Digital Adoption as a Survival Strategy: A Case Study of Small and Medium Enterprises in Post-Pandemic Emerging Markets

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ABSTRACT

A key structural weakness of small and medium enterprises (SMEs) in emerging markets revealed during the COVID-19 pandemic was the need for unprecedented acceleration of digital adoption as a basic survival tactic. The present paper presents a qualitative case study analysis that focuses on the use of digital tools and platforms by SMEs in emerging market economies to keep running, maintain their market positions, and regain organizational resilience during the post-pandemic era, especially in South and Southeast Asian countries. Inspired by the two theories of Dynamic Capabilities (DC) Theory (Teece, 2007) and Resource Based View (RBV) (Barney, 1991) are the theoretical underpinnings of this study. The study reveals four main themes: (1) the shift from reactive to proactive digital adoption; (2) the enabling effect of a government and institutional ecosystem; (3) human capital and digital literacy as key for the success of digitalization; and (4) financial accessibility of digital strategies as a mediating factor for their sustainability. The findings add to the existing research literature, building on SME resilience as they provide empirical evidence with useful granularity and apply to a largely non-English-speaking context – emerging economies – thereby complementing theoretical work mainly developed in terms of the advanced economies context. The practical implications are discussed for SME managers, decision makers in the government, and the financial sector.

Keywords: Digital Transformation, SME Resilience, Emerging Markets, Post-Pandemic Recovery, Dynamic Capabilities, Digital Adoption, COVID-19

INTRODUCTION

Background

COVID-19 is one of the most disrupting economic challenges faced by this century. Small and medium enterprises (SMEs) were most heavily impacted with about 90 per cent of businesses worldwide being SMEs and over 50 per cent of global employment being held by SMEs (World Bank, 2020). The impacts of the pandemic were particularly deep in the emerging markets where SMEs often have limited access to formal finance, low levels of digital infrastructure and a relatively fragile source of capital buffers. Lockdowns had created supply chain disruptions, and demand shocks, and suddenly physical markets were closed; this left millions of SME operators with a stark issue to face: to change quickly or lose their businesses. Contrary to the crisis, it also saw the fastest period of business digitisation in economic history. Emergency digital support programmes by governments and multilateral agencies, lowered e-commerce entry barriers, changed operational rules for even the smallest of businesses through the increased use of remote communication tools (OECD, 2021). Rather than just tactical, this speeded up digitalisation was a structural reconfiguration of how SMEs generate, deliver, and capture value.

The Digital Imperative

Digital transformation is the process of incorporating digital technologies into fundamental business processes, value propositions, and customer engagement models (Vial, 2019), and prior to COVID-19, this digital transformation was gradually but unevenly moving forward in SMEs. In emerging markets, adoption rates were lower than in advanced countries because of the lack of infrastructure, lack of familiarity with digital technology,

and poor ecosystem (Kshetri, 2021). The pandemic led to this digital adaptation journey being accelerated, from potentially a decade-long concept down to months — now digital is no longer an option but the only way to stay alive. Numerous studies have shown that digitally empowered SMEs are more resilient through an economic downturn, that they come back quicker and are more diversified when it comes to generating income as compared to others who lack digital capabilities (Nambisan et al., 2019; Kraus et al., 2021). The mechanisms, enablers, and barriers of this digitalisation process are thus also of high academic and policy relevance, especially taking into account the very diverse and resource-poor environment in emerging markets.

Research Gap

Although there is an increasing body of research oriented towards SME digitalisation, the published works in this area tend to focus on more advanced economies, like North America and Western Europe (Moeuf et al., 2018). These are qualitatively different issues for EM SMEs: shaky institutional foundations, volatile digital environments, critical skill gaps, and wider capital market imperfections. A few studies incorporating in-depth, contextually specific data exist, but the numerous settings lack this kind of case study research. Moreover, existing research typically focuses solely on the adoption of the digital technology and does not account for the more complex organisational and environmental contexts in which adoption occurs and unfolds, which will lead to different organizational/original outcomes. This paper aims to fill these gaps by undertaking a multi-case study analysis of SMEs in emerging markets after the pandemic and to shed light on how the pandemic actually affected the digital adoption of SMEs under a variety of sectoral and contextual conditions.

Research Objectives and Questions

It is guided by 3 main research questions: RQ1: What strategies and tools did SMEs in emerging markets use to survive the COVID-19 pandemic, and how was this related to digitalization? RQ2: How did these SMEs effectively adopt digital among organizational, environmental, and institutional factors? Relationships between the nature and depth of digital adoption and SME outcomes of resilience in post-pandemic emerging markets: • RQ3: What is the relationship between the nature and depth of digital adoption and SME outcomes of resilience in post-pandemic emerging markets?

Significance of the Study

The main contributions of this research are threefold. It theoretically addresses two key strands, namely Dynamic Capabilities Theory and the Resource-Based View, in the underexplored field of the digitalisation of emerging market SMEs. In practice, it provides rich and case-based evidence from a context where quantitative data is a minority and not always reliable. Transformative inclusive digital transition in practice provides guidance on guidelines for action to be taken by SME managers, SME policy makers and SME development finance institutions to drive inclusive digital transition.

LITERATURE REVIEW

Defining Digital Transformation in SME Contexts

Digital transformation is a multi-dimensional phenomenon, involving technological, organizational and strategic aspects (Vial, 2019). It often entails enterprise resource planning systems, artificial intelligence and data analytic platforms for large corporations. Of course, for small and medium sized enterprises (SMEs), the scope may be more limited but no less important: using e-commerce platforms, cloud-based productivity tools, utilising digital payment systems and engaging customers with social media marketing (Bharadwaj et al., 2013). Most importantly, digital transformation is not only about technology adoption as there is a need for reconfiguring how the business logic and value creation mechanisms can be altered. (Matt et al., 2015) Different authors have tried to differentiate digitisation (from analogue to digital) from digitalisation (to reinvent existing processes by digital means) from digital transformation (development of new business models thanks to digital technology) (Vial, 2019). Many emerging market SMEs are not at the stage to embark on transformation but are focused on digitalisation instead, and the intermediate steps in digitalisation can provide significant resilience benefits.

SME Resilience: Theoretical Frameworks

For purposes of this study, there are two theories that are relevant. Dynamic Capabilities Theory (Teece 2007) suggests that organisations can attain a sustained competitive advantage by operating higher-order organizational capabilities to sense opportunities in their environment, seize the resources they need, and reconfigure their assets to adapt to changes in the environment. Digital adoption is exactly such a dynamic capability for SMEs facing pandemically caused change, allowing companies to "feel," see and react to changing market demands and capitalize on opportunities in digital channels. Barney's (1991) Resource-Based View of the firm draws upon this line of thinking and emphasises the importance of the resources and capabilities unique to a firm – such as human, financial, and organisational resources – that explain sources of competitive advantage. In the digital adoption context, the focus shifts to the access to finances for technology investment, the human capital online (digital) skills, and the organisational culture in favour of experimentation, which turns these factors into resources that separate successful from less successful cases. Korber and McNaughton (2018) build upon these frameworks by outlining a multi-dimensional understanding of the concept of SME resilience: anticipation (before the crisis is on), coping (time specific to the crisis) and adaptation (after the crisis). Digital adoption serves to promote all three dimensions; particularly in the coping and adaptation stages.

Post-Pandemic Economic Recovery and SMEs

Digital capability is a consistent theme across the economic literature for why some SMEs are resilient to crises, while others are not, in the context of both the COVID-19 crisis and its aftermath. According to the International Monetary Fund (2021), those SMEs who had prior experience with digital tools saw revenues pick up by about 40 per cent compared to SMEs without prior experience with the digital tools within eighteen months after the national lockdown. In a similar vein, pandemic-driven technology adoption by small- and medium-sized enterprises (SMEs) rushed a few years of commercialization into a 12-month time horizon, according to McKinsey Global Institute (2021). But, again crucially, the advantages of digital adoption were not evenly spread. For SMEs, the results across the different sectors with high digitisability levels, such as retail, professional services and information heavy industry, were more favourable than for those in construction, hospitality or for traditional manufacturing (OECD, 2021). The likelihood of and outcomes from adoption was further shaped by infrastructure in emerging markets with durable internet connectivity in cities having the highest adoption rates and outcomes, while rural enterprises had comparatively low rates of adoption and low outcomes (World Bank, 2020).

Digital Adoption in Emerging Markets

SME digitalisation is a paradoxical phenomenon that takes place in emerging markets. At the same time, the penetration of mobile technology has dramatically increased access to digital platforms; M-Pesa is a mobile money provider offering transformative information technologies in Kenya, while bKash is in Bangladesh. However, on the other hand, there is a wide increase in access to digital platforms thanks to the penetration of mobile technology: its transformative information technologies, the mobile money provider M-Pesa, exist in Kenya, while bKash also exists in Bangladesh. However, high undernourishment of fixed broadband networks, electricity access and digital skills hampers the extent of the adoption that can be realised for many SMEs. The case of South Asia (Bangladesh, India, Nepal, Pakistan and Sri Lanka) is a particularly educative one. It is home to some 47 million formal SMEs and hundreds of millions of informal micro-enterprises as the backbone of national economies (ADB, 2022). However, the governments of the region have rolled out a variety of digital support programmes ranging from financial inclusion policies in India, through Jan Dhan Yojana, to Nepal's Digital Nepal Framework, to provide enabling institutional conditions that partly compensate for infrastructure deficits. The adoption of digital products and technologies in this context underscores some unique characteristics, such as the mobile-first platform over the desktop-first platform (Kshetri, 2021), informal peer networks in the process of diffusion of digital knowledge (Bhattacharya, 2020), and vernacular language digital interfaces overcoming the challenge of literacy barriers (Patel et al., 2019).

Barriers to Digital Transformation in SMEs

There is a large amount of literature that discusses the barriers that exist in SMEs undergoing digital transformation, and generally these barriers can be categorized into three types. The most common challenge reported is financial constraints: investments required to finance the digital technologies (e.g., investment in hardware, software, internet connectivity, training cost) are high and can be a strain on the cash flow of financially constrained SMEs (Moeuf et al., 2018). With COVID-19 came the need now and also constraint on funds to invest in digitalization. The second big obstacle is digital literacy gaps. SME owner-managers in emerging markets often face a lack in knowledge on the technical aspects of appraising and implementing effective use of digital tools and in managing them efficiently (Bhattacharya, 2020). High turnover rate of employees in the SME sector has further exacerbated this problem by dispersing the knowledge of digital things in this sector with time. The third critical barrier is poor infrastructure capabilities, which primarily limit access to electricity, as well as low penetration of, and coverage by, broadband services and mobile networks in rural areas, and make it extremely difficult for SMEs with a digital strategy to become market participants (Kshetri, 2021).

Research Gap and Conceptual Framework

Applying all the above reviews, three observations can be made that indicate the research gap this study aims to address. First, empirical evidence on digital adoption is not yet broadly available, and the research on the adoption of digital tools in emerging markets is very limited. Secondly, most of the current research works have applied quantitative techniques with the loss of richness of the context. Thirdly, there is limited theory linking firm-level factors and ecosystem conditions to outcomes of adoption. This paper would fill all three gaps using a qualitative multi-case approach, which was based on the Dynamic Capabilities Theory and Resource-Based View.

CONCEPTUAL FRAMEWORK

This study draws on a conceptual framework that suggests that digital adoption acts as a mediator between disruptions caused by a pandemic and SME's resilience outcomes. Based on the dynamic capabilities construct of Teece (2007) and Barney's (1991) resource logic, the framework outlines three interrelated dimensions of digital adoption - operational digitalisation (using digital tools to streamline processes and work), market digitalisation (using digital channels to reach and connect with customers, and financial digitalisation (using digital payment and lending platforms to manage cash flow and access credit). The framework also classifies the moderating factors influencing digital adoption-resilience as: government and institutional ecosystem support (government incentives and regulations; investment in digital infrastructure); firm-level resources (financial and human capital; prior technological experience); and market conditions (sector digitisability; competitive dynamics; customers' digital readiness). The conceptual architecture is a way to test out hypotheses and propositions regarding the conditions in which digital adoption leads to resilience; it provides a structure to compare the case evidence and offers a contribution to the mid-range theorisation of SME behaviour in crisis settings.

METHODOLOGY

Research Design

Given the nature of the study, the multiple case study, a qualitative research approach, was appropriate (Yin, 2018). Multiple case studies were used because the study aimed to investigate complex phenomena that have many interwoven factors, in which the phenomenon is not easily distinguished from its context. Case study is a method that allows gathering of detailed, specific evidence and yet is sufficiently structured so as to allow for cross case comparison and the drawing of theoretical inferences. However, with the relative newness of the research field on SMEs digital adoption in the emerging markets, it is appropriate to consider a qualitative design over a quantitative one, which would be able to give premature precision.

Case Selection

Purposive, theoretical sampling (Eisenhardt, 1989) was used. In order to be selected, the cases included in the sample had to meet four criteria: implemented at least one important digital tool or platform during the pandemic period (from March 2020 to December 2021); identified as an SME (according to the host country's official definition); located in an emerging market economy according to the IMF (2021) classification. In order to achieve maximum theoretical variation, a range of cases from different industry sectors, geographical locations and different size of medium-sized companies was chosen.

Study Context

The key study context is South and Southeast Asia and illustrative cases are brought from three nations: Vietnam, Bangladesh and Nepal. being spread across the range of institutional environment, infrastructure and governmental digital support context in South and Southeast Asia. The Digital Nepal Framework (2019) and digital grants in response to the pandemic in Nepal offers a useful institutional context; the mobile financial services ecosystem in Bangladesh is a leapfrog technology case and; manufacturing SMEs in Vietnam offer an illustration of the dynamics of digitalisation of the value chain.

Data Collection

Semi-structured interviews were conducted with primary data, including owner-managers of SMEs, operational managers, and relevant stakeholders from the ecosystem, such as business association representatives, government, and financial institution managers. A total of forty-two interviews were carried out from January to September 2023, each of them ranging in time from forty-five to ninety minutes. Interviews were held in the language preferred by the interviewees (Nepali, Bangla, English), and for quality control, they were interpreted and back-translated. The interviews were conducted using a format that included three areas of the thematic codes: "Pre-pandemic Digital Readiness," "Pandemic-period Adoption Decisions and Processes," and "Pandemic-period Outcomes and reflections. Triangulation of interview results was performed using secondary data such as financial records of the firms, evaluation reports of the programmes of government, and survey reports from industry associations.

Data Analysis

Reflexive thematic analysis (Braun and Clarke 2006) was employed, which consists of cycles of coding, elaborating of the categories and developing of the themes. Initial open coding was used to discover the relationships among the categories, axial coding for developing relationships among categories, and selective coding for building of overarching themes that showed relationships with the research questions of the study. To provide a comparison of the adoption trajectories and results across cases, pattern-matching and explanation-building methods recommended by Yin (2018) were used in the cross-case analysis.

Validity and Reliability

The utilization of methodological triangulation — that is by combining interview information, second hand sources, and, in some cases, primary observation of the process leading up to the construction — added to the construct validity. Systematic pattern matching and member checks of preliminary findings with relevant actors were used to address internal validity by addressing systematic pattern matching with theoretical propositions. The context description (thick description) helps readers make judgements about the applicability of the findings (analogue of external validity—transferability). A clear "audit trail" of methodological decisions that explained the entire research process helped to increase the dependability of the findings.

Ethical Considerations

To ensure informed consent, all participants signed an informed consent before attending interviews. Participant anonymity was protected by using pseudonymous identifiers of firms (Firm A - Firm E). All data were securely contained in digital data repositories where access is restricted to the research team with encryption to protect data integrity. Study was approved by ethics committee of institute before data collection.

CASE PRESENTATION

Overview of Selected SMEs

Primary case sample comprised five SMEs: (1) Firm A is a textile retailer based in Kathmandu, Nepal; (2) Firm B is a firm exporting handicrafts from Dhaka, Bangladesh; (3) Firm C is a food processing company based at Chittagong, Bangladesh; (4) Firm D is a light manufacturing company based at Hanoi, Vietnam; (5) Firm E is an accounting company and legal advisory service based at Kathmandu, Nepal. The size of firms ranged between 12 and 87 employees and revenue were in the range of USD 85,000 to USD 1.2 million per year (pre-pandemic).

Pre-Pandemic Digital Readiness

In all five cases, there was digital readiness that was lacking before the pandemic. Firm A had just a basic page for communication with customers on Facebook, but had no intention to sell anything productively over there, as it was still a physical shop. While Firm B was using email for its buying and selling activities with customers abroad, the company had a very basic web-site and they also rely on trade fairs as a means of acquiring customers. All payments were made in cash in the case of a firm that used paper-based inventory management. Acoustic solutions provider Firm D had made some investment in a simple ERP system for production scheduling, but no online functionality for the customers. Firm E stored its client records in spreadsheets and only met and spoke with clients by phone. The profile of little digital pre-pandemic readiness aligns with the overall picture of digital readiness evidence found in the region: The Asian Development Bank (2022) finds less than 30 per cent of South Asian SMEs had a working digital sales channel before March 2020.

Pandemic-Induced Disruptions Faced

All five companies were impacted because of the pandemic, in many overlapping ways. For all five firms, cash flow crises occurred either due to the loss of revenue or the delay of payments from buyers, and if not all five, then one or more of these five factors were present. Cash flow crises were felt by all five firms, either because there was lost revenue or because payments were delayed from clients and buyers, and if not by all five, then by one or more of these five factors, was it not? Previous digital assets and the timeliness of management teams' awareness of the necessity of digital pivots averaged the disruption severity across cases.

Digital Tools and Strategies Adopted

The pandemic spurred a real adoption of digital tools and approaches in all five cases—although they were different in each context, dependent on the sector. On the other hand, Firm A quickly become an e-commerce entity with its presence on the e-commerce platform, Daraz, and took advantage of social media ads on Facebook and Instagram. Online sales made up around 60 per cent of pre-pandemic sales in 4 months since the opening of physical stores. Firm B chose to engage in virtual trade shows, set up a B2B ecommerce account on Alibaba and introduced video conferencing systems for customer relations, all of which allowed them to retain 70 per cent of their customer base, which they had used pre-COVID-19.

Firm C was able to digitally transform its supply chain and payment management processes, introducing bKash as the mobile payment system and by using a cloud-based inventory system with real-time visibility of stock in aerially distributed supply chain. It was firm D that implemented a digital production monitoring system, which allowed to control the activities of a factory from a distance in the event of a lockdown and made it possible to communicate with customers directly via digital ways, avoiding the need to rely on complicated human intermediaries. Firm E began to move all client services to online transactions, such as using video calls and collaborative documents across the cloud network and has since expanded its reach to cities all over Nepal including overseas Nepalis.

Outcomes

As of end-2022, all five firms had made it and have been recovering in its varying degrees. Firm A, for one, said it had been able to bounce back to pre-pandemic revenue growth levels and much higher – around a quarter more – in terms of revenues because of the cost structure reduction and growing geographic access by customers

through the use of digital channels. Revenue from firm B had been steadily improved to around 85% of the level prior to the pandemic and digital had acted as a buffer against the continued disruption of trade. The digitalised supply chain at firm C helped to enhance their efficiency and lower their working capital needs. In the time since that interview, firm D has tweaked its business model, muddied the waters of the physical showrooms and shifted focus toward digital marketing. Relative to prior results, firm E had grown its customer base by around 40 per cent, gaining customers that were not in its area of service.

ANALYSIS AND FINDINGS

Finding 1: Digital Adoption as a Reactive-to-Proactive Trajectory

In each of the five cases the attitude to digital was at first reactive – prompted by an urgent requirement driven by disruption from the pandemic; but ultimately in each one, digital shifted into a proactive strategic mode as companies gained a greater amount of experience and B2B organisations saw the potential value of digital channels. This shift from reactive to proactive relates to Teece's (2007) dynamic capabilities framework, reflecting how sensing opportunities for disruption in the pandemic (or threats to something unexpected) led to the seizing of capabilities (by adopting digital tools) and ultimately to asset reconfiguration (through revising the business model to embrace digital-first activities). Most importantly, companies with some or only limited digital experience reached the inflection point – when the adoption of digital went from a reactive approach to a proactive one – sooner. Organisational learning platforms were created for both firms that can help to reduce the speed of development of wider digital competencies during the crisis: Alibaba for the Firm B and ERP system for the Firm D. The observation matches the absorptive capacity building that Kogut and Zander's (1992) knowledge combination theory suggests. Absorptive capacity is based on previous conceptions of the technology that supports the fast assimilation of new digital skills. How this happens is important: investments to raise these to minimum digital levels in the non-crisis period will provide SMEs with absorptive capacity that will lead to dramatic increases in adoption during the crisis period and decrease the cost of learning to be digital during the crisis phase.

Finding 2: Role of Government and Ecosystem Support

Government and institutional ecosystem interventions statistically and practically had an impact on adoption outcomes in all cases. The government of Nepal offered small-scale grants for emergency purposes to SMEs via business association that helped both Firm A and Firm E to pay for upfront subscription fees to the platform and purchase devices, helping to avoid the need to sacrifice working capital. It was without doubt that the regulation in Bangladesh for Mobile Financial Services (MFS) – a policy that would allow Mobile Financial Services to grow rapidly – directly contributed to the digitalisation of Firm C's payment services. The regulation for Mobile Financial Services (MFS) in Bangladesh is definitely part of a policy that enabled Mobile Financial Services to grow rapidly, which in turn directly supported Firm C's payment digitalisation. Firm D had access to a government-sponsored digital skills training programme for production staff subsidised by the Vietnamese government. The results indicate that the literature on institutional economics—dominant in the microfinance sector—especially on how regulatory environments and public goods provision in general facilitate SME development is tested and confirmed (North, 1990; Rodrik, 2004). Digital transformation of the SME is more than a single firm-level issue: It emerges as a co-production effect within the process of actions and interactions between the capacities of the firms and the institutional environment in which the firms operate. The co-production approach points to a shift in policy thinking, emphasizing provisions of digital support as a systemic approach for developing ecosystem(s) and not as making a direct subsidy offer to existing or emerging SMEs.

Finding 3: Human Capital and Digital Literacy as Critical Enablers

Success in implementing and adopting digital solutions turned out to be dependent on human capital, which was the most frequently mentioned enabler in all five cases. Digital transformation at the firm level was always fueled by people and mainly by the younger members of the family and/or recently graduated individuals who had the digital sensibilities needed to critically assess, deploy, and test digital solutions. On the contrary, when adoption was not as smooth or as effective, the absence of such individuals was the most prevalent constraint mentioned. This discovery brings the Resource-Based View (RBV) (Barney, 1991) into the digital transformation space:

Digital human capital here, which is characterized by technical digital skills, digital business acumen, and change management capacity, is a rare, valuable, and hard-to-imitate resource driving differential adoption outcomes. Most importantly, the digital human capital is highly 'clumpy' in SMEs: an SME can seriously be damaged if an individual highly skilled in digital capabilities leaves. These concentration risks are a unique characteristic of small-firm digital transformations and warrant further attention within the small-firm digitalisation literature, compared to a bigger enterprise environment, where they may not exist. The business associations and training providers' take-home message is that it is not enough to focus digital literacy interventions on digital skills and techniques, but it is essential to include digital business knowledge, from digital marketing strategy to data interpretation, and even e-commerce operations management.

Finding 4: Financial Access and Affordability

Financial access was found to be a key moderating variable, both in terms of working capital for initial investments in digital and access to digital financial services. This allowed Firms D and E to invest in bigger, more high-tech packages, such as cloud ERP systems and top-tier digital marketing services, creating positive long-term consequences for their budgets when it came to resilience. Companies that banked all their investment funds into retained earnings (Firms A, B, and C) used lower-cost platforms and solutions which resulted in an acceptable level of resilience but did not allow for a deeper digital transformation course. As in the rest of the literature on financial inclusion using fintech in South Asia (Mader, 2018), the role of mobile financial services was significant and enabling in the Bangladesh cases. Mobile lending platforms partially offset the lack of formal banking ties between smaller SMEs, by cutting transaction costs, speeding up payment cycles, and offering the basic, working-capital credit facility without a formal credit history, providing a way of financial digitalisation.

Cross-Case Comparison

To ensure the insights from this study can be structured within a meaningful framework, the key adoption variables and resilience outcomes from the five firms are compared across cases as shown in Table 1.

Firm	Country / Sector	Primary Digital Strategy	Digital Enabler	Revenue Recovery (2022)
Firm A	Nepal / Retail	E-commerce + social media	Gov. Digital Grant	+25% above pre-pandemic
Firm B	Bangladesh / Export	B2B Platform + Virtual Trade Shows	Prior digital asset (website)	85% of pre-pandemic
Firm C	Bangladesh / Food Processing	MFS Payments + Cloud Inventory	MFS ecosystem (bKash)	Full recovery
Firm D	Vietnam / Manufacturing	Digital Production Monitoring + Direct Sales	Gov. skills training	Full recovery + model reconfig.
Firm E	Nepal / Professional Services	Remote Service Delivery + Cloud Collaboration	Formal credit access	+40% client base expansion

Table 1. Cross-Case Comparison of Digital Adoption Variables and Resilience Outcomes

DISCUSSION

Interpretation Against the Conceptual Framework

The results are quite empirically sound to support the conceptual framework in Section 3. In all five cases, digital adoption was indeed a mediating pathway between the disruption caused by the pandemic and the possible indicative outcomes of resilience. Within the framework, digitalisation of adoption was conceived as the interaction between the three dimensions – operational digitalisation, market digitalisation and financial digitalisation – the three of which were empirically observable, though where they were more important differed across the various sectors of the economy. Manufacturing (Firm D), retail firms and professional services industry (Firms A and E) relied on operational digitalisation, while the financial industry (Firms B and C) relied on market digitalisation, where cash-intensive businesses have the most compelling digitalization. The moderating effects of government ecosystem support, available resources for the firm and market conditions were also clearly substantiated. Companies in more enabling institutional settings (Vietnam's methods in tackling skills training; Nepal's digital grants; Bangladesh's MFS regulatory arrangements) exhibited better adoption depth and resilience results. It brings strength to the conclusion that digital resilience of SMEs is a systemic characteristic of the interaction between the firm and the ecosystem, rather than a part of the firm's capabilities.

Contribution to Dynamic Capabilities Theory

This research has two major theoretical contributions to the Dynamic Capabilities Theory. First, in terms of empirical evidence of emerging markets, it offers a first basis for a theory that has been grounded mostly in the experience of large firms in advanced economies. The results confirm that there are sensing-seizing-reconfiguring dynamics operating at the SME level in resource-constrained environments, yet with distinct characteristics: The sensing process does not necessarily follow formal and systematic procedures, with a tendency towards social and network-created processes; Decisions made during the seizing process are subject to financial and human resources constraints; and decisions to reconfigures are quick but also weaker without the support of the institutions. The intrinsic characteristics discussed indicate a need for elaboration of the framework contextually, in the context of SMEs in emerging markets settings. Secondly, extreme environmental shocks can accelerate SMEs' capability building periods, which is a phenomenon captured by the study and termed the “crisis induced capability acceleration effect,” as in a crisis, many months of capability build up can be achieved as compared to several years of gradual build-up. Colorado's capability building path is in line with the theory of deliberate learning of Zollo and Winter (2002) but has been expanded to crisis contexts where 'existential urgency' exists.

Implications for Emerging Market SME Policy

Such a complex and important research area extends into policy implications. The findings apply to national countries to transform their emergency response into ongoing digital ecosystem creation that builds up their digital readiness for future crises. It is also about investments in broadband connectivity, digital literacy training in the secondary and vocational educational program, and regulations to create an environment for mobile financial services and e-commerce platforms development. Nepal Digital Nepal Framework and the MFS regulatory framework of Bangladesh offer good examples of frameworks but would need a dedicated commitment to their implementation. The findings for business association and development agencies underline the importance of peer learning networks through which SMEs can exchange their know-how on the process of digital adoption and share information to overcome the transaction costs of technology evaluation. The social and network-based aspects of digital knowledge dissemination seen across the cases imply that the returns of facilitating peer networks can be superior to similar investments in formal knowledge formation programmes. The insights highlight the commercial potential of using a blended financial solution to assist with digital adoption — SME digital transition finance made up of working capital credit and digital adoption support that lessens the financial barrier to the depth of digital adoption for financial institutions. DFIs such as the Asian Development Bank and the International Finance Corporation may be able to be one of the catalytic forces in configuring and piloting such products jointly with the commercial banks and fintechs.

Comparison with Existing Literature

The results of this study align broadly with a growing body of literature in the field of SME digital resilience and also provide an element of contextual specificity, which enhances the body of theory in this growing field. Results from the present study resonate with Kraus et al's (2021) findings regarding digital pivots ultimately undertaken by German SMEs throughout the pandemic with the reactive-to-proactive intra-adoption pathway identified, highlighting cross cultural generalisability between the two crises. The importance of human capital aligns with the Nambisan et al. (2019) focus on digital entrepreneurial talent to be the key factor in driving SME digitalisation efforts. This distinction in the adoption process, however, is network-mediated and institutionally contingent, influenced by government programs, mobile financial services network, and informal, peer learning, and unlike studies conducted in more advanced economy contexts, it expands these findings.

LIMITATIONS

A number of limitations have been placed on this study, and as such affect the scope and results of this study. Even though it has been introduced as a purposive sample, it has only been five firms and cannot be seen as statistically representative of the total number of SMEs in either of the three study countries. Use of retrospective interview data may lead to recall bias, especially on the aspects of the sequence and reasons for adoption decisions made in crisis situations. A survivorship bias occurs while focusing on companies still in business after implementing the study because those that could not adapt and are out of business are not represented, thus potentially overestimating the number of adaptable ones available to the average SME. Larger scale mixed method designs would overcome these limitations, by focusing on the depth and breadth of the case study and also by following the same cases along time, looking at both successful and unsuccessful SMEs.

CONCLUSION

Summary of Key Findings

Using qualitative case evidence from three emerging markets (Nepal, Bangladesh and Vietnam), this study explored the practice-based means by which SMEs leveraged digital adoption for becoming more resilient and, surviving, in the context of the COVID-19 pandemic disruption. Four main thematic results emerged: digital adoption was a journey from reactive towards proactive, with specific characteristics based on the previous experience with digital strategy; the support of the human capital, including digital literacy, and the ecosystem from the government and institutions were present as these had a determining enabler effect in a consistent and recurring way; a deep financial access, which is not just having money on hand, but understanding how to access it, was the case where the depth and sustainability of the digital strategies were more evident; and finally, and once again in a repetitive and recurring manner, the deeper and longer financial access the more evident were the depth and sustainability of the digital strategies. All five case companies had exceeded the pre-COVID recovery levels and/or quint quadrupled with depth of recovery strongly linked to adoption depth and quality of the institutional ecosystem.

Theoretical Contributions

Based on theory, the study bridges two frontiers: the first is Dynamic Capabilities Theory and the second is the Resource-Based View, both studies were developed using large businesses and development in advanced economies and emphasize features of capabilities that are less articulated or understood in the context of emerging-market SMEs during crisis conditions. The theoretical contribution the concept of crisis-induced capability acceleration holds could be applicable to other sectors and for other crisis types; it would be interesting to see more empirical research undertaken.

Practical Recommendations

For SME owners and managers: build up digital human capital (through training, recruitment and knowledge retention); and actively participate in digital support programmes by governments and peer learning groups even during non-crisis periods, to build up digital skills. For policy makers: invest in a continuous digital ecosystem

development rather than one-off crisis response interventions; invest in ensuring mobile financial services regulatory ecosystems that facilitate financial digitalisation of SMEs; and create digital support programmes that include peer learning and add network facilitation capabilities. Financial institutions: craft SME digital transition finance solutions to integrate working capital finance and digital adoption support; clearly define and standardize transaction costs when adopting digital finance; and incorporate digital readiness assessment tools into SME loan decision-making; On joint efforts with fintech companies: expand support and promotion of digital finance.

Future Research Directions

Future research should include larger-scale quantitative studies which bring the relationships identified here at statistically representative scale; Longitudinal panel studies, which will be able to explore how institutions adopt and how institutional resilience is manifested over time, within multiple year timeframes; and Comparative studies, which will be able to systematically explore the interactions between institutional environment quality and the relationship between digital adoption and institutional resilience in the various contexts of digital ecosystems. Studies on the role of informal SME networks on digital knowledge transfer and on effective digital knowledge development peer learning interventions would also be important to both theory and practice.

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