

Women entrepreneurs in the craft industry: a case study of the batik industry during the COVID-19 pandemic

Women
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Grisna Anggadwita

*Faculty of Economics and Business, Universitas Gadjah Mada,
Yogyakarta, Indonesia and*

School of Economics and Business, Telkom University, Bandung, Indonesia

Nurul Indarti

*Department of Management, Faculty of Economics and Business,
Universitas Gadjah Mada, Yogyakarta, Indonesia, and*

Vanessa Ratten

La Trobe University, Melbourne, Australia

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Abstract

Purpose – Batik is a craft in the creative industry, which is the identity of the Indonesian nation. One of the main batik tourism areas in Indonesia is Trusmi, and women entrepreneurs have a strategic role in developing the batik craft industry in the region. The batik industry faced various challenges during coronavirus disease 2019 (COVID-19). Therefore, this study aims to explore the impact and identify strategic options during the COVID-19 period on batik businesses owned by women entrepreneurs in the Trusmi area.

Design/methodology/approach – This study uses a qualitative case study method by interviewing ten batik women entrepreneurs in the Trusmi area.

Findings – This study elaborates findings about the impact of COVID-19, the technology role, collaboration, the government role and strategic options.

Originality/value – This study provides academic and practical implications, which are discussed further about the role of the craft industry in dealing with economic and social turmoil.

Keywords Batik industry, COVID-19 entrepreneurship, Craft industry, Cultural heritage, Trusmi, Women entrepreneur, Craft entrepreneurship, Artisan entrepreneurship

Paper type Research paper

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has caused shocks in various economic sectors and created conditions never imagined by almost all countries worldwide. The handicraft industry is one of the sectors affected by the COVID-19 pandemic, forcing handicraft makers to find a strategy to survive and continue their business (Schroeder, 2022). The batik industry is one of the sectors that are prioritized for development by the Indonesian Ministry of Industry because it is considered to be contributing to the national economy through its cultural and heritage connection (Ratten, 2021). Batik can be defined as a work of art that is applied by drawing designs on the fabric using wax to create dots and lines, which are resistant to dyes (Indonesian, Ministry of Industry, 2021).

Batik is well known as an art and cultural heritage representing Indonesia's national identity (Gunawan *et al.*, 2022). In 2009, United Nations Educational, Scientific and Cultural Organization (UNESCO) designated Indonesian Batik as an Intangible Cultural Heritage of Humanity, which further cemented its important position in Indonesian society (UNESCO, 2009). Batik is considered to have many roles in the lives of Indonesian people; it is used not



only as daily clothing but also in professional environments such as business and academics as formal wear and is used in wedding ceremonies, pregnancy celebrations, art performances and other ritual events. Batik is also considered an artistic work that records the history of interactions between the people of the Indonesian archipelago and other nations.

Based on data from the [Center for Batik Crafts \(BBKB, 2022\)](#), the number of registered batik industries in Indonesia is 3,159 business units, consisting of 208 large-medium-scale batik industries (in 2021) and 2,951 micro, small and medium scale (in 2018). The batik industry has absorbed 200 thousand workers from 47 thousand business units spread across 101 regional centers of Indonesia ([Indonesian Ministry of Industry, 2021](#)), most of which are concentrated in several cities such as Cirebon, Yogyakarta, Pekalongan and Surakarta. The Trusmi area is the center of the batik industry in Cirebon, with over 3,000 artisans. Cirebon has the characteristic of Batik with a mega mendung motif, a cloud-shaped motif that is an acculturation of Cirebon and Chinese cultures. The Trusmi batik area has excellent potential to be developed as cultural tourism and education tourism area due to the existence of this area as a batik producer since the 14th century. The people in the Trusmi area are not just looking for income from producing batik but it has become part of their customs, culture and lifestyle.

Women entrepreneurs have entered various economic sectors ([Strawser et al., 2021](#)), including the batik industry in Indonesia, dominated by women as batik craftsmen ([European Commission, 2022](#)). The development of women entrepreneurs in developing countries, including Indonesia, has the potential to become the primary driver of empowering women and social transformation, which in turn has a positive impact on the level of the country's economy ([Koeswandi et al., 2021](#)). The creation of women entrepreneurs contributes to the growth of micro, small and medium enterprises (MSMEs), increases gross domestic product (GDP) and generates sustainable economic growth ([Anggadwita et al., 2017](#)). [Ratten \(2016a\)](#) suggests that women entrepreneurs are influenced by customer knowledge, risk aversion, polychronic and collectivism when deciding to start an informal business. In addition, women entrepreneurs have several inherent characteristics when taking advantage of opportunities to create value in the economic system ([Ramadani et al., 2013](#)), including motivation to achieve performance, followed by affiliation, autonomy and dominance ([Indarti and Wulandaru, 2003](#)). One study by [Indarti et al. \(2019\)](#) on women participation in economic sector found that women face some structural problems such as perceptions of roles between husband (as decision maker) and wife (as primary caregiver), complexities in accessing financial options, mobility challenges and societal norms challenges concerning women's roles.

The majority of batik makers are women, so the batik industry has been viewed as a way to empower women ([Ratten, 2016b](#)). As batik is viewed as a cultural asset in Indonesia it is a way for women to display their cultural heritage and skill ([Purwaningrum et al., 2022](#)). The making of batik is a life philosophy of many Indonesian women who are taught the skill from an early age ([Ratten, 2021](#)). It provides a way for women to earn an income and promotes strong community involvement with other batik makers. The position of a batik maker is considered prestigious in society compared to other labor market positions, therefore, elevates the status of women in the workforce ([Akhir et al., 2015](#)). More women are opening or managing their own batik companies that further facilitate the economic development of women.

According to the [Indonesian Ministry of Industry \(2021\)](#), the handicraft and batik industry is one sector that can adapt and innovate amid the impact of the COVID-19 pandemic so that it can survive and even support the national economic recovery. However, the COVID-19 pandemic continues to impact the industry and presents various challenges. Data from the [Center for Batik Crafts \(BBKB, 2022\)](#) notes that the value of Indonesian batik exports has decreased in recent years due to the COVID-19 pandemic. Batik exports in 2020 were recorded at US\$ 532.7 million, a decrease of 31.3%, with a batik volume of 23.1 million tons, a decrease of 28.8% from the previous year. [Rachmawati et al. \(2022\)](#) conducted a study on Pekalongan batik SMEs. They found several obstacles during the COVID-19 pandemic, including reduced consumer demand,

lack of professional assistance, obstacles to business financial management and motivational constraints always to be consistent in entrepreneurship.

Anggadwita *et al.* (2022) revealed that women entrepreneurs have the initiative in dealing with the COVID-19 pandemic to develop and implement resilience in family businesses. In addition, Gunawan *et al.* (2022) revealed that Indonesian women appear to be more willing or able to deal with uncertainty during the pandemic compared to their male counterparts. Women entrepreneurs also have a choice of strategies for maintaining their businesses. According to Lukito-Budi *et al.* (2022), the environmental shock due to COVID-19 reflects the business model, which consists of radical changes involving high social contacts and gradual changes involving low social contacts. Lukito-Budi *et al.* (2022) proposed a conceptual framework in four strategic options in responding to COVID-19 consisting of a reactor (abandon or collapse), defender (exploitative innovation), prospector (exploratory innovation) and analyzer (organization ambidexterity).

This study aims to answer research questions: (1) What is the impact of digital technology, collaboration partners and the government policies on the batik industry? (2) What is the perception of women entrepreneurs in viewing batik as a regional heritage/reputation? (3) What are the strategic options used by batik women entrepreneurs in maintaining their businesses during the COVID-19 pandemic? This study uses a qualitative method by interviewing ten women entrepreneurs in the batik industry in the Trusmi Region, Cirebon, Indonesia. This study contributes in several aspects to the craft entrepreneurship literature, including adding insight into the role of women entrepreneurs in the batik industry, providing reference guidelines for policymakers for the strategy and development of the batik industry in the post-COVID-19 period and empowering women entrepreneurs as an effort to increase women's participation in economic activities, especially by carrying the nation's cultural mission to preserve the art of batik.

2. Literature review

2.1 Craft entrepreneurship and women's entrepreneurship

Craft enterprises are sometimes referred to as handicraft or artisan enterprises due to the emphasis on handmade products and services (Naudin and Patel, 2020; Sasaki *et al.*, 2019). Craft enterprises include some kind of handicraft due to the emphasis on individual interaction with the product being made. Meera and Vinodan (2022, p. 2) define a handicraft as "those items possessing clear artistic value or those with demonstrated export success, including any occupation that involves manual labor, tie-dyed textiles, block-printed textiles, embroidered textiles, hand-knotted carpets, engraved metalware, stone and wood carving, woolen pile carpets and fine handloom weaving". There is an abundance of craft enterprises in the global economy and they contribute to economic growth and development by linking business activity to cultural ideas (Purnomo, 2020).

Craft enterprises are a subsector of the arts and creative industries although are one of the more dominant industry segments (Hill, 2020). Craft entrepreneurs is a label to describe people who make products or services to sell through manual labor. Bell *et al.* (2018) suggest that craft workers are entrepreneurial due to their emphasis on adaptability, flexibility and imagination. Often they are entrepreneurial with support from technology or other individuals but the emphasis is on individual handmade objects (Kaya and Yagiz, 2011). This means there is a high degree of individuality in each product made that differentiates them from mass made products (Adamson, 2018). Sasaki, Nummela and Ravasi found that cultural heritage is important in Japanese craft firms due to the emphasis on authenticity and cultural connection. Thus, there is an expectation that each craft product will be authentic and contain some degree of craftsmanship in terms of linking the product to the craftsman (Fillis, 2004). Authenticity in terms of authentication and identity are key elements of any craft product (Chandna and Salimath, 2020). O'Flynn (2021) found that authenticity in artisans such as craft makers is evident in their individuality and sense of style.

Much of the literature on craft entrepreneurship tends to come from developing countries and emerging economies due to the emphasis on handicrafts in society. [Ratten \(2016b\)](#) suggested that this is due to the high number of craft entrepreneurs in sectors such as the batik industry being based in developing and emerging economies. Moreover, the research on craft entrepreneurship in developed countries tends to focus more on popular topics such as craft beer rather than on typical types of handicrafts. Thus, research on craft entrepreneurship is underdeveloped compared to other areas of entrepreneurship research ([Rashid and Ratten, 2021](#)). This means there is a need to study in more depth craft entrepreneurship and the role of gender and heritage in its development. [Kroezen et al. \(2021\)](#) found that craftspeople are naturally entrepreneurial due to their ability to utilize existing resources through their creative skills. Even though the practice of craft entrepreneurship has been around for a long time, other forms of entrepreneurship such as social and community have become more popular in the entrepreneurship literature ([Ratten, 2022a](#)). This will change in the future due to resurgence in interest in craft-based industries particularly those that flourished during the COVID-19 pandemic ([Ratten, 2022b](#)). This is particularly relevant for women entrepreneurs who utilized craft entrepreneurship during the COVID-19 pandemic as a source of income during working from home and physical distancing requirements.

There has been a significant growth globally in women entrepreneurs due to women being able to focus more on innovative business endeavors and changing societal expectations regarding the role of women in the workplace. Despite this global change, research on women entrepreneurship in Indonesia has not kept pace with developments. The COVID-19 pandemic further changed the economic landscape with decreased tourist rates affecting craft industries that are reliant on tourism. Due to social distancing requirements and a need to isolate in countries where the spread of the virus influenced high density areas, craft industries as both a business and hobby increased. These developments have entrepreneurship implications and it is thus timely to examine the role of women entrepreneurship in the craft industry during the COVID-19 pandemic.

Entrepreneurship generally refers to any type of innovative and risk-taking business activity. Although a broader view of entrepreneurship that includes a mindset rather than just a business activity emerged in recent years. This is due to the realization that entrepreneurship can take a variety of forms and is context dependent. [Cooke and Xiao \(2021, p. 105\)](#) define entrepreneurship in a holistic way by stating it as “the ability and motivation to start, develop and organize a business with a high level of risks”. This definition emphasizes the broad view that entrepreneurship needs to include some kind of creative thinking. Therefore, it differs to other types of business activity due to its focus on strategy and opportunity seeking activity. Women entrepreneurs are female individuals who take part in innovative business activity ([Minniti and Naudé, 2010](#)). Increasingly women are engaging in entrepreneurship in order to solve social problems through innovative thinking ([Ojong et al., 2021](#)). This means addressing market needs that are not currently being met by existing market systems.

The Individual Differences Theory and Gender and Information Technology (IDTGIT) is a theory used to understand the role of gender and information technology in society. It has previously been utilized by [Suseno and Abbott \(2021\)](#) to investigate women’s entrepreneurship and, therefore, is relevant in this study. The IDTGIT highlights how women entrepreneurs utilize technology to create business opportunities. Increasingly digital technology is required in the business environment in order to respond to customer needs. This was particularly evident in the COVID-19 pandemic when email, video conferencing, social networks and website usage were the dominate communication methods. The IDTGIT has been used to understand the specific experiences of women based on their gender ([Quesenberry and Trauth, 2012](#)). This means it combines diversity thinking with technology usage by implying there are gender differences in society.

Information technology has removed traditional barriers such as having financial capital to being an entrepreneur. It has helped women entrepreneurs access customers and compete in the marketplace. Previous research has utilized the IDTGIT to understand women's use of technology. For example, [Suseno and Abbott \(2021\)](#) in a study of 17 women entrepreneurs in Australia used it to understanding the role of digital social innovation. [Annabi and Lebovitz \(2018\)](#) found that women's experiences are influenced by information technology (IT) workplace barriers. [Trauth *et al.* \(2008\)](#) found that female IT professionals are influenced by cultural factors. All of these studies indicate that the IDTGIT is a useful way to understanding how women entrepreneurs utilize digital technology. In our study, we broaden the context of the IDTGIT to include a crisis perspective stemming from the COVID-19 pandemic. By doing so it incorporates a new way of understanding how technology can be utilized by women during times of crisis. This helps in explaining the role of female entrepreneurs in the management of business in terms of expectations and realities ([McGowan *et al.*, 2012](#)).

3. Methodology

This research uses a qualitative design with multiple-case studies approach to understand the phenomena that occur in real life in depth, namely women entrepreneurs in the craft industry in the face of the COVID-19 pandemic and developing the potential of batik as a cultural heritage in improving the local economy, in Indonesia ([Creswell and Poth, 2018](#); [Yin, 2018](#)). According to [Dana and Dana \(2005\)](#), qualitative designs allow the direct interaction of researchers with research subjects, thus avoiding bias during the interview process.

Ten women batik entrepreneurs from the Trusmi region, Cirebon, Indonesia, participated in this study. Trusmi Cirebon batik is one of the famous batiks in Indonesia and this popularity has earned the area the nickname Trusmi Batik Village. Trusmi Batik Village is the heart of Cirebon batik production, located in the Cirebon Regency area about five kilometers from the city center of Cirebon. Characteristics of Trusmi Cirebon Batik are generally divided into two motifs ([Laily, 2021](#)). First, the palace motifs are taken from the palace ornaments, both from building elements and objects around the palace. Another motif is a coastal motif that displays flora and fauna from land and sea. The characteristics of Cirebon batik compared to batik production from other regions are as follows: Wadatan motif (rocks) in traditional classical designs and cloud-shaped ornaments (mega) on parts that are adapted to the central motif ([Laily, 2021](#)). The Cirebon batik process blocks areas using particular canting (canting walls).

This research is based on the social context; therefore, data were collected from field observations and in-depth interviews with ten batik women entrepreneurs. This study uses a snowball sampling technique, where the respondents are based on recommendations from the association of batik Trusmi entrepreneurs. We contacted the respondents to ask for their consent to the interview and arranged the interview time based on a mutually convenient time. Based on the agreement with the respondents, the names displayed in this study only use their initials.

We conducted semi-structured interviews in Indonesian to allow further exploration of the research questions we posed. Structured and open-ended questions were used as the primary data collection instrument. Interviews were conducted face-to-face with each informant, with interview duration of about 45–60 min for each informant. Interviews were conducted in Indonesian. Some interviews were recorded with the respondents' permission, but two objected, so we used notes to capture their responses to the interview questions. The respondents' interviews lasted from September 6 to October 13, 2022.

The interview recordings were then transcribed and verified by the researcher. The researchers coded the transcripts following the method [Yin \(1992\)](#) and [Miles and Huberman \(1994\)](#) described. The results of this transcription allowed us to re-examine the data to improve

the consistency and reliability of the interview results. In addition, to ensure the validity/credibility of the data, this study uses source triangulation by comparing information from one respondent with other respondents using the same data collection technique.

The interview is divided into six parts. In the first part of the interview, participants were asked to provide their personal information and business profile. In the second part of the interview, each participant was asked to give a brief history of her business and explain why she decided to start her own business, what problems she faced in the early stages and what she loves most about doing business. In the third part of the interview, each participant provided information about the impact of COVID-19 on their business and the challenges and obstacles experienced in running a business during the pandemic. In part four of the interview, each participant explained the role of digital technology during COVID-19 and how they used digital tools to maintain and continue their business. In the fifth part of the interview, the participants explained how they viewed partner collaboration and building collaboration, the government's role in the batik industry and the support provided during the COVID-19 pandemic. Finally, each entrepreneur was asked for their perspective on the local cultural heritage and how they preserve the local culture in their batik business.

Each female entrepreneur was studied independently using a case study processing technique based on [Miles et al. \(2014\)](#), namely (1) information on different arrangements was set, (2) a matrix or category was made and evidence was also added in that category, (3) data and events were displayed and tabulated by testing the complexity of the tabulation and (4) information in chronological order was compiled. During the procedure, we conducted content analysis to interpret the contents of the data through a systematic classification process from coding and identifying, summarizing and classifying themes or patterns into several categories that represent the same meaning ([Creswell and Poth, 2018](#); [Miles et al., 2014](#)).

4. Result

4.1 Profiles of informants

Demographic information of the entrepreneurs interviewed is presented in [Table 1](#). The names of women entrepreneurs who participated in this study have been changed to their initials to protect their anonymity (see [Table 1](#) for a summary of demographic information consisting of personal information and business profiles).

The entrepreneurial women in this study were in the age range of 40–60 years and there was an entrepreneurial woman (LIA) at the age of 39 years. All women entrepreneurs are married, with the majority having two children and US has the most with seven children. In addition, almost all husbands of women entrepreneurs are entrepreneurs/self-employments, with several women entrepreneurs revealing that they built this business together with their husbands, and several others revealed that their husbands have different business fields from the batik business they currently manage. Only husbands of YA have employment status as civil servants. All the women entrepreneurs in the Trusmi area are very well educated, namely, high school, diploma and bachelor's degrees. Only NF had education up to elementary school.

Based on the profile of the batik business owned by women entrepreneurs, almost all said that their business had been established for more than ten years and survived until now. Meanwhile, only NF established a business for <10 years in 2015. The number of employees owned by women entrepreneurs also varies, with the majority of employees, i.e. 1–3 people. Some women entrepreneurs employ 36 people (YA), 34 people (TL), 20 people (US) and 14 people (RI). Most women entrepreneurs revealed that their business's estimated turnover per year is 300m–2.5bn. Meanwhile, women entrepreneurs who have a turnover per year of <300 million are HK, NL and NF.

Initial name	Age (Years old)	Personal information			Business profile		
		Marital status and children	Husband's job	Education background	Year established	Total employee	Turnover per year
HK	41	Married and 2 children	Entrepreneur/ Self-employment	Diploma	2002	2	<300 million
NL	45	Married and 4 children	Entrepreneur/ Self-employment	Bachelor	2011	2	<300 million
TL	47	Married and 3 children	Entrepreneur/ Self-employment	Diploma	2002	34	300 million–2.5 billion
YA	60	Married and 4 children	Civil Servant	Senior high school	1997	36	300 million–2.5 billion
LF	40	Married and 2 children	Entrepreneur/ Self-employment	Bachelor	2005	3	300 million–2.5 billion
LIA	39	Married and 2 children	Entrepreneur/ Self-employment	Bachelor	2008	2	300 million–2.5 billion
RI	49	Married and 2 children	Entrepreneur/ Self-employment	Senior high school	1997	14	300 million–2.5 billion
AS	56	Married and 7 children	Entrepreneur/ Self-employment	Senior high school	2004	20	300 million–2.5 billion
NF	43	Married and 2 children	Entrepreneur/ Self-employment	Primary school	2015	1	<300 million
HA	46	Married and 2 children	Entrepreneur/ Self-employment	Diploma	1999	1	300 million–2.5 billion

Table 1.
Profiles of informants

The interview results show that the batik businesses owned by the majority of women entrepreneurs are their own businesses, except for YA and LF, which are family businesses. However, some of them (HK, RI and US) revealed that they set up a business because they learned from their parents, entrepreneurs in different business fields. Almost all women entrepreneurs experience capital, competition and time management challenges in running their businesses. In addition, some women also revealed that their goal of becoming an entrepreneur is to balance family work (HK, LF, AS and NF).

4.2 The impact of COVID-19 on the batik industry in Indonesia

Batik women entrepreneurs in the Trusmi area experienced a significant impact during the COVID-19 pandemic; as stated by NL that the batik business was greatly affected because the business was not a primary need, so every consumer was more focused on meeting their primary needs first. The most significant impact experienced by all women entrepreneurs was a drastic decline in sales, which forced some of them to reduce employees, as stated by HK: “. . . When there was no income at all, we reduced employees. Previously, the total number of employees was five, and now there are only two”. Like HK, several women entrepreneurs, namely LF, NF and HA, decided to reduce the number of employees. The artisans who

work for these entrepreneurs are also forced to lose their income because there are no incoming orders.

The Trusmi area is one of the largest batik shopping tourist areas in Cirebon, West Java, Indonesia. The COVID-19 pandemic, which lasted more than two years, resulted in a drastic decrease in tourist visits, ultimately decreasing the number of consumer visits to batik shops. Most women entrepreneurs revealed that their shops were deserted from consumer visits and had to be closed due to government policies imposing mobility restrictions. RI revealed that *“... During the pandemic, many shops were closed (closed) ... the purchases were drastically reduced”*. TL and LF also revealed that their shops had closed for a few months due to mobility restrictions.

Several women entrepreneurs such as LF, AS and NF also complained about the buildup of product stock at the beginning of the COVID-19 pandemic in 2020. LF revealed that: *“... COVID-19 affects inventory stock because we have produced quite a lot at the beginning of the pandemic. Then there was a sudden pandemic, so the stock was a bit piled up then; in 2020, people are still terrified to travel and meet other people, so there are a lot of Batik in stock, but no one buys it”*.

TL took this further by innovating a mask-making product with batik cloth. TL reveals that:

... at that time, we switched to selling masks ... We gave the mega cloud for masks, so the sewing production continued ... It was pretty good, thank God, there were many orders ... we got orders for up to 3,000 pcs because at that time people needed masks ...

Based on the results of interviews with respondents, it can be concluded that COVID-19 has had a significant impact on the batik industry in the Trusmi Region, including decreased sales, reduction of employees, drastic reduction in the number of consumer visits, stock accumulation, restrictions on access to mobility (stores closed) and the emergence of innovations.

4.3 The role of digital technology during the COVID-19 pandemic

During the COVID-19 pandemic, all female entrepreneurs turned to sell online. They use social media and marketing platforms to market their business. HK revealed that *“... we do not have any income ... we do not have consumers either, so during COVID, we want to or not have to sell online ... If we do not go online, we may not have any income from the store”*.

The most widely used social media by women entrepreneurs are Instagram and Facebook. Some women entrepreneurs only rely on WhatsApp to market their products by including a picture of their product in their WhatsApp status, as did LF, YES, NF and HA. YA revealed that *“Indeed, since before the pandemic, many customers have ordered online via WhatsApp. I do not have to come to their house; they know my products when I promote through status”*. The market platforms used by women entrepreneurs are Shopee and Tokopedia as revealed by LF that her online sales channels are Shopee, Tokopedia and WhatsApp.

The women entrepreneurs also revealed some challenges they experienced during online sales. However, two women entrepreneurs had used technology media in marketing their batik business, namely LF and NF, so they felt they had no problems using the technology media. AS faced the challenge of not understanding how to sell online, but her children and employees helped her; she had difficulty building consumer trust through online sales (HK and NF), signal constraints (HK), price competition (US and NF), photo lighting techniques (YES) and the challenges of studying online media (LIA, LF and NF).

4.4 Partner collaboration and the role of government

Batik women entrepreneurs in the Trusmi area collaborate with other batik entrepreneurs. Some of them revealed:

... we complement each other ... products that we do not have, we borrow from other shops ... So we just help each other ... (HK)

... so, sometimes fellow shops share information about the motifs needed by consumers ... or I order to other stores for special motifs that are in their stores to be sold in my shop. (NL)

The women entrepreneurs collaborated with the same batik artisans as their competitors. YA said, "... *there is no collaboration between shops, but with craftsmen ...*" However, the batik craftsmen will professionally present different batik patterns for each business; AS revealed that "... *every shop has its characteristics ...*".

Women entrepreneurs in the Trusmi batik area also cooperate with banks. TL revealed that "... we cooperate with banks because we need EDC procurement for transactions, making it easier for customers to make payments".

Based on the results of interviews with women entrepreneurs regarding the role of the government, it was found that the government did not play a significant role in overcoming the problems of batik entrepreneurs in the Trusmi area during the pandemic. Some of them do not receive assistance directly from the government. However, NL revealed that "... *government assistance may be available, such as the provision of funds every three months for employees that are transferred directly to their accounts, and necessities. However, I did not get it*". In addition, YA also revealed that the government plays a role in providing online training. However, she considered the training to be less effective, "*I have participated, in the form of online training ... for batik, if it is just theory, it is lacking, except with practice ... if it is just packaging training, it is easy, we just have to find a way through a Google search*".

Other findings also show that some women entrepreneurs participate in business development activities from companies, as stated by NL "... *I joined the guidance of a state-owned company in January 2022. Someone invited me ... we were borrowed capital, with a return to pay in installments, and that is very helpful because the interest margin is small compared to borrowing from a bank or other funding*".

4.5 Industrial batik as a regional heritage/reputation

Batik is a cultural heritage attached to the people of Indonesia. Each region in Indonesia has different batik patterns and characteristics, such as the Trusmi Cirebon area with the Mega Mendung motif, the Tujuh Rupa motif from Pekalongan, the Sogan motif from Solo, the Gentongan motif from Madura, the Kraton motif from Yogyakarta, the Simbut motif from Banten and several other motifs batik in other areas of Indonesia. All women entrepreneurs in this study understand that batik is Indonesia's cultural heritage. According to HK: "... *batik is inherited from our ancestors and has been ingrained; we just have to continue ...*". YA added that "... *Trusmi batik is Cirebon's cultural heritage because it is a legend, so we must continue batik culture ...*"

As a cultural heritage, batik is also a work of art that can encourage innovation and creativity. NL revealed that "... *batik can bring out creativity, craftsmen innovate by changing motifs, but sometimes modifying them so that classic motifs are added to modern batik motifs*".

Almost all female entrepreneurs know about the origin of the Trusmi region as a batik tourism area, so it is known as Trusmi batik. LF explained that "... *in Trusmi there is a great-grandmother of Trusmi ... who taught Batik to the residents here from the past, and the Cirebon palace liked the Trusmi batik, in the end, it was passed down from generation to generation. So that is how many people here are finally able to make Batik from the past*". HA also explained that "*actually, Trusmi is a regional name, yes a village name, well, our great-grandmother used to be a craftsman in the Trusmi area, but now she has passed away ... Most batik artisans live in the Trusmi area; the craftsmen are good at making Batik ...*"

4.6 Identification of strategy options for batik women entrepreneurs

We use the framework of [Lukito-Budi et al. \(2022\)](#) in identifying the strategic options of batik women entrepreneurs consisting of (1) defender–exploitative innovation; (2) analyzer–organizational ambidexterity; (3) prospector–exploratory innovation and (4) reactor–abandon or shut down the business. These four strategic options reflect the requirement for an entrepreneurial orientation, i.e. innovativeness, proactivity and risk-taking, as enabling variables ([Lukito-Budi et al., 2022](#)).

The reactor strategy is a residual or end-game plan and closing the firm must be considered an option ([Lukito-Budi et al., 2022](#)). This method is ineffective and lacks the vitality to address environmental changes ([Parnell and Wright, 1993](#)). The defender strategy encourages small and medium enterprise (SME) owners to focus inward to increase efficiency and prevent risk ([Lukito-Budi et al., 2022](#)). Analyzing strategies allows SMEs to function efficiently within their present enterprises and innovate in response to market circumstances, such as by modifying their business models or adopting digital technology ([Papadopoulos et al., 2020](#); [Seetharaman, 2020](#)). This approach is often called organizational ambidexterity ([Papadopoulos et al., 2020](#)). On the other hand, the prospector strategy focuses on exploratory innovation by monitoring emerging business trends, developing new firms and aggressively networking with various partners to discover new resources and opportunities ([Thorgren and Williams, 2020](#)).

The study results indicate that women entrepreneurs have a high entrepreneurial orientation by proactively seeking new opportunities and taking risks strategic options by women entrepreneurs to survive during COVID-19. The results show four women entrepreneurs (TL, HK, NL and LIA) have prospector and analyzer strategies to explore innovations and utilize technology to survive their businesses. Women entrepreneurs take risks by creating creativity and innovation in their businesses ([Mathew, 2010](#)); for example, TL switched to producing masks with batik motifs during the COVID-19 pandemic. In addition, they also build collaborations with partners, both with artisans and competitors. Meanwhile, six women entrepreneurs (YA, LF, RI, AS, NF and HA) focused on online selling to earn income. Some are creative with photo lighting techniques to display their products on social media, which aims to attract consumers to buy.

5. Discussion

Our findings offer two main contributions to the craft and women entrepreneurship literature. First, the findings suggest that the craft industry responded to the COVID-19 pandemic by using more digital technology. Second, women batik entrepreneurs utilized digital technology in order to maintain their livelihood during the pandemic. Due to a lack of government help during the COVID-19 pandemic, women craft entrepreneurs relied on family and regional heritage to create new products. Each of these contributions will now be discussed in relation to the existing literature.

5.1 COVID-19 and craft entrepreneurship

The COVID-19 pandemic had a profound effect on the global economy but particularly for the craft industry that is often a social and community activity. The findings suggest that the women batik entrepreneurs continuously adapted to the new environmental demands necessitated by the COVID-19 pandemic. This included quickly shifting to digital platforms in order to access customers. By doing so the craft entrepreneurs showed a resilient and adaptable nature in terms of their entrepreneurial personality ([Ocejo, 2017](#)). Past research on craft work has indicated that craft workers are adaptable and imaginative due to the type of work they do ([Bell et al., 2018, 2021](#)). For example, [Sasaki et al. \(2021\)](#) in a study of Japanese craft firms found that cultural specificity as well as craftsperson skills

influences performance. Social support from their family helped them in this regard but it was more their creative nature being part of the craft industry that helped them adapt (Pret and Cogan, 2019). This finding indicates that craftspeople more so than other types of occupations have a natural entrepreneurial spirit, which enables them to forge ahead in difficult market circumstances. This finding supports research by O'Flynn (2021) in a study of the artisan food producer who found that industry context such as tourism and the individual artisan influences their success. In addition, previous research by Aidis *et al.* (2007) recognized the way female entrepreneurs is complex market environments such as transition economies can succeed.

To date, much of the COVID-19 research has focused on work/life balance and neglected the role of entrepreneurial occupations such as being a craft maker. Therefore, this study offers a new way of analyzing the relationship between COVID-19 and craft entrepreneurship. Previous research by Stinchfield *et al.* (2013) found that art, craft and brokerage in the form of networking is important to firms learning from craft-based entrepreneurship. We highlight that the effects of the COVID-19 pandemic need to be understood in relation to the level of creativity evident in an industry. Artistic nature is essential in the craft industry and it is this capability that enables craft entrepreneurs to change based on market needs.

5.2 *Digital technology and women entrepreneurship*

The findings of this study demonstrate the need for women entrepreneurs to use digital technology. In doing so, the study highlights the relationship between digital technology and market performance during crisis times. Our results indicate that women entrepreneurs can overcome market barriers but investing time and effort in learning about digital technology. This supports previous research by Camacho and Barrios (2021) who found that there are social commerce affordances for female entrepreneurs who utilize technology. Previous research acknowledges the link between digital social innovation and women's entrepreneurship (Suseno and Abbott, 2021), but this study has gone further by linking it to craft forms of women's entrepreneurship. Brush and Cooper (2012) suggest that female entrepreneurs have specific behavioral traits such as being community minded that enable them to deal with market pressures. The participants of this study were all women craft entrepreneurs, so the IDTGIT theory was utilized as a way of explaining digital entrepreneurship amongst women craft entrepreneurs. Estrin and Mickiewicz (2011) highlighted how female entrepreneurship needs to be understood in light of institutional restrictions, so the addition of digital forms of entrepreneurship can overcome institutional barriers. The findings revealed that the women craft entrepreneurs were active users of digital technology. Kroezen *et al.* (2021) suggest that craftspeople are adapting to new market conditions by reconfiguring how they organize work. In addition, women entrepreneurs are constrained by culture and social expectations (Goby and Eroglu, 2011) so the use of digital technology can help them overcome disadvantages.

Within the context of craft entrepreneurship digital forms of entrepreneurship during the COVID-19 pandemic have not been significantly examined. Whilst research by Tambat and Joshi (2017) suggest the need to incorporate new types of innovation within craft entrepreneurship, research has not kept up to date with technology trends. Our findings highlight that digital entrepreneurship plays a key role in ensuring the success of craft entrepreneurship. By doing so, we highlight the dynamic nature of the craft industry by extending the IDTGIT to a new context. Tanushree (2015) in a study of handloom weavers in India found that traditional practices are being influenced by new technology. As digital platforms such as Etsy that focuses on craft products, this research contributes to practice on the use of digital platforms in crisis times. As Tiwari and Korneliusen (2022) highlight there

is a need for new ways of thinking about artisanal firms that are in the craft industry. Furthermore, by focusing on women entrepreneurship we extend the current digital platform research to more of a gender perspective. This is important as the craft industry is dominated by women craft makers and has specific gender roles (Kuhn and Galloway, 2015). This supports previous research by Kobeissi (2010) who found that there are gender factors influencing entrepreneurship. Moreover, Thurnell-Read (2021) found that whilst family influences craft entrepreneurship there are also technology trends influencing the craft industry. Therefore, by combining the digital, craft and women's entrepreneurship literature we make a transdisciplinary contribution to the general entrepreneurship literature. This is a much needed due to the reliance on silos in most of the entrepreneurship literature and the emphasis by Ughetto *et al.* (2020) on linking female entrepreneurship to digital technologies. As Marlow *et al.* (2008) pointed out, female entrepreneurship is different in each country and needs to be contextualized.

Whilst there is interdisciplinary work that is evident in women's entrepreneurship (Yadav and Unni, 2016; Yetim, 2008), much of the craft entrepreneurship research tends to still focus on the arts sector neglecting the technological changes evident in artisan and craft industries. Our findings emphasize the interactivity of the craft industry lies at the heart of its distinctiveness and this factor has been overlooked in terms of placing not enough emphasis on digital technology. Thus, our study has addressed this gap and extended current research to a more digitally relevant perspective. This can help with promoting female entrepreneurship based on public policy recommendations in terms of increasing the number of females in the workplace (Martínez-Rodríguez *et al.*, 2022).

6. Implications

6.1 Theoretical implications

This study extends craft entrepreneurship research by focusing on how the handicraft industry responded to the COVID-19 pandemic and increased emphasis on digital technology. Whilst there has been a growth in overall research on craft entrepreneurship, the COVID-19 pandemic was an unprecedented crisis that affected the craft industry. This article has contributed to the craft entrepreneurship literature by including a COVID-19 and digital technology perspective. The article stresses that a new theoretical underpinning is required to study craft entrepreneurship that takes a crisis, resilience as well as innovation perspective. The findings of this study shed essential light onto how craft entrepreneurs respond to crisis situations that require new thinking.

This study also advances the current literature on craft entrepreneurship by incorporating a gender perspective that recognizes the role gender plays in craft industries. Women craft entrepreneurs are likely to manage their businesses based on the cultural context that includes tending to their families. This article sheds light on how they do this and how craft entrepreneurs maintain their competitiveness. The findings showed that whilst government help generally was not available to women craft entrepreneurs during the COVID-19 pandemic, their family and resilient spirit enabled them to persevere in hard times. This study contributes to the existing women entrepreneurship and craft entrepreneurship literature by including a COVID-19 element, which is lacking in the existing literature. By exploring the connection between gender, craft and crises, this study presents novel research findings.

6.2 Practitioner and policymaker implications

This article offers useful guidelines for craft entrepreneurs in terms of responding to crisis situations. This includes advice about the vital role digital technology can play in times of social distancing and country border closures. This article suggests that digitalization has

provided a way for craft entrepreneurs to succeed in accessing global markets. Digital platforms are crucial for craft entrepreneurs in terms of building their reputation. Women craft entrepreneurs can utilize digital platforms to communicate with others about their products. This is a relatively low-cost form of marketing communication that can decrease inequality gaps. Therefore, government policymakers need to invest more money and time in training women craft entrepreneurs to make use of digital platforms. This can include outreach platforms designed to cater for women craft entrepreneurs in remote and disadvantaged locations.

7. Conclusion

7.1 Limitations and future research directions

This article focused on Indonesian women craft entrepreneurs that are involved in the batik industry. This unique sample enabled in-depth information to be obtained about how the COVID-19 pandemic affected their market position. Despite this study providing valuable information, there are limitations inherent in any kind of research study that merit further research attention. Due to the small number of batik women entrepreneurs in Trusmi, which is the geographical area studied in this research, more information could be obtained from a wider geographical context. This could include comparing and contrasting batik entrepreneurs from different regions in Indonesia. This might be difficult to do due to the complexity of ensuring a representative sample of batik entrepreneurs. As the Trusmi region was chosen for this study, further research could look into how culture influences the entrepreneurial orientation of batik entrepreneurs. This includes focusing on economic growth and regional government policy regarding the craft industry. By doing so it could bring more attention to whether government incentives such as tax and tariff relief influence entrepreneurship. Moreover, the role of education programs for the craft industry particularly regarding entrepreneurship could be examined to see if they positively or negatively influence entrepreneurship. This could include future research comparing international craft education initiatives to understand what works best.

This study focused on women craft entrepreneurs that enabled a gender perspective to be included. This is important particularly in Indonesia an emerging economy, which is focusing on increasing gender equality in society. For this reason, it was deemed necessary to focus exclusively on women craft entrepreneurs in order to understand how they utilized social structures during the COVID-19 crisis. However, future research could include both male and female batik entrepreneurs to understand further the role of gender. Potential new studies could address issues of work delineation in the batik industry and issues of family involvement. This would be helpful in further understanding whether male or female batik entrepreneurs are more suited to specific crafts or whether the role of gender is decreasing in the craft industry due to changing societal expectations. This study focused on the effects of the COVID-19 pandemic on the batik industry but as the COVID-19 pandemic has only recently subsided more research is required. This can include a longitudinal study that details how craft entrepreneurs have responded to the crises and whether their business strategies have changed.

Conclusion

This study has examined how women batik entrepreneurs in Trusmi, Indonesia, have responded to a crisis by focusing more on digital technology. The findings of the study suggest that gender does play a critical role in the craft industry particularly in emerging economies. The data suggested that government help was non-existent or non-important in how women batik entrepreneurs responded to the COVID-19 pandemic. Thereby

highlighting how the twin changes of digitalization and crisis management meant that women craft entrepreneurs had to navigate different market needs. The results of the study are amongst the first to detail how a cultural product such as batik continues to flourish despite difficult economic and global circumstances by making use of digital technologies.

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Corresponding author

Vanessa Ratten can be contacted at: v.ratten@latrobe.edu.au