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RESEARCH

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Digital and innovative entrepreneurship in the Indian handicraft sector after the COVID-19 pandemic: challenges and opportunities

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Abstract

This research focuses on the factors that barriers and foster (drivers) digital innovation and entrepreneurship amongst small businesses operating in the Handicraft industry after the economic downturn. From the perspective of new Indian craft entrepreneurs, digital and innovative entrepreneurship is crucial to surviving the crisis. It will eventually encourage the development of the handmade goods market and the artisanal reconfiguration as a business. In this study, the qualitative method was used. For the creation of themes, Inductive content analysis (analytical, inductive technique) was used to interview fifty online handicraft business owners who rely on their craft talents for income. After the pandemic, two types of motivation were generated for handmade entrepreneurs. The first motivation was extrinsic, which conditioned the handicraft market, restricted mobility, and upgraded household status for entrepreneurship. The second was intrinsic motivation among the craft entrepreneurs who generated individual and professional skill growth. These two factors encouraged digital craft innovations and entrepreneurial advancement of transitioning handicraft companies to digital platforms. After the interview, respondents explained several hindrances or restrictions, market interruption, and quality internet. Even after that, it resolved as the effect of the pandemic reduced and digital skill training for innovation and entrepreneurship passion increased for developing a robust programme that supports the handicraft new entrepreneurs after the economic calamities. This finding contributes to the area of investigation and contributes to entrepreneurship literature. This study will open the route for making the policy and development of solid strategic plans for the handicraft sector's new craft entrepreneurs. With the help of innovative and digital entrepreneurs, small-scale or craft industries will boost the Indian economy and give some of the best suggestions for global economies. For developing economies, this study will also empower entrepreneurs to open new dimensions for marketing, supply chain, and exportation and will finally increase the Globalisation of handmade products.

Keywords: Economic calamities, Digital innovation, Digital entrepreneurship, Craft entrepreneur, ICT, Handicraft artisans, Opportunity

Introduction

The pandemic of COVID-19 has caused widespread calamities across all sectors of society. The World Health Organization estimates that 279 million individuals were infected with the COVID-19 pandemic, and 5 million died (WHO, 2021). To prevent the spread of coronaviruses, many countries instituted societal and economic restrictions that limited people's ability to travel and communicate with one another.

Physical isolation and closure have sped up the transition to digital entrepreneurship in the handmade goods industry, particularly with the rise of digital platforms (Dannenberg et al., 2020). Recent years have seen an uptick in research debating the elements and conditions that make the e-technology transition of craft companies possible, as well as government policies that encourage such a shift (Sahut et al., 2019). The economy and job creation suffered greatly due to the pandemic. Some of the most well-known digital and inventive enablers (Steininger, 2019) include open social media, educational resources, 3D printing, data mining, crowdsourcing, and digital photography, all stimulating new artisans or entrepreneurs by lowering the restriction between small-scale business creation and invention. As noted by del Olmo-Garca et al. (2020) and Gavrilu et al. (2020), the COVID-19 pandemic also played a role in hastening the digital transformation of small and large businesses, particularly in the handicraft sector (Small scale industries). As lockdowns become the standard, companies and customers in the handmade goods industry are moving progressively to digital platforms, selling and purchasing more practical and aesthetically pleasing goods and services online, growing worldwide e-share commerce by 14–18% between 2019 and 2020. By 2024 (Coppola, 2021), it could reach 22%.

The effects of economic disasters vary greatly depending on the company's size. The UN Conference on Trade and Development (UNCTAD, 2021) produced a study detailing the successes and failures of various firms. The robust handcraft business relies on several critical factors, both internal and external to the organisation, such as financial literacy, savings habits, and the adoption of technology. However, small-scale businesses, especially those in the handicraft industry, often struggled financially and did not have an online presence (Igbinkhase, 2021). There are three possible routes to modest prosperity; those with the most digital maturity have transformed the transition to digital handicraft-related companies.

Those with low digital maturity and cash flow issues modernise their sales methods. Finally, partners with exceptional digital skills help those with limited computer literacy (Priyono et al., 2020). Many developing and industrialised nations rely heavily on the handicraft sector (Mukhoryanova et al., 2021). Since the traditional and cultural industry is a part of tiny businesses in the digital and global world, research is required to analyse its ongoing development.

More than two-thirds of India's workforce is employed by micro, small, and medium-sized enterprises (Handicraft industries). Although research on the effects of the COVID-19 pandemic on Handicraft industries has been conducted elsewhere (Herrera, 2020; Kim, 2021; Sahoo & Ashwani, 2020), it has received less attention in India. To wit, studies by Parilla (2021), Hidalgo et al. (2021), and Tudy (2020) looked into how mobility restrictions caused by the pandemic affected the digitalisation of small enterprises. Reyes (2021) conducted a more in-depth study that evaluated the economic effects of

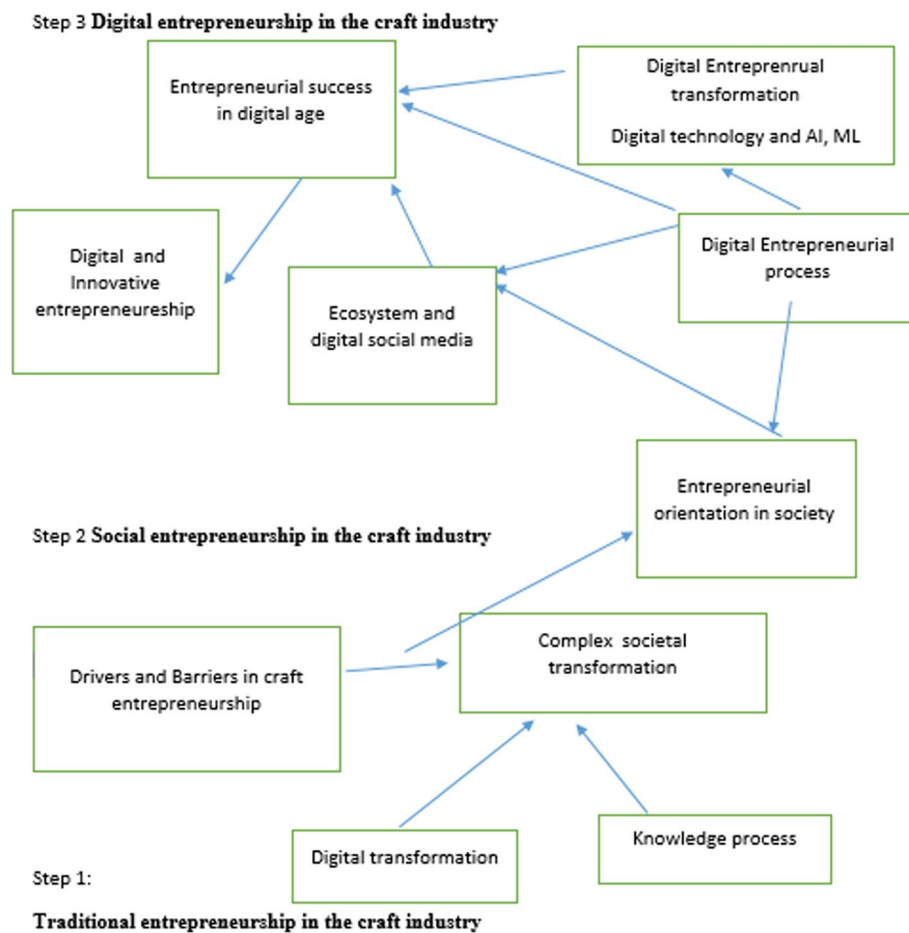
the pandemic and the government's policies and interventions from the perspective of the executives and directors of the country's leading business firms. Therefore, this study aims to add to the existing body of literature by investigating the motivations and problems of Handmade industries' digital transformation in economic upheaval from the perspective of new handicraft business owners in India. Understanding how new entrepreneurs are viewed is critical because of their potential to spur innovation and economic progress and their determination to make a positive difference in their communities (Agoot, 2015; Damoah, 2020).

The primary goal of this research is to examine how economic calamities motivate M&S enterprise innovation. In particular, we hope to (1) learn about new people's first-hand accounts of running a business after the COVID-19 crisis; (2) delve into the difficulties of moving a company into the digital realm; and (3) assess the implications of these findings for economic recovery through online entrepreneurship from the perspective of new people themselves. As a case study, India served as a setting for interviews with new handicraft business owners who provided their insights into the study's central questions. Qualitative inductive content analysis was used to analyse the data. The investigation uncovered Handmade industries' digital innovation drivers (intrinsic and extrinsic motives) and problems in the face of economic upheavals like the pandemic. This study's findings can be used to advocate for government and stakeholder support of entrepreneurship as a strategy for economic recovery after the pandemic.

Background of digital entrepreneurship

According to the European Commission (2015), "digital entrepreneurship" is starting new enterprises or reimagining existing ones by creating or adopting cutting-edge digital technologies and novel applications. Innovation in internet-delivered businesses, products, or services encompasses new business and digital product launches. The digital transformation of a preexisting business activity within a company or the public sector was also considered part of digital entrepreneurship. With risk-taking attitudes and dogged determination, entrepreneurs create fresh ideas, develop novel products, and bring them to market for commercialisation. Many doors will open for handicraft business owners willing to embrace strategic innovation through digital platforms.

From an economic standpoint, platforms can be considered "two-sided markets" (Armstrong, 2006) where sellers and buyers meet to conduct transactions. Digital platforms are a standardised infrastructure on which various services can be hosted. Those findings can be found in Ojala et al. (2018). Use Airbnb to rent a home in a foreign nation or use Airbnb to listen to music on Spotify or iTunes. Value generation and distribution rely heavily on digital channels. The proliferation of digital platforms acts as innovation boosters for start-ups to create supplementary goods and services (Gawer, 2009). About background and development of digital entrepreneurship, please see figure where there is clear classification of development of digital and innovate entrepreneurship, on how traditional entrepreneurship transformed to social entrepreneurship and now converted and transformed in digital and innovate entrepreneurship. How drivers and barriers affect this entrepreneurial development. So there are 3 steps given in Fig. 1 (Yadav et al., 2023a).



Traditional entrepreneurship to Social entrepreneurship and now to digital entrepreneurship

Fig. 1 Development of digital and innovative entrepreneurship within small industry (Handicraft industry) in theoretical view. Sources: figure designed by authors

Entrepreneurs now have access to exciting innovation prospects thanks to contemporary digital technologies, including social media, mobile technology, business analytics, big data gathering, and AI (Chalmers et al., 2020; Cohen et al., 2017; Holmström, 2022; Holmström & Hällgren, 2021). The ‘democratisation of entrepreneurship’ (Aldrich, 2014) and the lowering of barriers for digital startups have been made possible by these new digital technologies, referred to as ‘external enablers’ (Davidsson, 2015). This is because they make it easier for entrepreneurs to transition from having an idea to launching a successful business (von Briel et al., 2018). The activity of exploring “new venture opportunities presented by new media and internet technologies” (Davidson & Vaast, 2010) is known as digital entrepreneurship, and as a result, it is gaining attention on a global scale (Fang et al., 2018; Nambisan, 2017). Even while this type of entrepreneurship and traditional entrepreneurship share many similarities, there is a substantial distinction between the two in that some or all of the critical activities in the former are in digital rather than non-digital formats.

For the sake of this essay, a digital startup is defined as an enterprise that uses digital and innovative entrepreneurship in its operations or offers a digitally oriented-good or service. According to Huang et al. (2017), rapid scaling concerning digital startups is a process by which a venture's user base grows significantly over a short period. Rapid scaling is not always generative and must be carefully monitored by reflective agents to survive (Garud et al., 2010). We contend that in the case of digital companies, such attention entails thoughtful actors working to scale their user base. Although previous research indicates that digital and innovative entrepreneurship is essential to this scaling, little is known about how digital companies achieve scaling. Complexity rises as digital entrepreneurs use new digital and creative entrepreneurship to create unique entrepreneurial acts that hasten the creation of new businesses (Huang et al., 2017). To reduce the barriers associated with entrepreneurship, many organisations and service providers are trying to act as incubators (Al-Mubarak & Busler, 2017; Gonthier & Chirita, 2019; Pettersen et al., 2015; Ratinho et al., 2020; Shankar & Shepherd, 2019; Shepherd & Gruber, 2020). Aspiring digital entrepreneurs must develop, learn, and change in these incubator environments.

Background of the handicraft sector

We know that the handcrafted item was created manually or using simple tools in which the leading role of the hand is used. In India, the handmade industry has provided a top job to rural and tribal people, even through unorganised work. Handicraft products are called artisans, and they are mostly unskilled and semiskilled. Nowadays, many craft entrepreneurs are taking training, and now they are primarily skilled artisans. The handicraft industry has been connected in India since the marina period, and our older tradition was using handmade products in our daily lives. There was 33% export after the Mughal period (Yadav et al., 2020). Indian carpet was exported from India to other countries like the Gulf, Iran, and the Middle East, and Indian terracotta was also shipped from India to their country. The brass industry, pottery industry, Banarasi sari, Chanderi sari, kalamkari, Patola sari, and Bandhani sari are some example of handmade product that has significant demand in other countries. But after that, the use of the handmade industry declined, destroying the use of handmade industry products and replacing them with machine-made craft products. And thus, Indian traditional craft artisans became jobless and straining with earning and work.

Even in the last decade, the Indian government has been trying to revise this industry as our local talent and increasing the promotion of craft products at local and international levels. But when the worldwide pandemic COVID-19 affected the world and some workers from other countries and states returned to their homes and became jobless, these workers had no option. At that time, there were again turned towards handmade products; meanwhile, the Indian prime minister gave a slogan (vocal for locals and launched a program called Aatmanirbhar Bharat Abhiyan on 12 May 2020 (Kumar et al., 2022b). Due to the pandemic, the handicraft sector, with another industry, also experienced some problems: financial calamities and due to the toy lockdown, the handmade product was not sold at the global level.

At this time, digital and innovative entrepreneurship and innovation in the handicraft industry has given a new dimension to handicraft products as part of the small-scale

industry. Most entrepreneurs are not technical and traditional, but must turn their skills to digital and innovative entrepreneurship and create their craft with innovation. In this, they have to compete with global machine-made products. There are different factors and challenges in this sector and front of craft entrepreneurs, especially new craft entrepreneurs, because they face competition with international machine-made craft. The pandemic also affected their market, decreasing sales (UNCTAD, 2021). In this way, new handicraft entrepreneurs or artisans have faced different difficulties, restriction and now, they need government support to promote and produce craft products.

The paper aims to analyse the difficulties of digital entrepreneurship platforms and propose solutions based on those difficulties. The goal is to investigate and support digital entrepreneurship and innovation for its potential to enrich lives and boost economies. The biggest challenge facing digital entrepreneurs is the consumer base's reluctance to change their buying habits in favour of buying via digital platforms. Especially among the senior population, there is a lack of familiarity with cell phones for making purchases and interacting with digital media. The availability of reliable internet service is another issue that has hampered the expansion of digital enterprise in some remote places.

Current studies

Research efforts are concentrated on digitalising and innovating handicrafts to compete favourably with machine-made items across various sectors and geographies. According to a survey conducted digitally before and after the outbreak, businesses in India's service, wholesale, manufacturing, and tourism industries increased their use of digital and innovative entrepreneurship after the pandemic (Muhamad et al., 2021). The current research draws on effectuation, resilience, Bricolage, and dynamic capabilities to understand the difficulties new people starting businesses online after the pandemic face.

Customers have more faith in the efficacy of digital and innovative entrepreneurship as a problem-solving tool because research shows that its use after COVID-19 increased customer satisfaction in the infrastructure and manufacturing (secondary sector) industries (Mohapatra et al., 2021). According to research conducted by Jorge-Vázquez et al., (2021), in the European handmade and unorganised Cooperative Sector, the growth of online platforms and structures of craftsmanship product business has been an undeniable component of interest as a promotional tool for a series of calamities procedures yielding benefits in terms of effectivity, productivity, business and marketing competitiveness, supply chain of craft product, and efficiency. blockchain technology, machine learning (ML), deep learning, and artificial intelligence (AI), which simplify some data analytics and data management challenges, are examples of how digital and innovative entrepreneurship transformation may help solve problems with craft skills (Massaro, 2021).

More than 69 per cent of India's artisan labours are employed by the handicraft industry, which accounts for over 87.5 per cent of all registered enterprises (Kumar et al., 2022a). Although several studies (Herrera, 2020; Kim, 2021; Sahoo & Ashwani, 2020) have examined the effects of COVID-19 on the international handicraft industry, this vital issue has been given surprisingly little attention in India. Several studies have

examined how the pandemic has affected the trend toward digitising handicraft products (Hidalgo et al., 2021; Parilla, 2021; Reyes, 2021; Tudy, 2020; Yadav et al., 2022a) to determine the monetary impact of COVID-19 and government policies and activities by conducting interviews with the top brass of India's most lucrative firms.

This study aims to add to the existing body of knowledge by investigating, from the vantage point of new Indian handicraft entrepreneurs, the forces driving and impeding the handicraft industry as part of the digital transformation of small-scale industries amid economic crises. Motivated to do good for their communities, today's new handicraft business owners are shaping the future of digital and innovative entrepreneurship, innovation, and economic growth (Damoah, 2020). Given India's status as the world's social media capital (Agoot, 2015), it is no surprise that India's new handicraft artisans are enthusiastic about the success of the country's economic strategy for the middle class for handicraft businesses.

Justification of the research

This study plays a vital role and justifies that it is unique because most of the research has been done in the small industry or manufacturing sector, and the maximum use of digital and innovative entrepreneurship and entrepreneurship is in another industry. However, this study will focus on using digital and innovative entrepreneurship in handicraft industries after economic calamities. This will explore the idea of the opportunity and challenge different factors that affect new handicraft entrepreneurs. And it also studies the impact of the pandemic on the craft industry in India. This unique base site is entirely qualitative and inductive content analysis. Most of the Research is qualitative, exploring the theoretical knowledge of new entrepreneurs. It studies the barriers, challenges, reasons for business closure, and business productivity after such a position.

Research questions

For a better understanding of this study's different problems in the handicraft sector, we have created some open-ended questions like the following questions developed following the hypothesis and research framework of this study:

1. How did you start or participate in an online business sailing or promoting hand-made products after the pandemic?
2. What problems did you face while running your online handicraft store after COVID-19?
3. "What did you take away from these experiences?"
4. After COVID-19, what policies may be implemented to encourage artisanal entrepreneurship and help new people get their firms off the ground?
5. How did the pandemic affect your craft business, and what difficulties did you face?

Contribution of the study

This study will support the different craft entrepreneurs on how to work in this sector when some calamities occur. This will help the researcher develop new ideas that assist the industry sector, whether manufacturing, MSME or handicraft sector, to create

demand and market supply of the product. It will also generate job or employment options for workers, even after financial or pandemic crises. The government can make policies for artisans and entrepreneurs to support them even in such a situation. The managerial decision can manage the industry to operate in the worst condition without harming any job and maintain the organisation's demand. This will recommend to the government to make policy and social development.

The objective of the study

The primary purpose of this study is to investigate how economic calamities stimulate innovative practices among Handicraft industries; to study digital and innovative entrepreneurship in the handicraft industry with particular reference to India; examine the barriers and drivers that affect entrepreneurship development in the craft industry. It is hoped that this research will serve as a foundation for organisation promotion, craft-related strategies, government policies, and economic recovery through online entrepreneurship by (1) exploring the experiences of new handicraft business owners after the COVID-19 crisis; (2) examining the challenges of transitioning to the digital realm; and (3) evaluating the significance of these findings. Interviews with new handicraft entrepreneurs in India were conducted to gather perspectives on the challenges.

Structure of the study

This article will be organised as shown below in 7 sections. Section 1 introduction (background, justification, current study, research questions, significance or contribution, Justification and overall study structure) can all be found in the first portion of a research paper. 2 Literature contains, 3: research methodology, 4: result, 5: discussion, 6: implication of the research, and 7 contains a conclusion. All other subsections under these sections are in italics emphasis.

Literature review

Theoretical background of entrepreneurship theory

Some theory has been supported in filling the research gap on entrepreneurial development and innovation in the small and handicraft industries. In the same way, we have covered five different hypotheses here. Entrepreneurship and handicraft expertise involve providing services and items with a twist of imagination to satisfy the growing needs of the local Indian population. The foundation of every entrepreneurial endeavour is the capability to capture opportunities that emerge in the tertiary sector, commodities, and handicraft production techniques (Cohen et al., 2017; Frederick et al., 2016). Entrepreneurship can be defined as the willingness to try new things, take calculated risks, and put one's own money into a firm. It is, therefore, viewed as an effective technique for addressing youth dependency and unemployment, potentially sparking artistic innovation and economic growth in any nation (Al Rayes and Kayiaseh, 2017; Geibel & Manickam, 2017; Page & Holmström, 2023).

In the last few decades, effectuation, entrepreneurial, bricolage, user entrepreneurship, and the creative perspective have described the principles and practices that drive small business growth and the differences between conventional and cutting-edge entrepreneurship approaches Fisher (2012). The latest COVID-19 conundrum

has inspired academics to try new approaches like calamity theory, dynamic capacities, resilience, and digitalisation to better understand and explain the effects of the economy on handicraft sectors in nations with lower incomes, the severity of the crisis, and firm sizes (Belitski et al., 2021). Investigating the factors influencing and impeding digital and entrepreneurial innovation in the handicraft sector after the pandemic will be based on these ideas.

Effectuation theory Effectuation theory at first propounded by Sarasvathy (2001). When faced with uncertainty, craft artists, according to Effectuation Theory (Sarasvathy, 2001), veer away from the rational entrepreneur model and instead use a new set of criteria to make decisions. Current research by Haneberg (2021) indicates that companies' reactions to the second "wave" of the COVID-19 outbreak depended on their level of uncertainty and the amount of knowledge they had gained from the "first wave". The results also show that managers are more willing to experiment and focus on small losses when faced with calamity. Customers make purchases in precarious market conditions. Rather than focusing on goals, businesspeople often take charge of the available possibilities (Fisher, 2012). So, starting a business with the means is also an example of effectuation. New businesses in the handicraft industry are springing up all over the place (Chalmers et al., 2020; Frederick et al., 2016).

Resilience theory Meyer (1982) argues that the approach of resilience, which examines how businesses respond to crises and exogenous shocks, may also be used to characterise business uncertainty. Shocks are sudden, dramatic changes in the market reactions to news or other stimuli from outside the industry. Long-term recovery of individuals, organisations, and entire neighbourhoods is at the heart of resilience (Belitski et al., 2021). Beyond the COVID-19 pandemic, it argues that emerging enterprises can learn from their entrepreneurial spirit and adapt quickly to the economic upheaval caused by the pandemic.

Entrepreneurship bricolage theory According to Baker and Nelson (2005), entrepreneurial bricolage comprises "making do by using mixtures of the assets at hand to new problems and possibilities." According to the bricolage idea, new entrepreneurs flourish where there are few resources or minimal economic progress and are more likely to create something new out of nothing by repurposing parts of old businesses. Because of the unpredictability of this pandemic, new ways of doing business have emerged. For instance, due to nationwide lockdowns and government limitations, consumer behaviour shifted toward internet purchasing (Lungu et al., 2021; Okumu et al., 2019). As a result of these conditions, new craft industries sought new business prospects. After the economic crisis, many handicraft business owners said they were forced to improvise and chart new organisational pathways (Kuckertz et al., 2020).

Theory of dynamic capability The micro and unorganised firm's ability to build, correlate, and externally source skills and internally re-modify to meet rapidly shifting circumstances is defined by the Theory of Dynamic Capabilities (Teece et al., 1997). This notion has connections to the bricolage method of entrepreneurship. Absorptive capability refers to the organisational and strategic processes that enable entrepreneurs to modify their resource base (integrating resources, losing and obtaining resources, and recombining resources) to generate new methods of creating value. For instance, to adapt to the altered ecosystem caused by the pandemic, many small

firms are rethinking their business models and acquiring new digital skills and technologies (Priyono et al., 2020).

The theory of digitisation is the result of merging the abovementioned ideas; it investigates how digital capabilities are used to adopt new business models, manage uncertainty, and strengthen resilience.

Institutional theory and variety of institutional system: digital entrepreneurship in developing economies

According to Meyer and Rowan (1977), institutional theory strongly emphasises how social context affects individual and organisational behaviour. According to institutional theory, people interact within social contexts with informal and formal rules and regulations that influence how people and organisations think and act (Fainshmidt et al., 2018).

To discuss how institutions in developing nations may have a different impact on people and organisations, the Varieties of Institutional Systems (VIS) framework has been advanced.

Institutional voids, described as inadequate or nonexistent market mechanisms (Jamali et al., 2017), are common in developing nations. While these gaps could present difficulties for digital companies, they could also introduce new possibilities. We can categorise institutional voids using the VIS framework into internal and external elements, which belong to the macro and microenvironment, respectively. Human capital, exposure to technological advances, ICT capabilities, technical knowledge, skill-based resources, financial situation, and perceptions and attitudes toward society and technology are all examples of internal institutional holes in a firm. The government, market e-readiness, level of social Trust, financial market, and supporting industries' e-readiness are some examples of external institutional holes. Even if the aforementioned institutional components are linked to effective online venturing, material and cultural factors must also be considered when evaluating the success or failure of digital entrepreneurial endeavours.

The State can impact the economy through its various forms and direct and indirect market interventions. There are four different sorts of states: welfare states, developmental states, predatory states, and regulatory states. According to Rosecrance (1996), the latter form of State imposes and upholds regulations that directly impact economic activity. In a welfare state, the government primarily redistributes wealth to ensure its residents' economic and social well-being. A development state is interested in using industrial strategy to progress various business sectors. Governments strategically oversee and support commercial ventures, trade, and e-commerce operations inside a development state. If present, developing governments can create the essential infrastructure to augment new digital infrastructure, providing the necessary space for businesspeople to exchange and refine their concepts during the opportunity formation process. Unfortunately, development states are uncommon in underdeveloped nations, where predatory regimes predominate more frequently than not. According to Carney and Witt (2014), predatory states are characterised by elites who monopolise power through the absence of market competition, covert decision-making procedures, and a lack of institutional support. As a result, the State tends to withdraw from any activity that can help, organise, and protect digital entrepreneurs.

As they acquire and distribute capital, financial markets are the central component of institutional systems (Davis & Marquis, 2005). Because family money is viewed as a limited resource, developing economies frequently replace financial markets with internal capital markets based on accumulated family wealth (Steier, 2009). In a digital enterprise, financial resources are essential. Even though starting an internet business is less expensive than opening a brick-and-mortar location, persons from lower socioeconomic classes especially face difficulties due to a lack of funding.

Corporate governance has to do with how businesses are run and governed. In developing nations, family members hold disproportionate corporate ownership (Khanna and Palepu 1997; La Porta et al. 2000). Therefore, ownership concentration impacts how owners, employees, and management get along. In Asia, affluent families are ordinary. Due to this, family companies end up being the dominant organisational type. These firms care about non-financial benefits, including maintaining family power and the family's identity and financial rewards (Kumar et al., 2022a, b). In the context of digital entrepreneurship, corporate governance levels relate to the degree to which senior management directs and structures a business by incorporating technology and e-commerce concepts and projects. Therefore, creating a family-friendly climate where corporate digital entrepreneurship can flourish becomes a two-edged sword. Digital entrepreneurs may have easy access to family wealth to fund their ventures. Still, they may also run into older family members who hesitate to provide funding for such uncharted and unpredictable business avenues.

The development of knowledge and skill within a handmade organisation and the organisation of labour are included in the fourth component of the VIS taxonomy. The effectiveness of labour relations determines whether or not business employees will possess the knowledge and abilities required to engage in strategic activities. Because of increased employee flexibility and turnover rates brought on by more fragmented labour markets, work becomes less efficient and effective, and political and familial ties-based foundations become the organising principle (Kaur et al., 2023a). Technical expertise is also regarded as a human capital resource. Learning about digital selling tools and technologies is essential for creating an online presence and communicating effectively with website developers, business professionals, and tech-support providers, especially in emerging settings. Depending on the availability of a skilled workforce capable of supplying digital firms with the necessary human capital support, the level of technical knowledge and resources obtained may vary. A country's degree of knowledge capital also affects how effectively businesses interact with their workforce. For instance, the availability of knowledge capital within companies enables organisations to invest in firm-specific talents. Still, knowledge capital shortage may lessen incentives to invest in particular industries or competencies (Rushita et al., 2023). In this situation, the high cost of hiring and retaining them may be responsible for the shortage of qualified and highly skilled ICT workers. Therefore, the presence of employees with the necessary knowledge and exposure to ICT skills to carry out e-commerce projects successfully denotes the emergence of entrepreneurial opportunities. This implies that hiring experts at a higher level may be more expensive for business owners in emerging nations. The absence of long-term strategic planning may cause the staff members' limited understanding of e-commerce potential, which is indicated by their low ICT awareness.

Additionally, because they lack the information, expertise, and resources necessary to succeed in digital entrepreneurship, small enterprises might not gain from ICTs. The degree of technology adoption in entrepreneurship is significantly influenced by the sufficiency of ICT skills, including the quantity of local communication and software engineers and content authors. The extent of technological inclusion is also influenced by how well technical support is provided.

Culturally speaking, in developing nations, societal perceptions of gender are significant in the legitimacy and validation of women's resources, which hinders their success as entrepreneurs. Women still encounter sexism and intolerance in the digital workplace concerning professional qualifications. A negative stereotype regarding women and preconceived notions about technological aptitude exist (Kumar et al., 2022b). Other perspectives on race and social class show how white upper-class and elite males predominate in positions of power in advanced Western nations; as a result, whiteness and masculinity form the 'ideal' entrepreneurial type and are thought to be intangible resources for the legitimacy of entrepreneurial activity (Kaur et al., 2023b; kumar et al., 2022a).

The generalised trust individuals in a society have in one another is called social capital (Kumar et al., 2022a; Tripathi et al., 2022b). According to earlier research, Trust significantly impacts a nation's economic activity (Kumar et al., 2022b). Due to lacking Trust, people and organisations must rely on unofficial networks built on more specialised faith forms, such as family links. Market e-readiness in digital entrepreneurship refers to a company's, customers' and suppliers' desire to do business electronically. A supporting industry's e-readiness is determined by evaluating the cost and level of development of institutions like IT, telecommunications, and financial ones whose operations may impact e-commerce adoption and initiatives in developing nations. Therefore, one crucial aspect influencing digital entrepreneurship in underdeveloped countries may be trusting a business partner through an e-platform. For instance, given the high prevalence of corruption in developing countries, individuals frequently wonder if a company is dependable, safe to deal with, or would complete the task at hand. The foundation of Trust is a "long-term experience of social organisation, anchored in historical and cultural experiences" (Yadav et al., 2023a). This is especially true for developing nations, where corruption is rampant and negatively affects public, private, and social Trust. In earlier studies, different levels of Trust and corruption have been observed in developing economies. From the standpoint of digital entrepreneurship, the online environment replicates social inequities among aspiring business owners rather than being a neutral area where all stereotypes, differences, or labels are removed. As a result, it could be challenging for citizens to have faith in the reliability and equity of social structures. Furthermore, the notion that virtually "anyone" can launch a reliable online firm with little cash questions the value of social and human capital amassed in the past higher-status work.

After the COVID-19 pandemic, craft-related entrepreneurship was practised online or through digital platforms

In the handmade industry, digital entrepreneurship is "creating value by leveraging multiple socio-technical drivers to optimise digital information collection, management,

distribution, and utilisation (Sahut et al., 2019). Technology advances and businesses across all industries recognise digital transformation's importance in maintaining operations. This digital revolution encompasses numerous facets of business and advertising, such as sales, operations, human resources, finance, customer support service, R&D, and new product creation (Antonizzi & Smuts, 2020). As a result of digital entrepreneurship's monetary influence, more study is being conducted in universities and other fields than ever before. The concept spans technological and ecological disciplines (Susan & Acs, 2017). Beyond its zenith, digitalisation among entrepreneurs has significantly impacted business management (Kraus et al., 2018).

The advent of digital and cutting-edge technology has revolutionised the management practices of Handicrafts companies. Businesses that embraced digital and innovative entrepreneurship could launch new products and streamline processes (Nambisan, 2017; Shiferaw et al., 2023). The entrepreneurs' solid social network and managerial skills opened the door for the small-scale industry to quicken, especially in the handicraft sector, with the help of digital transformation (Li et al., 2018). Some industries may have shut down or experienced financial losses after COVID-19 despite continuing to produce new commercial ideas. Entrepreneurship is heterogeneous because handicraft business owners employ various tactics to ensure continued success and viability. Entrepreneurship is both integrative and iterative due to its reliance on external facilitators.

Due to their resilience in the face of the pandemic's destruction, entrepreneurs are the unsung heroes of the pandemic (Ma et al., 2015; Maritz et al., 2020). Since entrepreneurs seek out, create, and capitalise on novel business opportunities, a sustainable economy can arise due to their efforts to address environmental and social problems (Lopes et al., 2018). As consumers have become increasingly wary of COVID-19, the efficiency of e-commerce platforms has shown its monetary benefits after the pandemic. Consumers were more likely to purchase online due to its ease and security than in-store. The rise of e-commerce platforms due to consumers' desire to avoid the virus has boosted the economy (Tripathi et al., 2022a; Tran, 2021). The COVID-19 Pandemic affected the handicraft industry worldwide and in India, much like previous economic calamities like pandemics, world wars, and global financial crises.

Many developing countries' economies have been affected by harm as a result. After that, several new craft entrepreneurs became increasingly concerned that their businesses would fail due to a lack of capital and consumers. So they transformed their working skill in digital mode like Work-at-home opportunities, e-commerce, e-supply chain, and supply of craft products with the help of drones, online education, and the application of digital skills. There are some advanced running services for the supply of products, marketing through online services, software solution development in India for handicraft sectors like the Handicraft app, and some new digital skills for artisans (Liñán & Jaén, 2020; Rushita et al., 2023; Singla et al., 2023). Slowly, after the completion of the pandemic impact, they again started to do their business. In this time, digital and innovative entrepreneurship has supported many more artisans, and even consumers have begun to purchase the product, and the online transition has also increased very fast.

According to the findings of (Eller et al., 2020; Page et al., 2023; Yadav et al., 2023a), Internal factors that can influence the innovative growth of craft industries as part of small microenterprises include digital strategy, technological advancements, financial

capacity, and staff abilities to convert the firm to Digital. External influences include market competition, consumer demand trends, and the availability of digital and innovative entrepreneurship (Ayinaddis, 2023; Yadav et al., 2023b; Wiliandri, 2020). Incredible advancements in the digital industry occasionally result from societal and environmental upheavals like the COVID-19 tragedy.

Ayinaddis (2023) and Gavrilă et al. (2020) investigated the interconnections and consequences of digitisation, innovation, entrepreneurship, and digital transformation using quantitative methods and existing literature. The findings indicate that the pandemic has prompted businesses to innovate, digitally convert and change their customers' habits in favour of sustainable and environmentally beneficial expansion. According to the study's conclusions, long-term corporate growth was hampered, and people's relationships with firms and society were altered.

Because policymakers could not address the satisfaction and expectations of the parties involved in response to an exogenous event, Ibáez et al. (2021) studied the emergence of DSA, also known as (digital social enterprises), as the result of working together among various players. A structural equation based on partial least squares was used in the study by Cueto et al. (2022) to analyse the relationships between variables and determine the indirect and direct effects of the 130 pandemic-related applications now accessible on Google Play and the App Store. According to the study's findings, DSE acts as a technology accelerator, facilitates skill transformation, or facilitates the transfer of knowledge to satisfy consumers when the government cannot meet their needs.

Entrepreneurship and its effect on the Indian handicraft industry after the pandemic

Out of the 1428 million Indian population, 600 million are engaged in small-scale or unorganised industries. The population's 2.4% annual growth rate and rapid development of the economy have led to an increase in demand for goods and services. Its gross domestic product (GDP) is \$360 billion, and it grew at a pace of 8% of India's GDP in 5 years before the pandemic. The service sector contributes 61% of GDP, whereas manufacturing contributes 29% (DIIP, 2021).

According to the Department of Industry Innovation Programme (DIIP), there were 1,357,620 commercial organisations registered to do business in the country in 2020. About 80.51% were micro, small, and small medium firms, and 19.49 per cent were major businesses. 10.25% were classified as small enterprises, 88.71% were micro-businesses, and 0.49 per cent were considered medium-sized (DIIP, 2021). Before COVID-19, small-scale industries accounted for 68.66% of the country's employment, with half of those people working in the handicraft industry or, we can say, unorganised artisans. Of this total, 20.38% came from unorganised or micro-enterprises, 25.78% from small businesses and 7.50% from medium-sized businesses (DIIP, 2021; Yadav et al., 2022a). The COVID-19 pandemic has dramatically affected India's handicraft industry, drastically altering the marketplace.

Losses have been especially severe in the handmade goods sector of the micro industry, which is more vulnerable than larger manufacturing firms in times like these. Researchers and academics in the subject looked into the effects of the pandemic on the handicraft industry and how it rebounded (Kumar et al., 2022a). The following items are examples of academic literature: The COVID-19's effects and present state were

examined by (Yadav et al., 2022c; Rodríguez-Hidalgo et al., 2020) among those who completed the DIIP's program for small-scale enterprises, particularly in the handicraft sector in the province of Uttar Pradesh MP, Bihar.

Descriptive methods and a semi-structured online survey were used to uncover information about the students who graduated and the pandemic's ripple effects, most notably after community quarantine. The research showed that business as usual was maintained despite the pandemic. They emphasised the need for government intervention and action to protect small businesses. Plus, because they had strengthened their resilience through business continuity training and efficiency improvements, the participants were confident in their ability to respond to economic downturns. Tudy (2020) used a phenomenological technique to examine the lived experimental experienced by professionals in India as they shift from the corporate world to working from home as gig workers or freelancers. When the informant was interrogated, 11 individuals spoke up about their problems, including household distractions and a lack of respect. The benefits have been categorised into several categories, some of which are more time with family, career flexibility, and freedom. The study found that freelancing outweighed its negatives and contributed to creating new, more diverse forms of work. Quarantine regulations and their effects on small businesses' ability to go digital were explored in these papers (Atwine et al., 2023).

To depict the trials and tribulations that new entrepreneurs undergo while venturing into the internet arena, the current study employs the concepts of bricolage, resilience, ideas of effectuation, and dynamic capabilities. This research looks at how economic downturns inspire the use of digital and innovative entrepreneurship in business and innovation in the small-scale manufacturing sector, which includes the handicrafts industry.

The rationale of the study

The literature study reveals a considerable body of work investigating the post-effects of COVID-19 on the handicraft industry and the transition of businesses to electric or artificial intelligence-based platforms. (Arabba, 2017; Lungu et al., 2021) Have acknowledged the impact of the COVID-19 pandemic on company possibilities while focusing on future entrepreneurship, the research included a review of relevant literature and multiple regression analyses of the effects of relevant variables on the chances for new business ventures. The results highlighted the potential benefits to businesses of the pandemic, such as digitalisation and adapting to digital and modern market structures (Lim, 2019). For the study of this article, it has been taken that the handicraft sector has a significant role in developing countries like India, Africa, and other nations, so for the fulfilment of rationale, different literature supports this study. So, various literature needs to support this title, and we have developed a hypothesis. The handicraft sector has been selected for study because no study has been focused on the entrepreneurial and digital innovation of new craft entrepreneurs in India.

Research gap

Much research has been done on innovation and entrepreneurship and factors affecting entrepreneurial intention in small industries. But especially in the handicraft sector,

little research has been done. There is also a lack of proper digital opportunities in the handicraft sector for the welfare of the craft industry's entrepreneurship. Suppose we see that new entrepreneurs are involved in the craft industry. In that case, a complete research gap is seen, so there has been a focus on digital innovation in craft entrepreneurship and suggesting a policy to the government masked for the handicraft sector to promote the industry and employment generation.

Research framework and hypothesis for research

The previous section covered entrepreneurship's theoretical foundations and the handicraft industries' digitalisation. They served as the foundation for this study's research framework (R) and hypothesis (H), shown in Fig. 1. One by one, the six possibilities are described. Economic calamities like those caused by the COVID-19 pandemic would encourage new handicraft business owners to keep operating or provide them with challenges. So, if there is a barrier in any industry, craft entrepreneurs hardly feel effective in starting a new business (Almus et al., 1999; Meyer, 1982). It is challenging to start a new business in the handicraft sector even though the economy at the time of the pandemic experienced difficulties. So, hypotheses H1 and H2 are as follows:

H1: New handicraft business owners would be resilient in the face of economic calamities

Due to natural or artificial calamities, several industrial words suddenly stop or slow down the speed of industries. Similarly, according to Fisher (2012), handicraft business-related new craft owners initially face challenges, as they have no idea how to fight sudden calamitous changes. So we can formulate a second hypothesis.

H2: It would be challenging for new handicraft business owners to keep going if the economy were to experience difficulties.

On the other hand, difficulties brought on by economic downturns will cause a shutdown of operations if handicraft business owners cannot adapt and thrive (H3). Bricolage theory (Baker & Nelson, 2005) states that launching a new business is challenging. The technique developed for this study allows for a thorough hypothesis analysis, leading to more noteworthy results.

H3: A decline in the economy would result in difficulties that would force the closure of businesses.

The handicraft industry, or micro-industry (H4/H5), will be forced to go digital or online to stop the spread of pandemic infection and quickly recover from setbacks caused by interruptions in the business of handmade items with proper operations, particularly if craft employers have the human resources required for this change. Therefore, we have listed H4 and H5 below (Aldrich, 2014).

H4: Handicraft industries will be digitalised as a result of these factors.

H5: The handmade market will shift toward digital alternatives.

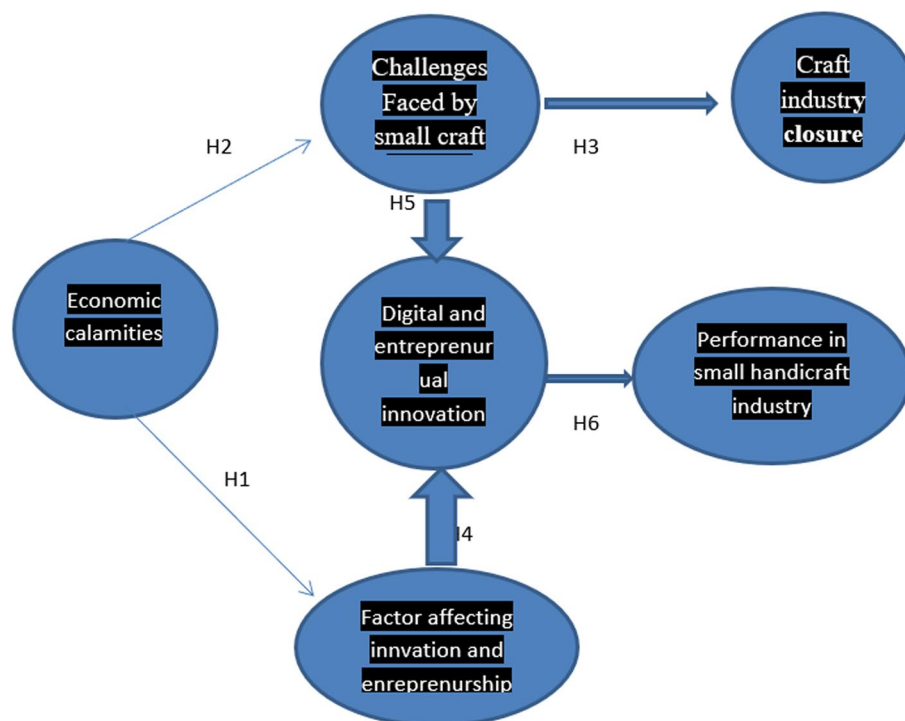


Fig. 2 Hypothesis and research structure of the study. Sources: figure designed by authors

Particularly if craft organisations have the human resources required for this change, this digital innovation will boost the productivity of entrepreneurial operations because of the tenacity of the new entrepreneurs (H6), according to the effectuation theory given by Sarasvathy (2001) to explore the opportunity and select a better route for starting a business in small industry. To prove with the theoretical procedure, we have proposed H6. Digital innovation and entrepreneurship in the handicraft sector can boost business productivity and open the supply chain route locally and internationally.

H6: Digital innovation in the craft industry would boost handicraft productivity.

So, all proposed hypotheses are given and interlinked with a model in Figure 2.

Research methodology

Research approach

This study covered the actual experiences of new entrepreneurs conducting business online throughout the pandemic. It focused more on profoundly understanding a topic than drawing conclusions or representing quantitatively from a sample. We employed the qualitative technique to understand the context, characterise the behaviour and attitudes, identify the processes, and examine the participants' lived experiences (Batac et al., 2021). As a result, it focuses on knowing the different dynamics of social relations that cannot be quantified (not empirically analysed) and understanding and describing parts of reality (Queirós et al., 2017). Because they provided detailed answers to a complete virtual interview, the respondents in this study were referred to as "participants".

With fewer individuals, data collection through in-depth interviews was more critical than statistical calculation. Participants were questioned online to understand better the difficulties before and after the pandemic (Cueto & Agaton, 2021; Lobe & Morgan, 2020). The data were analyzed using qualitative and inductive content analysis. The drivers (intrinsic and extrinsic motives) and challenges of digital innovation in Handicraft industries was investigated and identified after economic calamities, such as the pandemic. The study's findings may persuade policymakers and other stakeholders to encourage entrepreneurialism for economic recovery after the pandemic.

Data collection

We conducted the study in India from the fourth quarter of 2021 until May 2022, more than a year after numerous layers of group interviews. This study included 48 newly established handicraft business owners (median age 35), ages 30–60 (48% men, 52% women, and 2%). New entrepreneurs were employed in terracotta (5%), brass metal (8%), wood and stone carving (13%), the toys industry (7%), and carpet and textile (63%) (Qiu & Man 2021). Sixty-one per cent of people work for themselves, while 20 per cent are employed by small businesses (those with five or fewer employees) or in the handicraft industry. In the United States, small businesses employ 10 to 49 artisans or workers in the handmade goods industry (11%), and large businesses employ 50 to 100 regular employees (2%). All are given in Table 1

An internet-based and new artistic creation start-up or business for production and marketing after the COVID-19 period, a new handicraft entrepreneur from India, voluntary participation in the field investigation, and completeness of the reports were the three main survey instructions and questions that determined eligibility for this study,

Table 1 Demographic information and experience of respondent

Response	Frequency	Percentage
Age (N) = 48		
Below 30 years	8	16.66
30–40 years	20	41.66
40–60 years	15	31.25
60 years above	5	10.41
Gender (N) = 48		
Male	23	47.91
Female	25	52.08
Type of entrepreneurs N = 48		
Terracotta	2	4.16
Wood and stone carving	6	12.50
Toys industry	5	10.41
Carpet industry	25	52.08
Brass metal	10	20.83
Experiences of new craft entrepreneurs		
1 year	9	18.75
2–3 years	21	43.75
4–5 years	10	20.83
Five years and above	8	16.66

(Source: primary data and computed by authors)

which employed purposeful sampling. Our choice of sample size was influenced by the idea of "data saturation", in which replies become repetitive and additional data collecting yields no new insights. The researchers simultaneously collected and processed the data to avoid having too much of it. The data were gathered using an online survey. The items included a summary of the study's objectives, suggestions for refining the questionnaire, the respondent's demographic data, and three primary questions with open-ended answers. The Tata Institute of Social Science (staffed by specialists) and the International Center for Migration Research (ICMR) evaluated the systematic surveys of the handicraft business. Experts assessed the items' clarity, presentation, suitability, adequacy, and ability to achieve their objectives. Afterwards, the surveys were modified in light of their feedback.

Codes were employed in the survey questionnaire to safeguard the respondents' privacy, and the coded data were sent back to the respondents so they could verify their answers. The Department of Micro, Small, and Medium Enterprises, the ICMR Ethics Committee, and the Tata Institute of Social Science with Professionals all examined and gave their approval to this Declaration of Helsinki-compliant study. The study's participants were informed that participating was completely optional and that they could stop at any time. Researchers have also ensured the confidentiality of the responses because only academics and social scientists have had access to the data.

Data evaluation

This study used inductive content analysis, a qualitative research method suitable for studies that begin with an inductive premise or include topics only tenuously linked after employing open data-gathering techniques. In qualitative analysis, themes and theories are isolated by an inductive content analysis applied to textual, audio, and visual sources. In addition to being content-aware, method-neutral, and capable of evaluating a wide range of qualitative data types, this approach is also content-sensitive (Kyngäs, 2020b). Contrasting with other qualitative research studies, content analysis allows researchers to methodically and objectively characterise study procedures at the fundamental element, which may be applied to various research papers. It can generate strategies, topics, and clusters of thought. Models, maps, and frameworks characterising the examined issue can then be developed using this information (Kyngäs, 2020a). In this instance, inductive content analysis was utilised to produce categories, themes, and concepts from the data because (deductive content analysis), DCA, is commonly employed for an unrestricted or limited analysis matrix based on the study's objectives. For short demographic information, please follow Table 1.

Table 1 shows that age, gender, type of industry in the craft sector, and year of entrepreneurship experience have been given. The table shows that the percentage of female entrepreneurs was 52.08% rather than male. In the carpet industry, many more enterprise owners were involved (52.08%). In the year of starting or experiencing a new business, it has been observed that 53% of entrepreneurs have more than 5 years of experience. In the case of age, the age between 30 and 40 years was 41%.

The steps of qualitative inductive content analysis are shown in Fig. 3. Planning, organisation, and reporting are the three Ps. One step in getting ready was deciding on a method for gathering data and taking samples. Before beginning the investigation, the

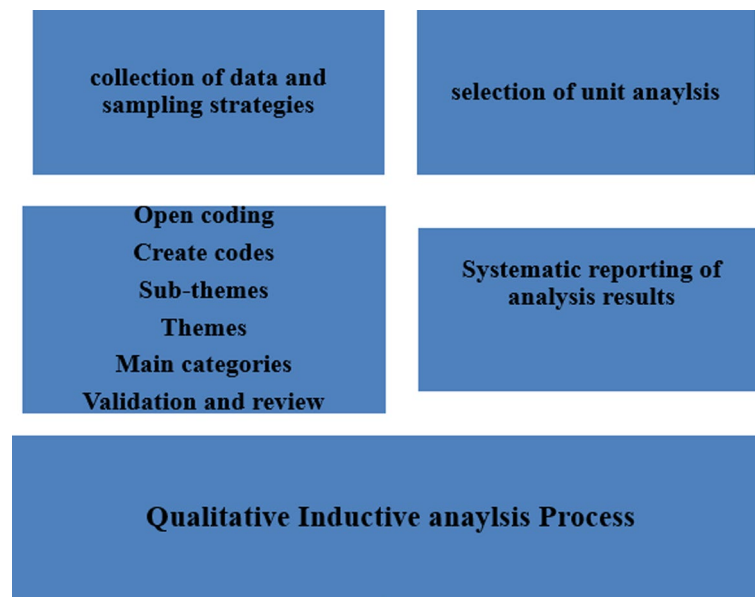


Fig. 3 The procedure of a qualitative inductive content analysis step-by-step. Sources: figure designed by authors

researchers read the data several times. After that, the researchers developed the Q-IA ‘unit’ independently. Please see Fig. 3.

Figure 3 shows how content analysis and coding have been done by classifying sections, subsections and results. Following other steps, data collection started in different phases in different organisations, either from handicraft firms or small industries. The next stage in organising the information involved classifying and abstracting it, giving it meaning, and checking to see if the information collected was genuinely representative. In the second stage, the raw data were expressed in open codes using words that were either direct translations of the raw data or significantly modified versions of the regulations. The researchers examined the similarities and contrasts between each open code to assess if they could group them. The evaluation of the open codes served as part of the data abstraction process, yielding subcategories that were then fused into generic and primary categories. The researchers decided whether to proceed with the summary procedure by forming clusters according to the commonalities discovered.

In digital handicraft entrepreneurship, the opportunities presented by the free codes revealed must have been investigated. Therefore, researchers need to double-check the original data. Researchers could correctly name the underlying and overarching notions once they had been defined.

Reporting entailed systematically and logically presenting the results of the analysis. On the other hand, the researchers correctly cited their sources so that the notions supplied through the chosen open codes and subcategories could be explored in light of the underlying data. The selected references should provide a variety of perspectives from the people involved in the analysis.

Results

The results of the content analysis were divided into three groups. The first subcategory looked into how COVID-19 affected the decision-making processes of new and handicraft business owners. In the second, we looked at the issues the participants face when trying to start a digital business, and in the third, we discussed some possible governmental solutions. There are three tables that break out all of the content analysis.

Personal transitions of new handicraft entrepreneurs towards digital entrepreneurship

Seven specialised categories, 25 codes, one broad category, and two generic ones are specified. Table 1 presents abstracts of this information for people who only had business experience in the digital realm after the COVID-19 pandemic. In times of economic upheaval, participants identified two overarching categories of external and internal factors that foster digital innovation in the handicraft sector. Table 2 depicts the results of new entrepreneurs' encounters with digital entrepreneurship after the pandemic. Code and code statement and clarification are given in Table 2

Table 2 shows some motivators and digital tools in different sections. New entrepreneurs in the handmade goods industry cite external factors such as societal concerns

Table 2 Main class of problem or barriers and categories with a generic class

Main class	Subcategories	Generic class	Code statement
Entrepreneurship and Innovations After the pandemic, the use of digital and innovative entrepreneurship in the handmade goods business	Observed Societal Changes	Change in Market Conditions	Problems with digital marketing strategies (4) Ceasing of business operations (4) Rising demand for e-commerce (5) Changing customer preferences (2) Competition From Firms That Provide Identical Goods/Services (2) Participate in several Social Media Sites (4)
		Strict Observance of Health Guidelines	Travel Restrictions (3) Prohibition of Face-to-Face Transactions (3)
		Change in Household Income	Job Losses (4) Economic Difficulties (8) Declining Incomes (10)
	Personal Driving Force	Earning more money (22) meeting the family's basic needs (3) securing a college fund (1) minimising stress (2) maximising spare time (4) Professional Motives	Gain practical experience with online commerce (2) Exhibit one's abilities, talents, and skills (1) Making Use of What You Learn (2) Developing into Productive People (2)
	Worries for the Safety and Happiness of Neighbours	Observed Societal Changes	Change in Market Conditions

Sources: Table 2 compiled by authors

as motivation for using cutting-edge digital tools. In addition to the fourth and fifth idioms (H4 and H5) listed, these challenges include volatile market conditions, unstable household finances, and limited mobility. To prevent the spread of the coronavirus, the government instituted several community quarantine measures, including restrictions on group travel and public transportation. Many facets of society and the economy were profoundly affected.

Market participants cited company shutdowns, a rapid shift in consumer preference toward digital channels, and intense rivalry among businesses offering similar wares as reasons for the industry's current state. The third, fourth, and fifth hypotheses (H3, H4, and H5) satisfy these conditions. Many workers were laid off when companies went out of business, negatively impacting their ability to provide for their families.

Conversely, participants cited intrinsic motives like self-improvement, professional development, and care for others as primary justifications for launching an (online) internet business, all consistent with the first proposition (H1). The need to provide for one's family, improve one's mental health, and broaden one's horizons are examples of personal motives. Despite their youth, these handicraft business owners recognised the potential for growth in the pandemic and the rise of online commerce.

New entrepreneurs' "Bayanihan" spirit is refreshing when building successful online businesses. When talking about Indian artificial intelligence, this virtue means "supporting one another, community spirit, or solidarity." This collaborative effort has followed the sixth hypothesis (H6). The COVID-19 issue in India had a significant financial impact on the country's population. Therefore, participants sought digitally transformed firms (enterprises) to help affected people. Challenges for new craft entrepreneurs are given in Table 3.

New entrepreneurs' start-up challenges in digital entrepreneurship

Table 3 shows how these generalisations about the challenges faced by new entrepreneurs in launching a digital business break down into specific areas. These notions are congruent with the second hypothesis (H2). Challenges to participants' entrepreneurship skills, issues in the marketplace, and the pandemic's effect on the business climate were the three overarching themes that emerged from the discussions. Table 3 displays the results of an investigation of new entrepreneurs' difficulties in developing digital firms after the pandemic.

Because they are still relatively new to the field, many new and upcoming professionals in the handicraft industry lack the requisite entrepreneurial abilities related to doing business online, personal management skills, and information technology. Digital platform market conditions posed new challenges for start-up entrepreneurs. Examples include start-up capital, digitisation of markets, difficulties with online transactions, legal problems with applications for business permits, and copyright worries with content production (like YouTube).

The economic climate after the pandemic also challenges new handicraft business owners as they attempt to convert their small businesses digitally. Telecommunications networks, community quarantine regulations, and power outages are just a few of the problems that must be overcome to contain the infection.

Table 3 Results of an investigation of new entrepreneurs’ difficulties in developing digital firms

Main categories	General categories	Subcategories	Code	
Necessary destruction in the development of Craft industry innovation through digitisation and entrepreneurship	Challenges in handicraft new Entrepreneurship skills	Business prowess	Creativity in marketing tactics and placing advertising (4) (3) Building strong client relationships and trust by providing excellent service	
		Information technology skill for craft innovation	The technology used for skill development in the handicraft sector	
		Personal management skills	Tenacity/patience when conducting business Live-selling self-assurance (2) Constraint/psychological breakdown Effective use of time (5)	
		Financing in small-scale handicraft business	The problem in the collection of capital investment in the small craft industry (2) Proper and regular lack of capital in the craft industry (2)	
	Market Problems for New Online Businesses	Market Situation		Significant competition between vendors (6) Handicraft industries face problems with digital Innovation Electronic transactions A limited number of subscribers/clients/customers (5) For starts, modest profits (2) various target markets Supply availability (5) Supplier/seller legitimacy Order quality (2) Non-payment of delivered goods and cancelled orders (3)
				Weak online presence (6) Restrictions on Leaving the Quarantine Area Devices for conducting business online are readily available. Brownouts of electricity (2)
	Difficulties in Today’s Business Climate Misdirected shipment	Access to Reliable Technology		

Sources: table compiled by authors

New entrepreneurs’ perspective: promoting online business

For new entrepreneur artisans government has launched the famous scheme in digital era. Some schemes are discussed in table. A summary of the government scheme that supports and promotes artisan for innovation is given in Table 4.

Table 5 displays the 11 Question 3 abstract codes, including three generic categories, 7 subcategories, and one major category. The broad categories include government support for start-up businesses, training for new entrepreneurs, and improving the infrastructure that facilitates digital entrepreneurship. Table 5 is included.

Table 4 Some schemes for promoting artisan and entrepreneurial development in the digital era

Government scheme	Organising agencies	Impact of government policy on handmade artisans
Ambedkar Hastshilp yojna	Handicraft Development Commissioner's office	Improved the production of artisan in rural and tribal areas
One district, one product scheme	Department of MSME Uttar Pradesh	Created new artisan and product sailing and marketing to become a global
One station, one product scheme	Ministry of railway	Promotion of locally handmade products increased
SARAS scheme	Ministry of minority and work development	Artisan can explore their marketing capacity through this scheme
Hunnar Haat scheme (fair)	MSME and ministry of minority and work development	Through fair and trade global promotion of Indian handmade product
Atal innovation scheme for artisans		

Sources: Authors' compilation

Table 5 Policy outcomes of new entrepreneurs' recommended handicraft sector digitalisation policy

Serial number	Main section	Simple sections	Subsection	Frequency statement
1	Government support for start-up businesses in the handmade industry	Policies that help the digitalisation of the handicraft industry	Financial support	The subsidy, loans, tax incentives/deductions in the craft industry (18)
2	Add and mark policy local to vocal and glocalisation	Administration support for the handicraft sector	Marketing digital and administrative support	Marketing, business permits, etc.) DIIP, MSME, BIR, (15)
3	Legal support	Support Skills Enhancement Financial, support for entrepreneurs		Protection for sellers and IT
4	Legal protection for sellers and IT support for handmade products	Entrepreneurship skills in the craft industry	Entrepreneurship Education for the handicraft sector	Localised online 'tinge', marketing, products expo (6)
5	Infrastructure Development for craft park	Improving internet connectivity	Digital knowledge training for artisans	IT (7)
6	Infrastructure and energy with information technology	Energy and technical improvement	Improve GPS for raw material and digital marketing infrastructure	Improve energy infrastructure (3)
7	Economic support for craft entrepreneurs	Financial	Create an account for craft entrepreneurs	accounting, IT,

Sources: table compiled by authors

In a discussion about helping new entrepreneurs get their businesses off the ground, 18 people agreed that having access to capital is crucial. Low-interest loans, government aid after lockdowns, and temporary tax reductions are all examples of this. New entrepreneurs are concerned about the increasing industry competition and difficulty getting their enterprises off the ground. However, consumers and handicraft business owners should be legally protected from fraud (Yadav &Yadav, 2022).

After this economic uncertainty and pandemic crisis, the government should provide training in entrepreneurship so that new handicraft industries can be established. Accounting, finance, and tech-savvy entrepreneurship were all abilities cited

by respondents. The IT College and the ITI should include elective courses that teach students the basics of business management and entrepreneurship basics. Finally, stakeholders recommended that the government create rules stimulating competition among telecommunications providers to minimise prices while delivering excellent internet connectivity. It is also essential to set up infrastructure that provides a more stable electrical supply, particularly in rural regions (Yadav et al., 2022e).

Discussion

After the pandemic, this research examined how new handicraft business owners adapted by moving their operations online. Three exciting issues of contention emerge from the findings. The primary findings are listed in the first bullet point, along with an emphasis on how novel these results are in light of previous studies. The study's findings on digital progress after economic turbulence are discussed in the second recommendation. The corporate world and potential managerial applications are covered in the final section.

Motivators and problems for handicraft industries' digital innovations

Table 2. explains the problems or barriers of the handmade industry for digital innovation. Two fascinating conclusions emerged from using qualitative inductive content analysis to the real-world experiences of new handicraft business owners. Despite the shaky economic climate, digital innovation continues to be propelled by both internal and external forces. To comply with an external obligation, such as to avoid punishment or to reap the benefits of a reward, is an example of an outward urge (Hennessey et al., 2015). Stakeholders in this poll attributed these constraints to the COVID-19 issue, changes in the state of marketing and demand for products, and sudden shifts in household financial conditions. Recent research indicates that micro, small, and medium-sized enterprises (Small scale industries) were hit particularly hard by the pandemic crisis due to issues such as a lack of available capital, supply chain calamities, falling demand, lower sales, and lower profits (Asiati et al., 2021; Shafi et al., 2020; Tripathi et al., 2022c).

Entrepreneurship qualities and talents, such as access to capital, creative problem-solving, and the ability to network, can be distilled from the factors most important when launching a firm amid a crisis (Ioraite and Guleviciu, 2021). Meanwhile, Lopes et al., (2021) found that students' preferences for work changed after the pandemic as they came to value entrepreneurship in this novel setting. This shows that people are more conscious of the COVID-19 pandemic and appreciate entrepreneurs because of their creative skill sets. Individuals' inventiveness increases when driven less by external demands and incentive systems and more by the task's intrinsic rewards (interest, satisfaction, accomplishment, and difficulty). One's ability to be an entrepreneur can be hampered by several factors, including the fear of financial loss, the insecurity of one's employment situation, the unpredictability of one's income, and the uncertainty of one's environment or schedule, resulting in the possibility of failure.

Internal restrictions (digital literacy toward digital implementation and lack of awareness) and environmental factors were identified by Costa and Castro (2021) as the two main types of barriers to the digitalisation of small-scale industries. This

Table 6 Barriers to digital innovation in the handicraft industry

Related statement	Code
Providing first-rate assistance with every single internet purchase was a challenge. P45	Offering inadequate service
The required knowledge and skill sets must be mastered. P12	Skill with modern technology
Perseverance and tolerance are required. P16	Diligence and perseverance in business
Confidence when selling live. I want to sell live, but am camera-shy and don't dare. P27	Time management
I must leave town because of work, school, and mental health. P15	The difficulty in obtaining funding
He has a lot of guts to keep going with your online business despite his fears of failing to attract customers. It requires tenacity and persistence. P16	Not enough money The lack of preexisting channels made it challenging to launch a vlog
Raising additional funds in the pre-pandemic period is difficult. The amount I receive goes straight into my business as initial funding. P33	a negligible amount of subscribers, buyers, or patrons
I had to go into my savings for a handicraft company out of necessity. P18	Low income, to begin with
Retailers' cutthroat competition with other competing online stores offers the same products. P20	Several Potential Audiences
In the beginning, subscriptions were added. But since there are always many people online, recruiting enough people to make a profit was easy. P9	Business license, DTI, and BIR Forms Availability of Materials
Small gains. P28	Cancellations, reductions, and quality concerns regarding placed orders all occurred
Challenges in developing an effective marketing strategy. P28	Different markets
It's a joke about the people who place orders but don't pay. P11	Limitations on Digital Innovation in the Handicraft Industry: A Code of Conduct
The pickup of supplies was delayed due to certain constraints. P29	Maintenance of supplies
It's tough to track down the materials I need. P5	
There is a limited supply of items available. P36	Code Statement on Obstacles to Handicraft Industries
There are times when the profit margin is higher at wholesale. P16	Customers contrast goods from various sellers
Several issues arise when copyrights are used. P20	Copyright concerns for content
Lack of connectivity might be problematic for online meetings and client video conferencing. P4	Internet connection speed issues
The administrative burden of starting a business is substantial. P10	cancellation of orders and non-payment for supplied goods
The reliability of the internet is sometimes unpredictable. P9s	Devices are readily available for Internet transactions
Connectivity	Incorrect delivery address: The Waze app misplaces or fails to locate some addresses
As the world shifted to a digital system, everyone needed access to the internet for things like telecommuting, online classes, and online shopping, but bandwidth availability was terrible. The cost was substantial, too. P14	Time spending jokes
Planned and unplanned brownouts are another concern since they interfere with the devices' power supplies (P17)	Online calamities in rural areas
Merchandise. P26	Trading behaviour
Having the proper resources was the first step in making the transition to online: pandemic precautions, or P12	limits on movement
Pandemic precautions. P45	Physical distance

Table 6 (continued)

Related statement	Code
Tighter local rules made it difficult for me to make outdoor deliveries of the products I offer. P18	Finding customers was challenging because everything was controlled with
There are dangers involved with having strangers bring you online purchases. P26	Health dangers
Banking hours are too short. Banks are open for a shorter period because of restrictions. P10	
The transportation costs were exceedingly high for each delivery I made. P25	The cost of transportation is rising

Source Authors' Compilation

research provided additional safeguards against monetary shocks like the COVID-19 catastrophe. Mobility concerns, health risks involved with delivering online orders of goods and services, reduced hours for business operations and banking, and increased operational costs due to stricter motor vehicle restrictions are some challenges new entrepreneurs face today. After the pandemic, people were urged or required to stay indoors, creating severe economic hardships for the self-employed (Liu et al., 2013; Yadav et al., 2020). For coding, a statement of significant barriers is given in Table 6. The table code and related reports are shown in the table itself. For barriers in handicraft sector entrepreneurs to apply digital innovation, a summary of generated codes and significant responses is given in Table 6.

Conversely, when intrinsically motivated, you do something because you genuinely enjoy it. Participants in this study cited these reasons for engaging in online business: the opportunity to learn and grow as future entrepreneurs, the satisfaction of helping others, especially those less fortunate, and their desire to make a difference in the world. Our research disproved the conclusions of previous studies (Asiati et al., 2021; Ioraite and Guleviciu, 2021; Parilla, 2021; Shafi et al., 2020) by showing that external objectives were not the only important factor in driving digital innovations in India's handicraft industry.

This demonstrates the uniqueness of the findings concerning the internal and external factors influencing digital entrepreneurship. In contrast to the restrictive questionnaires used in the quantitative technique, the qualitative approach discussed here permits in-depth exploration and yields more comprehensive results. Gavrila et al., 2020; Kraus et al., 2018; Qiu & Man 2021; Samara & Terzian, 2021 found that some inadequate infrastructure facilities hamper the operations of new start-up owners in institutions (such as policies and regulations, start-up financing, skilled labourers, and digital infrastructure). To motivate entrepreneurs in handicraft industries through digital innovation, please follow Table 7. For motivators that encourage the handicraft sector entrepreneurs to the application of digital innovation, a summary of generated codes and significant responses is given in Table 7.

The study of different drivers that make handmade industry entrepreneurs with the support of digital innovation is given in Table 8. A summary of generated codes and significant responses is shown in Table 8.

Therefore, there has been a dramatic increase in online retail sales and numerous types of personal services, forcing offline businesses to adapt to the online format

Table 7 Motivators for handicraft industries through digital innovations

Related statements	Code
Quarantine regulations hamper our ability to travel between islands for business purposes. P5	Restriction on movement
In-person gatherings were temporarily postponed. P14	It is not permitted to do business in person
I had stopped running my side business. P21	Inactivation of Business Procedures
We are a milk tea business. P11	
All transactions take place in cyberspace. P10 There are a lot of competitors. Since losing their jobs, many people are finding it difficult to make ends meet (P20 P11)	Displacement of workers has occurred. Commuters are scarce because of the city's isolation
Since many of our customers had shifted to online learning due to lockdowns, I was shut down. P11	Problems with Money
P11 Many toys are struggling to make ends meet since they lost their jobs	
I'm making videos and giving away freebies on TikTok hoping to get paid. P35	Shift in the focus of Internet advertising
In light of the epidemic's impact on e-commerce, I recognised an opportunity to supplement my income. P6	E-commerce's Star Is Rising
Travel restrictions keep people at home, shopping online for necessities like food, clothing, and home items. P11	Altering Tastes of the Consumer Market
It's hard to get my first customer right now because I'm just starting, but I hope to use social media to spread the word and gain some exposure. P34	Challenges with digital marketing
We quickly jumped on the chance to establish a lending business. P10 has lost money since a number of its small businesses have closed because of the pandemic. In other words, I was laid off. P21	Problems associated with online advertising
I've encountered some unforeseen financial difficulties and need to supplement my income while enjoying my free time. P5	Having more time to relax
I can't provide for my family and pay our bills well without increasing my income. P41, I have to meet the basic needs of my loved ones. P13	Produce Extra Money to Meet Financial Obligations
Get Financial Aid for School I'm looking for a way to pay for college. I want to get a job even though I'm still in school. I felt less down about the epidemic after taking the P18	Study up on e-commerce Nothing makes sense to me
Internet business can help you relax. P25	
Manifesting Abilities, Potentials, and Skills P16	It made sense for me to take my company digital
This crisis has hit the tourist, events, and entertainment business the hardest, and we need to do what we can to help ourselves and the people we connect with daily. P12	survive and keep earning money by relying on my own individual set of strengths

Source Authors' Compilation

(Reuschke et al., 2021). Support from peers, mentors, and experts is crucial for entrepreneurs to contribute to society, but it can be challenging due to government constraints (Meurer et al., 2021). Overcoming these challenges requires efficiency, dynamic capacities, and adaptability, emphasised in the theoretical basis for digital entrepreneurship in economic crisis (Yadav et al., 2022d).

After COVID-19, participants (stakeholders) identified three main problems with digital entrepreneurship: a lack of entrepreneurial skills, an unfavourable business climate, and a lack of suitable digital platforms. These supported prior research elaborating on the challenges faced by digital artisans (Charlebois et al., 2021). In their discussion of the business, technology, skills, supply chain, and innovation restrictions and problems of the handicraft sector as part of small-scale industries while implementing digital innovation, Xing et al. (2021) illustrative. Challenges for digital

Table 8 Drivers for handmade industry entrepreneurs through digital innovations code

Code	Important statements
I want to use the knowledge I acquired in school. P18	Putting Academic Knowledge in Context Become valuable members of society
Our delivery service company offers additional revenue while working from home and simultaneously employs city drivers. P11	Become valuable members of society Developing New Employment Prospects
Online sales enable people to earn more cash while offering goods or services that save others from taking unnecessary risks while purchasing. P26	Convenience of Shopping Online
I started an online business due to the pandemic's economic effects. Since I am of legal age, I decided to become financially independent and stop depending on my parents for support. P4	Focus on your efficiency
Fortunately, there are alternative ways to sell products, such as by providing the most appealing images of each one individually to draw in customers and allow them to examine the item's specifics. P27	Experimenting with new forms of advertising and blogging
Building trusting relationships with clients is challenging. P20	establishing reliability and a solid client base
Gaining others' trust when purchasing things online is difficult. P26	A Procurement-Related Proclamation
Time management was challenging for me as a student. I have to balance my work and my schooling. P46	Problems with Time Management

Source Authors' Compilation

entrepreneurship in India have been identified as the unorganised industry's organisational structure, shifting markets, technology uncertainty (like Google or Facebook), and new business models. In Table 9, there is a government policy-related statement, and their code is given, which supports digital innovation and handicraft entrepreneurs to do better for our country's production, marketing, export and increment of GDP. A summary of generated codes and significant responses is given in Table 9.

Table 9 Government policy to support digital innovation in the handicraft industry

Codes	Related statement
Business registration, E-way bill requirements, and other legal formalities will be discussed in detail at this session for aspiring entrepreneurs P5	Discounts, exemptions, and tax credits
The government should provide services such as business licenses, district officer approval, single-window clearance, and more. P10	Make it easy and cheap for the everyday folks
The regional government may also authorise the introduction of a unified digital platform called "change" that will only accept locally produced goods and services. P24	The government should make Start-up subsidies available to budding business owners
Training programs on online marketing, search engine optimisation, and related approaches for increasing sales, geared specifically toward new handicraft company owners. P15	Aid for New Ventures with Marketing
Lo loan Interest rates should be lowered for businesses impacted by the pandemic. P 16	Loans, equity
P4 is planning a fundraising initiative to enable a primary loan scheme for the primary sector of the business at a lower interest rate than the local banks currently offer. P 37	They're put on display

Table 9 (continued)

Codes	Related statement
A platform that streamlines the processes for filing with the DTI, BIR, and other regulatory bodies is necessary for students who wish to start their own businesses. P25	A digitally innovative e-policy for the handcrafted goods sector of the small-scale manufacturing sector
Then, it will be easy to find legitimate businesses and insist they provide their customers with excellent care. Buyers and dealers. P45	The government should educate all students on the merits of entrepreneurship
Having a background in business is helpful. Seminars hosted by the government to attract and engage newcomers interested in starting their handicraft businesses are terrific. P15	Governmental inquiries into data
Finding a trustworthy service when I first began out wasn't easy. Do what you need to do to get ahead, epidemic or not. The school may provide "Business" as an option for students. To safeguard e-commerce enterprises, the government needs a more efficient plan for enforcing safety measures and dealing with fraud. P29	Cooperation with multinational digital service providers can move quickly if data efficiency is improved
Digital businesses, E-commerce, and permanent virtual careers are here. It also needs to create regulations for monitoring online enterprises more effectively so that fake shops can be identified as such. P12	Hold a large-scale, countrywide workshop and conference
The federal government should host free webinars teaching people how to start and manage websites. They should also provide services like microfinancing to help new handicraft company owners expand and enhance their operations. P38	Permits, DTI, BIR, etc.
The government should look into how telecommunications companies may improve data connectivity. It's now expensive, but the connection lasts a long time. As the range of a link grows, so does the potential customer base. P14	Internet connectivity
In light of businesses' ongoing digital transformation, the government should open the market to foreign internet service providers to increase local competition, decrease connection fees, and improve internet speed and quality for residents. P4	E- way Bill

Source: Authors compilation

Implication of the research

Theoretical implication

The theoretical implication of the research: this study has several critical aspects in our daily it has theoretical, managerial, practical, and policy implications for future study.

Theoretical implication of the research

Theoretically, this research will open a new dimension for researcher policymakers, socially valued. This will increase interest in the research world. This will also help in policy-making to different governments for the welfare of artisans, entrepreneurs, and financial support. This study will support society and motivate people to own businesses and use handmade and sustainable products.

Policy implication of the research

To succeed in today's digitised marketplace, companies need to constantly innovate their products and services or risk losing customers to competitors that do. However, there

were many challenges that new entrepreneurs faced when trying to make technological advances. After and after economic upheavals, the results of this study could have policy implications that help them overcome these barriers and create Internet businesses.

The first step is for the government to back the burgeoning handicraft industry by providing technical resources, financial backing, marketing, and legal procedures for registering handicraft products. Governments have used subsidies, tax breaks and credits, grants, and similar programs to encourage technological innovation in SMEs, which can help boost productivity (Quimba & Rosellon, 2019).

After COVID-19, the first policy priority was to address issues with the recovery phase that minimise cash flow challenges and reduce job losses, as these industries are particularly vulnerable to severe economic shocks (Hung Kee et al., 2019; Pu et al., 2021). As a result, there is a strong connection between government assistance, soft skills, financial, and technical support (mentoring, networking, consulting, awareness-raising, training, accumulating learning capabilities, and problem-solving skills) (Aldrich, 2014; Asiati et al., 2021; Juergensen et al., 2020).

Second, the union government should push up-and-coming handicraft business owners to improve their technology, finance, and sales knowledge. Among the small-scale industries, the handicraft sector benefited greatly from innovation capabilities and technology in the face of a pandemic (Anggadwita et al., 2021; Al-Mubarak et al., 2017). Management and financial accounting skills, which have significantly impacted small-scale industries' performance throughout the pandemic, can be honed with the help of digital and innovative entrepreneurship that provides more precise, efficient, and practical financial reports and financial data (Apriyanti & Yuvitasari, 2021). Policies should address the barriers to digital entrepreneurship by providing frameworks that promote the development of digital and entrepreneurial skills through education and training programmes (Reyes, 2021). Some in the education sector may see cyber security as essential to digital education because of the rise of mobile banking apps, online shopping apps, and contactless payments. It is also necessary to help new handicraft business owners build more robust networks to gain more accessible access to resources, including funding, customers, opportunities, suppliers, and partners (OECD, 2015). These technological and financial barriers are stifling growth in the handicraft industry, and the sector needs governmental support to break through them.

Third, the government must swiftly improve the country's IT infrastructures to hasten the handicraft industry's embrace of technological innovations and economic growth. The shift to Digital in the market makes this a must. In the world's IT condition, India's Internet infrastructure is behind that of other contemporary rising countries in Asia. Users' motivation to innovate, promote equitable growth, and create a widespread knowledge society is thwarted (Salac & Kim, 2016). The country's proclaimed and unannounced power outages exacerbated the interruptions and inadequate Internet (Collera & Agaton, 2021). This was made worse by the country's rural electrification and energy security challenges. Internet speeds are slow, and costs are high since there is not enough competition in the industry (Salac & Kim, 2016).

The cost of internet connection in nurturing IT infrastructure and making positive energy competitiveness is a crucial feature in addressing these issues, along with the increasing competition for high-quality goods and services, which could reduce the role of government. New satellite systems that can enhance the connectivity provided by fibre technology today should be made available by the government, particularly in remote and rural areas that lack traditional options for reliable broadband connectivity. However, promoting training programmes in information and digital skills on current technologies is necessary to make digital business more competitive and increase the number of online handicraft product services (Jorge-Vázquez et al., 2021).

Managerial implications of the study for business sector

The study's findings affected policy, management, and the private sector. Understanding the dynamics of the digitalisation of the handicraft sector is helpful for enterprises and the industry as they adapt to the new business-standard. To thrive in today's dynamic business climate, entrepreneurs need to hone two types of information technology expertise: (1) a flexible IT infrastructure, which provides a technological basis for both current and future IT assimilation and IT applications, and (2) the ability to routinise or diffuse IT applications within the business system. The transition from offline to online commerce in the handmade goods sector can be eased if businesses know the possible benefits and challenges of digitalising their goods and services (Costa & Castro, 2021). Thanks to the proliferation of digital channels, their customer base would expand with the advent of e-commerce (Yadav et al., 2022c).

For industries hit most by the pandemic, digital and innovative entrepreneurship appears to be the answer to limiting shifts in corporate strategy (Mohapatra et al., 2021). The quality and availability of online resources have increased dramatically due to recent infrastructure upgrades in several countries. The handicraft industry has made great strides in recent years, especially on e-commerce platforms, thanks to the preparedness and strategies of businesses in the form of price sensitivity and adjustments to online buying methods, among other things (Agaton & Cueto, 2021). Human resource management (evaluating employee performance, providing telework options), product design, material handling, production, quality control, marketing, advertising, and sales are just some of the many business processes that rely on digital tools (Muhamad et al., 2021).

Managers require an in-depth familiarity with e-commerce to restore their company's reputation and win back lost customers (Farooq et al., 2019). SMEs should improve their online and logistical presence to serve their customers better. In addition, handicraft business owners should be aware of how crucial their Internet connection is to the success of their operations, which in turn affects the prices the company may charge and the level of protection its customers' data enjoys. Blockchain technology can speed up this digital transformation by eliminating problems like inefficient data management (Massaro, 2021). In addition, handicraft business owners need to ensure they have enough staff to manage the virtual handicraft storefront and respond to customers' inquiries and orders (Zahra, 2021).

According to social networking, primarily researched in sociological terms, businesses engage in social power through digital connectedness to get a competitive edge or leverage in the digital market–software system (Liu et al., 2020). A study by Liu et al., (2020) found. These new proprietors of handicrafts can develop their own by utilising their social networking and the many e-commerce and social media platforms available today (Li et al., 2018). In addition, the actions and judgements of an entrepreneur regarding developing a brand will affect the varying expansion and transactions of a business that supplied multiple services before the Pandemic (Fisher, 2012). Therefore, technological progress is essential for educating new handicraft business owners on introducing new products and services. Linked diversification, effective firm reaction, and novel tactics might help reduce risk, even in the face of unprecedented economic calamities like the Pandemic (Yadav et al., 2022b).

Conclusion

The pandemic accelerated the digital shift of small-scale industries and created an economic climate that encouraged handicraft business owners to use technological advances. Many studies have discussed entrepreneurs using various theoretical lenses. This research focused on effectuation, resilience, bricolage, and emotional abilities that deal with innovations after economic turmoil. Using an inductive qualitative research methodology, the authors of this Study (Yadav et al., 2022a) investigated the drivers and barriers of online entrepreneurial innovation in the handicraft sectors after COVID-19. The results revealed internal (professional growth, personal, and social) and external (market demand and limits) aspects (after the economic calamities). Compared to large corporations, small firms in India's handicraft industry often lacked sufficient finance, organisational, and technological resources, making them more vulnerable to the pandemic's restrictions. This industry was unprepared for the upheavals, which occurred longer and hit harder than expected. Despite minimal government support for small-scale industries, new and growing entrepreneurs in the handicraft sector discovered a way to flourish in industry innovation through digital and innovative entrepreneurship and the increased online demand for services, accommodation, and supply of items.

Contribution and consequences

The study added two significant pieces of information to the body of knowledge. To begin, external and internal forces motivate the development of new digital tools for handicraft businesses. If the digital and traditional markets, digital infrastructure, other stakeholders, and entrepreneurs are not prepared for the shifts, then problems will arise. Economic calamities have a dual role in the innovation-through-digitisation triad as both a hindrance and an external enabler.

The government should take measures to (a) provide financial aid in the form of grants or low-interest loans to budding handicraft business owners, Promote public–private partnerships; (b) lowering financial and technical barriers for small-scale industries; (c) educate and raise awareness among aspiring handicraft business owners to improve their financial literacy and technical skills; (d) offering start-up assistance for marketing and

other business requirements; and (e) advancing and enhancing technological developments in tiny businesses and the handicraft industry for the expanding economic value.

Limitations and directions for future research

This research examined how new and upcoming COVID-19 handicraft business owners viewed and experienced the digital business development process. Therefore, there are several restrictions on research. Statistical analysis is impossible with qualitative data since it relies on respondents' narratives rather than complex numbers. Findings cannot be replicated in a large population with the same degree of precision as is possible with the quantitative research approach. This qualitative study used a semi-structured questionnaire to encourage open discussion among participants. Neither the quantitative method nor limited, pre-formatted questionnaires with predetermined questions and answers could be used to gather information of this nature. Future research may mix qualitative and quantitative approaches to reap the benefits of both and minimise the limitations of each.

Our online survey included responses from 46 new people working in the handmade goods industry. Online qualitative surveys have several advantages over traditional methods. These include lower risk for researchers due to a lack of direct contact with participants, shorter data collection and analysis times, and more convenient interview scheduling (Braun et al., 2020). Online surveys have many advantages but disadvantages, such as low response rates, unrepresentative samples, internet restrictions, and a lack of follow-up data (Rice et al., 2017). Due to the constraints of limited face-to-face interaction, participant and researcher safety was prioritised throughout this investigation. Because of the limited number of respondents, we cannot generalise the results of this study to all handicraft business owners in the case country, even though they are based solely on the participants' perceptions and experiences after the pandemic. In future research, it may be possible to include new entrepreneurs from various industries, such as business process outsourcing, digital solutions, online event management, micro-financing, etc.

In addition, this study only contained responses from new handicraft business owners. Research suggests it's essential to consider the perspectives of various groups when making policy decisions. Future research may include other actors in digital entrepreneurship, such as LGUs and support units, legislators, and consumers, to make better-informed decisions for initiatives that aid the economy and new entrepreneurs. And businesspeople who still rely on traditional media.

Personal accounts of encounters with the pandemic were also explored in this study. It's worth noting that many humanitarian issues compounded the pandemic's effects in many countries, notably India (Cueto & Agaton, 2021). Terrorist acts, wars, conflicts, and natural and artificial disasters all fall under this category. The frequency with which disasters strike businesses, particularly in the digital economy, and the strategies employed by new handicraft business owners in the face of these setbacks are essential topics for future study.

Abbreviations

DCA	Deductive content analysis
GDP	Gross domestic product
DSA	Digital social entrepreneurship
DIIP	Department of industry innovation program
MSME	Micro, small and medium enterprises

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Data availability

The cleaned data can be found in Tables 1, 2, 3. The appropriate writers should be contacted if you need raw data.

Declarations

Competing interests

No authorship conflict exists. All study participants consented to the informed consent statement.

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References

- Agaton, C. B., & Cueto, L. J. (2021). Learning at home: Parents' lived experiences on distance learning after COVID-19 Pandemic in the Philippines. *International Journal of Evaluation and Research in Education (IJERE)*, 10, 901–911. <https://doi.org/10.11591/ijere.v10i3.21136>
- Agoot, F. T. (2015). International management training workshops for school leaders and aspiring principals. *AIMSKILLS World Management Training Center DepEd Adv. No. 1* 69.
- Al Rayes, Z.O., Azzam Kayiaseh, H.A. (2017). Demand and Supply Firms' Interlock: A Youth-Based Entrepreneurial Initiative. In *Leadership, Innovation and Entrepreneurship as Driving Forces of the Global Economy*. Springer Proceedings in Business and Economics. Springer, pp. 619–29.
- Aldrich, H. (2014). The democratization of entrepreneurship? Hackers, maker spaces, and crowdfunding. Annual Meeting of the Academy of Management, Philadelphia, August 2014. <https://doi.org/10.5465/ampp.2014.10622symposium>
- Al-Mubarak, H. M., & Busler, M. (2017). Challenges and opportunities of innovation and incubators as a knowledge-based economy tool. *Journal of Innovation and Entrepreneurship*, 6(1), 1–18.
- Almus, M., & Nerlinger, E. A. (1999). Growth of new technology-based firms: Which factors matter? *Small Business Economics*, 13(2), 141–154.
- Alrabba, M. I. M. (2017). The determinants of unemployment rate in Jordan: A multivariate approach. *International Journal of Economics and Finance*, 9(11), 109–117.
- Armstrong, M. (2006). Competition in two-sided markets. *The RAND Journal of Economics*, 37(3), 668–691.
- Anggadwita, G, Martini, E., Hendayani, R., Kamil, M.R. (2021). The Role of Technology and Innovation Capabilities in Achieving Business Resilience of Small scale Industries After Covid-19: Empirical Study. Paper presented at 2021 9th International Conference on Information and Communication Technology (ICT), Yogyakarta, Indonesia, August 3–5.
- Antonizzi, J., Smuts, H. (2020). The Characteristics of digital entrepreneurship and digital transformation: A systematic literature review. In *Responsible Design, Implementation and Use of Information and Communication Technology*. Lecture Notes in Computer Science. Springer, pp. 239–51.
- Apriyanti, H.W., Yuvitasari, E. (2021). The role of digital utilization in accounting to enhance small scale industries' performance after COVID-19 pandemic: Case study in Semarang, Central Java, Indonesia. In *Complex, Intelligent and Software Intensive Systems*. Lecture Notes in Networks and Systems. Springer, pp. 495–504.
- Asiati, D., Ngadi, N., Aini, Y.N, Purba, Y.A. (2021). Sustainability of Small scale industries in Indonesia. In *Handbook of Research on Sustaining SMEs and Entrepreneurial Innovation in the Post-COVID-19 Era*. Advances in Business Strategy and Competitive Advantage. Hershey, PA: IGI Global, pp. 504–26.
- Atwine, B., Okumu, I. M., & Nyanzi, J. B. (2023). What drives the dynamics of employment growth in firms? Evidence from East Africa. *Journal of Innovation and Entrepreneurship*, 12, 33. <https://doi.org/10.1186/s13731-023-00295-y>
- Ayinaddis, S. G. (2023). The effect of innovation orientation on firm performance: evidence from micro and small manufacturing firms in selected Awi Zone Ethiopia towns. *Journal of Innovation and Entrepreneurship*, 12, 26. <https://doi.org/10.1186/s13731-023-00290-3>
- Baker, T., & Nelson, R. E. (2005). Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Administrative Science Quarterly*, 50, 329–366. <https://doi.org/10.2189/asqu.2005.50.3.329>
- Batac, K. I. T., Baquiran, J. A., & Agaton, C. B. (2021). Qualitative Content Analysis of Teachers' Perceptions and Experiences in Using Blended Learning after the COVID-19 Pandemic. *International Journal of Learning, Teaching and Educational Research*, 20, 225–243. <https://doi.org/10.26803/ijlter.20.6.12>
- Belitski, M., Guenther, C., Kritikos, A. S., & Thurik, R. (2021). Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*. <https://doi.org/10.1007/s11187-021-00544-y>

- Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2020). The online survey is a qualitative research tool. *International Journal of Social Research Methodology*, 24, 641–654. <https://doi.org/10.1080/13645579.2020.1805550>
- Carney, R. W., & Witt, M. A. (2014). The role of the state in Asian business systems. *The Oxford Handbook of Asian Business Systems*, 538–560.
- Chalmers, D., MacKenzie, N. G., & Carter, S. (2020). Artificial intelligence and entrepreneurship: Implications for venture creation in the fourth industrial revolution. *Entrepreneurship Theory and Practice*, 1042258720934581.
- Charlebois, S., Juhasz, M., & Music, J. (2021). Supply chain responsiveness to a (post)-pandemic grocery and food service e-commerce economy: An exploratory Canadian case study. *Businesses*, 1, 72–90. <https://doi.org/10.3390/businesses1020006>
- Cohen, B., Amorós, J. E., & Lundy, L. (2017). The productive potential of emerging technology to support startups and new ecosystems. *Business Horizons*, 60(6), 741–884. <https://doi.org/10.1016/j.bushor.2017.06.004>
- Collera, A. A., & Agaton, C. B. (2021). Opportunities for production and utilisation of green hydrogen in the Philippines. *International Journal of Energy Economics and Policy*, 11, 37–41.
- Coppola, D. (2021). Worldwide e-Commerce Share of Retail Sales 2015–2024. Statista. Available online: <https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-Worldwide/> (accessed on 30 October 2021).
- Costa, J., & Castro, R. (2021). SMEs must go online—e-commerce as an escape hatch for resilience and survivability. *Journal of Theoretical and Applied Electronic Commerce Research*, 16, 3043–3062. <https://doi.org/10.3390/jtaer16070166>
- Cueto, L. J., & Agaton, C. B. (2021). Pandemic and Typhoon: Positive impacts of a double disaster on mental health of female students in the Philippines. *Behavioral Sciences*, 11, 64. <https://doi.org/10.3390/bs11050064>
- Cueto, L. J., Frisnedi, A. F. D., Collera, R. B., Batac, K. I. T., & Agaton, C. B. (2022). Digital Innovations in Small scale Industries after Economic Calamities: Experiences and Challenges of New Entrepreneurs. *Administrative Sciences*, 12(1), 8. <https://doi.org/10.3390/admsci12010008>
- Damoah, O. B. O. (2020). Strategic factors predicting the likelihood of youth entrepreneurship in Ghana: A logistic regression analysis. *World Journal of Entrepreneurship, Management and Sustainable Development*, 16, 389–401. <https://doi.org/10.1108/WJEMSD-06-2018-0057>
- Dannenberg, P., Fuchs, M., Riedler, T., & Wiedemann, C. (2020). Digital Transition by COVID-19 Pandemic? The German Food Online Retail. *Tijdschrift Voor Economische En Sociale Geografie*, 111, 543–560. <https://doi.org/10.1111/tesg.12453>
- Davis, G. F., & Marquis, C. (2005). Prospects for organization theory in the early twenty-first century: Institutional fields and mechanisms. *Organization Science*, 16(4), 332–343.
- Davidson, E., & Vaast, E. (2010). Digital entrepreneurship and its socio-material enactment. In *2010 43rd Hawaii International Conference on System Sciences* (pp. 1–10). IEEE.
- Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of business venturing*, 30(5), 674–695.
- Del Olmo-García, F., Crecente, F., & Sarabia, M. (2020). Macroeconomic and institutional drivers of early failure among self-employed entrepreneurs: An eurozone analysis. *Economic Research-Ekonomska Istraživanja*, 33, 1830–1848. <https://doi.org/10.1080/1331677X.2020.1754268>
- DIIP, (2021). 2020 MSME Statistics. Department of Trade and Industry. Available online: <https://www.dti.gov.ph/resources/msme-statistics/> (accessed on 30 October 2021).
- Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalisation. *Journal of Business Research*, 112, 119–127. <https://doi.org/10.1016/j.jbusres.2020.03.004>
- European Commission. (2015). Communication from the Commission to the European parliament, the Council, the European economic and social committee and the Committee of the regions: Closing the loop: An EU action plan for the circular economy (Report COM/2015/0614). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0614>
- Fainshmidt, S., Judge, W. Q., Aguilera, R. V., & Smith, A. (2018). Varieties of institutional systems: A contextual taxonomy of understudied countries. *Journal of World Business*, 53(3), 307–322.
- Fang, Y., Henfridsson, O., & Jarvenpaa, S. L. (2018). Editorial on generating business and social value from digital entrepreneurship and innovation. *The journal of strategic information systems*, 27(4), 275–277.
- Farooq, Q., Peihua, Fu., Hao, Y., Jonathan, T., & Zhang, Y. (2019). A review of management and importance of e-commerce implementation in service delivery of private express enterprises of China. *SAGE Open*, 9, 2158244018824194. <https://doi.org/10.1177/2158244018824194>
- Fisher, G. (2012). Effectuation, Causation, and Bricolage: A behavioral comparison of emerging theories in entrepreneurship research. *Entrepreneurship Theory and Practice*, 36, 1019–1051. <https://doi.org/10.1111/j.1540-6520.2012.00537.x>
- Frederick, H., Kuratko, D. F., & O'Connor, A. (2016). *Entrepreneurship: Theory, process, practice*. Cengage Learning.
- Garud, R., Kumaraswamy, A., & Karnøe, P. (2010). Path dependence or path creation? *Journal of Management Studies*, 47(4), 760–774. <https://doi.org/10.1111/j.1467-6486.2009.00914.x>
- Gavrila, S., & De Lucas Ancillo, A. (2020). Entrepreneurship, Innovation, digitisation and digital transformation toward sustainable growth within the pandemic environment. *International Journal of Entrepreneurial Behavior & Research*. <https://doi.org/10.1108/ijeb-05-2021-0395>
- Gawer, A. (2009). Platform dynamics and strategies: from products to services. *Platforms, markets and innovation*, 45, 57.
- Geibel, R.C., Manickam, M. (2017). Analysis of Start-up Ecosystems in Germany and the USA. In *Leadership, Innovation and Entrepreneurship as Driving Forces of the Global Economy*. Springer Proceedings in Business and Economics. Springer, pp. 639–49.
- Gonthier, J., & Chirita, G. M. (2019). The role of corporate incubators as invigorators of innovation capabilities in parent companies. *Journal of Innovation and Entrepreneurship*, 8(1), 1–21.
- Haneberg, D. H. (2021). SME managers' learning from crisis and productive behaviour. *Journal of Small Business and Enterprise Development*, 28, 873–887. <https://doi.org/10.1108/JSBED-01-2021-0009>

- Hennessey, B., Moran, S., Altringer, B., & Amabile, T. M. (2015). Extrinsic and intrinsic motivation. *Wiley encyclopedia of management* (pp. 1–4). John Wiley & Sons Ltd.
- Herrera, D. (2020). *MSME Financing Instruments in Latin America and the Caribbean After COVID-19*. Discussion Paper N° IDB-DP-771. Washington, DC: IDB. <https://doi.org/10.18235/0002361>
- Hidalgo, D. T., Francis, P. B., Marquez, P. B., Sarmiento, J. K., Alvarez, A., Ong, D. U., & Balaria, F. E. (2021). Impact of COVID-19 on micro and small entrepreneur (MSE) graduates of the kapatid mentor me program of the department of trade and industry. *International Journal of Advanced Engineering, Management and Science*, 7, 19–26. <https://doi.org/10.22161/ijaems.71.4>
- Holmström, J. (2022). From AI to digital transformation: The AI readiness framework. *Business Horizons*, 65(3), 329–339.
- Holmström, J., & Hällgren, M. (2021). AI management beyond the hype: exploring the co-constitution of AI and organizational context. *AI & SOCIETY*, 1–11.
- Huang, J., Henfridsson, O., Liu, M. J., & Newell, S. (2017). Growing on steroids: Rapidly scaling the user base of digital ventures through digital innovation. *MIS Quarterly*, 41(1), 301–314.
- Ibáñez, M. J., Guerrero, M., Yáñez-Valdés, C., & Barros-Celum, S. (2021). Digital social entrepreneurship: The N-Helix response to stakeholders' COVID-19 needs. *The Journal of Technology Transfer*. <https://doi.org/10.1007/s10961-021-09855-4>
- Igbinakhas, I. (2021). Determinants for SMEs and Entrepreneurship Success Post-Pandemic. In *Handbook of Research on Strategies and Interventions to Mitigate COVID-19 Impact on SMEs*. Advances in Business Strategy and Competitive Advantage. IGI Global, pp. 168–85.
- Išoraitė, M., & Gulevičiūtė, G. (2021). A study of online entrepreneurship education under a pandemic. *Entrepreneurship and Sustainability Issues*, 8, 179–192. [https://doi.org/10.9770/jesi.2021.8.3\(10\)](https://doi.org/10.9770/jesi.2021.8.3(10))
- Jamali, D., & Carroll, A. (2017). Capturing advances in CSR: Developed versus developing country perspectives. *Business Ethics: A European Review*, 26(4), 321–325.
- Jorge-Vázquez, J., Peana Chivite-Cebolla, M., & Salinas-Ramos, F. (2021). The digitalization of the European agri-food cooperative sector determining factors to embrace information and communication technologies. *Agriculture*, 11, 514. <https://doi.org/10.3390/agriculture11060514>
- Juergensen, J., Guimón, J., & Narula, R. (2020). European SMEs amidst the COVID-19 crisis: Assessing impact and policy responses. *Journal of Industrial and Business Economics*, 47, 499–510. <https://doi.org/10.1007/s40812-020-00169-4>
- Kaur, H., Sodhi, D., Aggarwal, R., & Yadav, U. S. (2023a). Managing Human Resources in Digital Marketing. In *Digital Transformation, Strategic Resilience, Cyber Security and Risk Management* (pp 155–162). Emerald Publishing Limited.
- Kaur, H., Sood, K., Yadav, U. S., & Grima, S. (2023b). Sustainable Solutions for Insurance and Risk Management. *The Impact of Climate Change and Sustainability Standards on the Insurance Market*, 359–372.
- Kee, H., Mui, D., Yusoff, Y. M., & Khin, S. (2019). The role of support on start-up success: A PLS-SEM approach. *Asian Academy of Management Journal*, 24, 43–59. <https://doi.org/10.21315/aamj2019.24.s1.4>
- Khanna, T., & Palepu, K. (1997). Why focused strategies. *Harvard Business Review*, 75(4), 41–51.
- Kim, D. (2021). Visualising the regional patterns of two crises: The COVID-19 outbreak and decreasing MSME sales after three different phases of 2020 in Korea. *Environment and Planning a: Economy and Space*, 53, 1591–1593. <https://doi.org/10.1177/0308518X211013033>
- Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2018). Digital entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 25, 353–375. <https://doi.org/10.1108/ijeb-06-2018-0425>
- Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Reyes, C. A. M., Prochotta, A., Steinbrink, K. M., & Berger, E. S. C. (2020). Start-ups in times of crisis—A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, 13, e00169. <https://doi.org/10.1016/j.jbvi.2020.e00169>
- Kumar, A., Mandal, M., & Yadav, U. S. (2022a). Motivation and Challenges in Career Choice and Well Being of Women Entrepreneurs; Experiences of Small Businesses of Lucknow, Uttar Pradesh. *Journal of Positive School Psychology*, 10890–10906.
- Kumar, A., Mandal, M., & Yadav, U. S. (2022b). Business and entrepreneurial strategies for development of Indian small industries (MSME) during post-pandemic COVID-19 Indian artisans as entrepreneurs. *Empir Econ Lett*, 21(4), 153–162.
- Kyngäs, H. (2020a). Inductive content analysis. *The application of content analysis in nursing science research* (pp. 13–21). Springer.
- Kyngäs, H. (2020b). Qualitative research and content analysis. *The application of content analysis in nursing science research* (pp. 3–11). Springer.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1–2), 3–27.
- Li, L., Fang, Su., Zhang, W., & Mao, J.-Y. (2018). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal*, 28, 1129–1157. <https://doi.org/10.1111/isj.12153>
- Lim, K. Y. (2019). Modelling the dynamics of corruption and unemployment with heterogeneous labour. *Economic Modelling*, 79, 98–117.
- Liñán, F., & Jaén, I. (2020). The Covid-19 Pandemic and entrepreneurship: Some reflections. *International Journal of Emerging Markets*. <https://doi.org/10.1108/ijem-05-2020-0491>
- Liu, G., Fei, S., Yan, Z., Chia-Huei, Wu, Tsai, S.-B., & Zhang, J. (2020). An empirical study on response to online customer reviews and E-commerce sales: From the mobile information system perspective. *Mobile Information Systems*, 2020, 1–12. <https://doi.org/10.1155/2020/8864764>
- Liu, H., Ke, W., Wei, K. K., & Hua, Z. (2013). The impact of IT capabilities on firm performance: The mediating roles of absorptive capacity and supply chain agility. *Decision Support Systems*, 54, 1452–1462. <https://doi.org/10.1016/j.dss.2012.12.016>
- Lobe, B., & Morgan, D. L. (2020). Assessing the effectiveness of video-based interviewing: A systematic comparison of video-conferencing based dyadic interviews and focus groups. *International Journal of Social Research Methodology*, 24, 301–312. <https://doi.org/10.1080/13645579.2020.1785763>

- Lopes, J., Antunes, H., & Rodrigues, R. (2018). Comparative entrepreneurship between Western Europe and Latin America. *Entrepreneurship Research Journal*, 8, 20170058. <https://doi.org/10.1515/erj-2017-0058>
- Lopes, J. M., Gomes, S., Santos, T., Oliveira, M., & Oliveira, J. (2021). Entrepreneurial intention before and after COVID-19—a case study on Portuguese University students. *Education Sciences*, 11, 273. <https://doi.org/10.3390/educsci11060273>
- Lungu, A. E., Bogoslov, I. A., Stoica, E. A., & Georgescu, M. R. (2021). From decision to survival—shifting the paradigm in entrepreneurship after the COVID-19 pandemic. *Sustainability*, 13, 7674. <https://doi.org/10.3390/su13147674>
- Ma, H., Qiao, X., & Xu, Y. (2015). Job creation and job destruction in China during 1998–2007. *Journal of Comparative Economics*, 43(4), 1085–1100.
- Maritz, A., Perenyi, A., de Waal, G., & Buck, C. (2020). Entrepreneurship as the unsung hero after the current COVID-19 economic crisis: Australian perspectives. *Sustainability*, 12, 4612. <https://doi.org/10.3390/su12114612>
- Massaro, M. (2021). Digital transformation in the healthcare sector through blockchain technology. Insights from Academic Research and business developments. *Technovation*. <https://doi.org/10.1016/j.technovation.2021.102386>
- Meurer, M. M., Waldkirch, M., Schou, P. K., Bucher, E. L., & Burmeister-Lamp, K. (2021). Digital affordances: How entrepreneurs access support in online communities after the COVID-19 pandemic. *Small Business Economics*. <https://doi.org/10.1007/s11187-021-00540-2>
- Meyer, A. D. (1982). Adapting to Environmental Jolts. *Administrative Science Quarterly*, 27, 515–537. <https://doi.org/10.2307/2392528>
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2), 340–363.
- Mohapatra, B., Tripathy, S., Singhal, D., & Saha, R. (2021). Significance of digital and innovative entrepreneurship in Manufacturing sectors: Examination of critical factors after Covid-19. *Research in Transportation Economics*. <https://doi.org/10.1016/j.retrec.2021.101134>
- Muhamad, S., Kusairi, S., Man, M., Majid, N. F. H., & Kassim, W. Z. W. (2021). Digital adoption by enterprises in Malaysian industrial sectors after COVID-19 Pandemic: A data article. *Data in Brief*, 37, 107197. <https://doi.org/10.1016/j.dib.2021.107197>
- Mukhoryanova, O., Kuleshova, L., Rusakova, N., & Mirgorodskaya, O. (2021). Sustainability of micro-enterprises in the digital economy. *E3S Web of Conferences*, 250, 06008. <https://doi.org/10.1051/e3sconf/202125006008>
- Nambisan, S. (2017). Digital entrepreneurship: Toward a digital and innovative entrepreneurship perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41, 1029–1055. <https://doi.org/10.1111/etap.12254>
- OECD. (2015). *The Missing Entrepreneurs 2015. The Missing Entrepreneurs*. Paris: OECD.
- Ojala, A., Evers, N., & Rialp, A. (2018). Extending the international new venture phenomenon to digital platform providers: A longitudinal case study. *Journal of World Business*, 53(5), 725–739.
- Okumu, I. M., Bbaale, E., & Guloba, M. M. (2019). Innovation and employment growth: Evidence from manufacturing firms in Africa. *Journal of Innovation and Entrepreneurship*, 8(1), 7.
- Page, A., & Holmström, J. (2023). Enablers and inhibitors of digital startup evolution: A multi-case study of Swedish business incubators. *Journal of Innovation and Entrepreneurship*, 12, 35. <https://doi.org/10.1186/s13731-023-00306-y>
- Parilla, E. S. (2021). Effects of COVID-19 pandemic on micro, small, and medium-sized enterprises in the Province of Ilocos Norte Philippines. *RSF Conference Series Business, Management and Social Sciences*, 1, 46–57. <https://doi.org/10.31098/bmss.v1i2.260>
- Pettersen, I. B., Aarstad, J., Høvig, Ø. S., & Tobiassen, A. E. (2015). Business incubation and the network resources of startups. *Journal of Innovation and Entrepreneurship*, 5(1), 1–17.
- Priyono, A., Moin, A., & Putri, V. N. A. O. (2020). Identifying digital transformation paths in the business model of SMEs after the COVID-19 pandemic. *Journal of Open Innovation: Technology, Market, and Complexity*, 6, 104. <https://doi.org/10.3390/joitmc6040104>
- Pu, G., Qamruzzaman, Md., Mehta, A. M., Naqvi, F. N., & Karim, S. (2021). Innovative finance, technological adaptation and SMEs sustainability: The mediating role of government support after COVID-19 pandemic. *Sustainability*, 13, 9218. <https://doi.org/10.3390/su13169218>
- Qiu, C. Q., & Man, M. M. K. (2021). The challenges and solutions for digital entrepreneurship platforms in enhancing firm's capabilities. *International Journal of Business and Management*, 16, 21–25. <https://doi.org/10.5539/ijbm.v16n11p21>
- Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, 3, 369–387. <https://doi.org/10.5281/zenodo.887089>
- Quimba, F.M.A., and Rosellon, M.A.D. (2019). Impact of Government Incentive on MSME Innovation. Available online: <https://www.econstor.eu/handle/10419/240978> (accessed on 30 October 2021).
- Ratinho, T., Amezcua, A., Honig, B., & Zeng, Z. (2020). Supporting entrepreneurs: A systematic review of literature and an agenda for research. *Technological Forecasting & Social Change*, 154, 1–20. <https://doi.org/10.1016/j.techfore.2020.119956>
- Reuschke, D., Mason, C., & Syrett, S. (2021). Digital futures of small businesses and entrepreneurial opportunity. *Lots*, 128, 102714. <https://doi.org/10.1016/j.futures.2021.102714>
- Reyes, L. G. (2021). Philippine private sector response, strategies, and state-business relations toward economic recovery and growth post-COVID-19. *Business and Politics*. <https://doi.org/10.1017/bap.2021.13>
- Rice, S., Winter, S. R., Doherty, S., & Milner, M. (2017). Advantages and disadvantages of using internet-based survey methods in aviation-related research. *Journal of Aviation Technology and Engineering*, 7, 5. <https://doi.org/10.7771/2159-6670.1160>
- Rodríguez-Hidalgo, A. J., Pantaleón, Y., Dios, I., & Falla, D. (2020). Fear of COVID-19, stress, and anxiety in university undergraduate students: a predictive model for depression. *Frontiers in Psychology*, 11, 591797.
- Rosecrance, R. (1996). The rise of the virtual state. *Foreign Affairs*, 45–61.
- Rushita, D., Sood, K., & Yadav, U. S. (2023). Cryptocurrency and digital money in the new era. In *Digital Transformation, Strategic Resilience, Cyber Security and Risk Management* (Vol. 111, pp. 179–190). Emerald Publishing Limited.
- Sahoo, P., & Ashwani. (2020). COVID-19 and Indian economy: Impact on growth, manufacturing, trade and MSME sector. *Global Business Review*, 21, 1159–1183. <https://doi.org/10.1177/0972150920945687>

- Sahut, J.-M., Iandoli, L., & Teulon, F. (2019). The age of digital entrepreneurship. *Small Business Economics*, 56, 1159–1169. <https://doi.org/10.1007/s11187-019-00260-8>
- Salac, R. A., & Kim, Y. S. (2016). A study on the internet connectivity in the Philippines. *Asia Pacific Journal of Business Review*, 1, 67–88. <https://doi.org/10.20522/APJBR.2016.1.1.67>
- Samara, G., & Terzian, J. (2021). Challenges and opportunities for digital entrepreneurship in developing countries. *Digital Entrepreneurship* (pp. 283–302). Springer.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26, 243–263. <https://doi.org/10.5465/amr.2001.4378020>
- Shafi, M., Liu, J., & Ren, W. (2020). Impact of COVID-19 Pandemic on micro, small, and Medium-sized Enterprises operating in Pakistan. *Research in Globalisation*, 2, 1000178. <https://doi.org/10.1016/j.resglo.2020.100018>
- Shankar, R. K., & Shepherd, D. A. (2019). Accelerating strategic fit or venture emergence: Different paths adopted by corporate accelerators. *Journal of Business Venturing*, 34(5), 105886.
- Shepherd, D. A., & Gruber, M. (2021). The lean startup framework: Closing the academic–practitioner divide. *Entrepreneurship Theory and Practice*, 45(5), 967–998.
- Shiferaw, R. M., Birbisa, Z. A., & Werke, S. Z. (2023). Entrepreneurial leadership, learning organization and organizational culture relationship: A systematic literature review. *Journal of Innovation and Entrepreneurial*, 12, 38. <https://doi.org/10.1186/s13731-023-00305-z>
- Singla, N., Sood, K., Grima, S., & Yadav, U. S. (2023). Target 8.8: Protect labor rights and promote a safe working environment. *The Impact of Climate Change and Sustainability Standards on the Insurance Market*, 373–392.
- Steier, L. P., Chua, J. H., & Chrisman, J. J. (2009). Embeddedness perspectives of economic action within family firms. *Entrepreneurship Theory and Practice*, 33(6), 1157–1167.
- Steininger, D. M. (2019). Linking information systems and entrepreneurship: A review and agenda for IT-associated and digital entrepreneurship research. *Information Systems Journal*, 29, 363–407. <https://doi.org/10.1111/isj.12206>
- Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, 49, 55–73. <https://doi.org/10.1007/s11187-017-9867-5>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509–533.
- Tran, L. T. T. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of Retailing and Consumer Services*, 58, 102287. <https://doi.org/10.1016/j.jretconser.2020.102287>
- Tripathi, M. A., Tripathi, R., Yadav, U. S., & Shastri, R. K. (2022a). Gig Economy: A paradigm shift towards Digital HRM practices. *Journal of Positive School Psychology*, 6(2), 5609–5617.
- Tripathi, M. A., Tripathi, R., Yadav, U. S., & Shastri, R. K. (2022b). Gig economy: Reshaping strategic HRM in the era of industry 4.0 and artificial intelligence. *Journal of Positive School Psychology*, 3569–3579.
- Tripathi, M. A., Tripathi, R., & Yadav, U. S. (2022c). Identifying the critical factors of physical gig economy usage: A study on client's perspective. *International Journal of Health Sciences*, 6, 4236–4248.
- Tudy, R. A. (2020). From the corporate world to freelancing: The phenomenon of working from home in the Philippines. *Community, Work & Family*, 24, 77–92. <https://doi.org/10.1080/13668803.2020.1809994>
- UNCTAD. (2021). How COVID-19 triggered the digital and e-commerce turning point. *United Nations Conference on Trade and Development*. Available online: <https://unctad.org/news/how-covid-19-triggered-digital-and-e-commerce-turning-point> (accessed on 30 October 2021).
- von Briel, F., Davidsson, P., & Recker, J. (2018). Digital technologies as external enablers of new venture creation in the IT hardware sector. *Entrepreneurship Theory and Practice*, 42(1), 47–69.
- WHO. (2021). WHO Coronavirus (COVID-19) Dashboard. World Health Organization. Available online: <https://covid19.who.int/> (accessed on 17 November 2021).
- Wiliandri, R. (2020). A conceptual approach to identify factors affecting the digital transformation of micro, small and medium-sized enterprises (Small scale Industries) after the Covid-19 pandemic in Indonesia. *Ekonomi Bisnis*, 25, 66–85. <https://doi.org/10.17977/um042v25i2p66-85>
- Xing, K., Cropley, D. H., Oppert, M. L., & Singh, C. (2021). Readiness for Digital Innovation and Industry 4.0 Transformation: Studies on Manufacturing Industries in the City of Salisbury. In *Business Innovation with New ICT in the Asia-Pacific: Case Studies*. Berlin/Heidelberg: Springer, pp. 155–76.
- Yadav, G. P., & Yadav, U. S. (2022). A profitable and new approaches of social innovation in the handicraft sector. Case study: Social innovation through the ITC component on the financial mechanism of the state. *Journal of Positive School Psychology*, 10558–10573.
- Yadav, U. S., Sood, K., Tripathi, R., Grima, S., & Tripathi, M. A. (2023b). An analysis of the impact on India's sustainable development resulting from women in small enterprises' fin-tech and financial awareness during COVID-19 using the (UTAUT) model. In *Digital Transformation, Strategic Resilience, Cyber Security and Risk Management* (Vol. 111, pp. 71–85). Emerald Publishing Limited.
- Yadav, U. S., Tripathi, R., & Tripathi, M. A. (2020). Strategies for development of the handicraft sector (small industries) in India. *SEDME Small Enterprises Development, Management & Extension Journal*, 47(3), 175–193.
- Yadav, U. S., Tripathi, R., & Tripathi, M. A. (2022a). Digital analysis of the transformation of institutions in the knowledge and innovation system of the handmade carpet industry. *SEDME (small Enterprises Development, Management & Extension Journal)*, 49(1), 107–124. <https://doi.org/10.1177/09708464221096903>
- Yadav, U. S., Tripathi, R., Tripathi, M. A., Kumar, A., & Mandal, M. (2023a). Evaluation of factors affecting entrepreneurship: A case of Indian women in the handicraft industry. *Humanities and Social Sciences Communications*, 10(1), 1–17.
- Yadav, U. S., Tripathi, R., Tripathi, M. A., Rawat, R., & Kushwaha, J. (2022b). Performance of women artisans as entrepreneurs in odour in Uttar Pradesh to boost economy: Strategies and away towards global handicraft index for small business. *Academy of Marketing Studies Journal*, 261(2), 1–19.
- Yadav, U. S., Tripathi, R., & Yadav, G. P. (2022d). Indian Terracotta of Gorakhpur and Bindi (Tikuli) in Balia and women artisan in the digital era: A case study on the traditional Bindi Handicraft in Uttar Pradesh. *Asian Journal of Management, Entrepreneurship and Social Science*, 2(03), 18–38.

- Yadav, U. S., Tripathi, R., Yadav, G. P., & Shastri, R. K. (2022e). Strategies for developing handicraft sector in India post-pandemic Covid-19: Artisans as entrepreneurs in the current scenario. *Indian Journal of Economics*, 5(403), 545–569.
- Yadav, U. S., Tripathi, R., Yadav, G. P., & Tripathi, M. A. (2022c). Proposal of a global handicraft index for sustainable development: A visionary approach for small industry and developing strategies for handicraft (Rural Industry). *European Journal of Sustainable Development Research*. <https://doi.org/10.21601/ejosdr/11909>
- Zahra, S. A. (2021). International entrepreneurship in the post-Covid world. *Journal of World Business*, 56, 101143. <https://doi.org/10.1016/j.jwb.2020.101143>

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