adapting to rapid changes in the digital era, often become barriers for individuals in utilizing digitalization optimally. These obstacles can lead to an inability to keep up with the development of digitalization. Thus, the statements of Mrs. Sri and Mr. Selamat reflect the dilemma faced by many business actors in the digital era, where they must balance between taking advantage of new opportunities and overcoming emerging challenges.

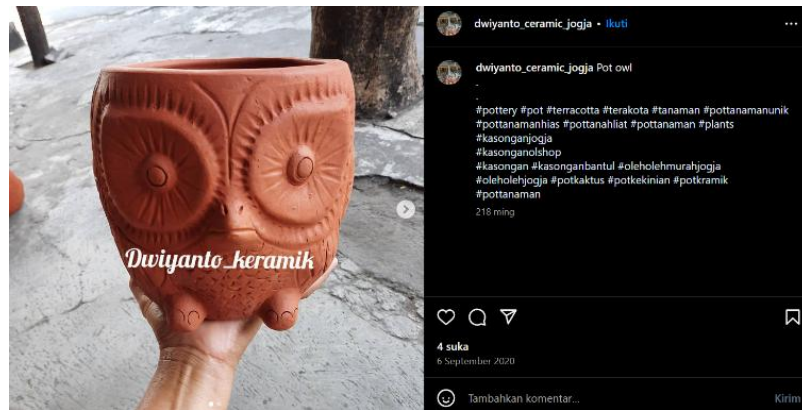


Figure 2 : Instagram@dwiyanto_ceramic_jogja

Source : https://www.instagram.com/dwiyanto_ceramic_jogja?igsh=OXF0Ym80b2luanh1

Most pottery entrepreneurs in Kasongan currently rely on the WhatsApp application as the main means to promote their products, especially through the story feature that allows them to reach customers. Lack of consistency and activeness in utilizing digital platforms, such as Instagram, to promote their products. For example, the account @dwiyanto_ceramic_jogja, which is one of the pottery traders from Kasongan, shows a lack of activity in posting promotional content, where the last upload was on September 6, 2020. This is because the owner finds it difficult and has no time to manage digital platforms. By not actively utilizing Instagram optimally, there is a risk of losing opportunities to expand a more competitive market. Instagram is not only a promotional tool, but also a means to tell the story behind the product and show the manufacturing process.



Figure 3 : Instagram@merajakkeramikkasongan

Source: https://www.instagram.com/p/DJarz1GP1xI/?img_index=1&igsh=dGlxcHB1ODFrBmQ1

Meanwhile, Mrajak Kramik has utilized the digital platforms Instagram and WhatsApp as educational tools. Mrajak Kramik actively shares educational content and the results of pottery-making training activities conducted by elementary, junior high and senior high school students. It shows how the utilization of digital technology can play a role in the process of cultural recognition efforts for the preservation of cultural values through relevant approaches.

Based on the results of interviews and analysis conducted by researchers, the average kasongan pottery entrepreneur cannot keep up with the adaptation of digital technology in

promoting his business. most entrepreneurs still maximize conventional methods such as word of mouth promotion and depend on visits from tourists. Meanwhile, digital platforms such as social media, online marketplaces, and personal websites have not been fully utilized.

The Impact of Kasongan Pottery Entrepreneurs in the Digital Era

In addition to WhatsApp and Instagram, Kasongan pottery can also utilize digital platforms such as Facebook and Youtube. Facebook has increased engagement between entrepreneurs, as a powerful promotional medium thanks to its Marketplace and Group features that are able to reach a wider audience (Dharmawan, 2024). On the other hand, Youtube also offers great potential for entrepreneurs in the form of video tutorials or product reviews to attract consumers (Saifulloh & Hariyanto, 2024). By effectively utilizing various digital platforms, Kasongan pottery entrepreneurs can create a broad marketing strategy, ultimately strengthening an innovative and competitive pottery craft center in the digital era. However, ignoring digitalization can have a significant impact on pottery entrepreneurs, especially in the face of intensifying competition and changing consumer behaviour. In the digital era with the rapid development of information and communication technology, businesses that do not adapt risk losing market share and relevance, while digital transformation that offers new opportunities also carries the risk of being left out of the workforce if they do not prepare for the future (Yunos & Din, 2019). Digitalization is not only a trend, but also a necessity for entrepreneurs to stay competitive and meet evolving consumer expectations (Navanti et al., 2024). In this context, consumers are increasingly relying on the internet as the main reference in searching for products and services.

To understand the impact of not following digitalization more transparently, by using SWOT analysis. According to Mashuri & Nurjannah (2020), explains that SWOT analysis aims to identify and evaluate strengths, weaknesses, opportunities and threats in a company. In this case, the researcher analyzed the impact of Kasongan pottery entrepreneurs adapting to the digital era.

Table 2. Analysis of the Condition of Kasongan Pottery Entrepreneurs

<i>Strengths</i>	<i>Weaknesses</i>	<i>Opportunities</i>	<i>Threats</i>
Kasongan pottery has products with high artistic and authentic value	Lack of promotional innovation in marketing	With digitalization, entrepreneurs can get lots of consumers	Without utilizing digital platforms, entrepreneurs can experience a decline in the market.
Manual manufacturing is more valuable and quality	Reliance on conventional sales	Collaborate with artists to create exclusive products	Consumers choose to shop online in the global economic era
Has a good reputation among local residents and tourist visitors	Lack of knowledge about marketing n digital	Customers can shop online easily	Limited information about Kasongan pottery products
cultural heritage passed down from generation to generation	No regeneration		

Source : Research Results, 2024

Kasongan pottery has great potential to continue to develop in the digital era. As a cultural heritage of high value, supported by the advantages of artistic value and product authenticity, manual manufacturing process, good reputation of the community and tourists and as a hereditary heritage. However, weaknesses such as lack of promotional innovation, dependence on conventional sales, limited digital marketing knowledge, and minimal regeneration are

challenges. This shows a real digital divide, which is not only caused by age or education, but also a lack of continuous training and mentoring. Therefore, initiative steps are taken through the use of digital technology, development of marketing skills, and regeneration of entrepreneurs to maintain the sustainability and competitiveness of Kasongan pottery entrepreneurs amidst the development of the digital era.

CONCLUSION

This study emphasises the complicated reality of digital adaption in the traditional Kasongan pottery sector. Although the study is based on a cultural-economic communication paradigm, the findings indicate that the trajectory of digitalisation in Kasongan is shaped less by theoretical models and more by practical challenges, particularly in generational transitions, digital literacy gaps, and technological resistance.

The findings reveal that, while digitisation has the potential to expand markets and revitalise brands, its implementation is fragmented due to a lack of organised assistance and uneven digital expertise among business actors. As a result, the link between the original study question—about how digitisation is managed and experienced—and the findings might be strengthened by emphasising both structural and agency-based impediments to digital adoption.

To solve these problems, future efforts should prioritise community-based digital literacy campaigns, mentorship programs that connect younger digital natives with senior craftsmen, and cross-sectoral collaboration among universities, governments, and creative sectors. These approaches can help to ensure that digitisation not only transforms marketing strategies, but also preserves the cultural and economic legacy of Kasongan pottery in the digital age.

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