

Digital Technologies as a Catalyst for Transforming Female Entrepreneurship in Developing Countries

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University of Strathclyde's award of Doctor of Philosophy

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Dedication

This thesis is dedicated to my parents, Morrison Best (deceased) and Lynn Best, whose unwavering support, sacrifice and care laid the foundation for the pursuit of my academic studies. After the gift of life, your belief in me and your investment in my education are the next best treasures that you have given to me.

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ABSTRACT

Recent evolutions of digital technologies on the global stage have disrupted and contributed to reshaping the entrepreneurial landscape in ways that have notably featured high in rethinking business models, competition, and value chain processes and activities. The prospect of digital technologies fostering business innovation and propelling entrepreneurial transformation is increasingly being promoted as key to creating new opportunities for growth and development, particularly in developing countries. Moreover, the pervasive and accelerated use of digital technologies has currently attracted much attention in academic and business spheres, resulting in the consensus that there is a need for a better understanding of the novel phenomenon of digital entrepreneurship. Interestingly, there is evidence which shows that the benefits of these technologies are neither automatic nor always equally gained among entrepreneurs. Notably, women across the globe continue to face multiple challenges in advancing their business endeavours in this digital era. Considering this reality and in keeping with an in-depth empirical study within the spatially fragmented *islandness* and post-colonial contexts of the Caribbean region, this thesis sheds light on the complex multidimensional nature of the interplay between the phenomena of female entrepreneurship and digital entrepreneurship. Among developing countries in the Global South, the unique context of the Caribbean region presents nuances and novel perspectives on the orientation and endeavours of female entrepreneurs and the ways in which digital technologies are used as a source of opportunities to overcome challenges they face in the entrepreneurial and digital environments.

From a theoretical perspective, this study draws on post-colonial feminist theory and the Technology Affordances and Constraints Theory (TACT). The purpose of the study is to gain deeper insights on how digital technologies alleviate existing constraints among female entrepreneurs and improve their entrepreneurial opportunities towards achieving gender equality. In so doing, this study adopts an overarching contextual gendered approach and considers complementary perspectives from the field of entrepreneurship, and the sub-fields of female entrepreneurship and digital entrepreneurship which contribute to a better understanding of the phenomena within the broader socio-economic, geo-political and demographic realities of the Caribbean. By employing a qualitative approach and adopting the philosophical stance of

interpretivism, semi-structured interviews were conducted among 30 female digital entrepreneurs across three Caribbean countries - Trinidad and Tobago, Barbados and Jamaica. Through purposive snowball sampling, the selected research participants included a diverse group of participants by age, sectors, educational background, geographic location and category of digital entrepreneurs (light, medium and extreme) who make use of digital technologies in their businesses. The research findings reveal that through the agency of the female entrepreneurs, digital technologies influence the transformation of female entrepreneurship towards empowerment, leadership, resilience and the multiple contexts of people, place and time. While operating in the digital environment, the female entrepreneurs employed deliberate entrepreneurial strategies to build capacities and broaden their networks and market environment beyond their limited geographic spaces. Notwithstanding, the findings also provided insights on paradoxes related to the adaptability, as well as the growth and sustainability strategies of the business ventures, characterised as Small and Medium Enterprises (SMEs), given the “depersonalised” aspects of digital businesses and the tendency of gender biases linked to female entrepreneurs becoming more invisible or inadvertently ascribed to the enterprises. Hence the results highlight the importance of the agency of the female digital entrepreneurs in shaping a more gender-inclusive transformed business environment.

By focusing on the Caribbean, which embodies a range of nuanced contexts, this study contributes to contextualising female digital entrepreneurship and broadening the debate beyond the Euro-Western centric perspectives. Hence, post-colonial theorisation offers a critical lens to support the thrust of the study. In considering the human and organisational aspects of business entities, together with the intertwining aspects of technology and social practices, the use of TACT provides insights on concepts of “affordance” and “constraint” in a relational manner rather than a deterministic way. In a similar vein, post-colonial feminist theory offers diverse analytical insights of the social relations dynamics, while also emphasising the historical perspectives of female entrepreneurship in the Caribbean context. Hence, the study contributes to theory building by emphasising that with the integration of gender perspectives and the embeddedness of context, female digital entrepreneurship occurs both as a process and in the moment at a given point in time. The policy and practical implications from the study highlight that emerging digital technologies can become both an equaliser and a disruptive factor in labour markets and can

address gender inequality and equally transform female entrepreneurship in island economies such as those of the Caribbean. Consequently, this thesis makes the case for developing a novel “SHERO” model which goes beyond the stereotypical perspectives of the masculine hero entrepreneur and the (s)hero entrepreneur by showcasing how female entrepreneurs use digital technologies in their business operations to significantly improve their entrepreneurial Sustainability, Hope, Empowerment, Resilience and Optimism (SHERO) in a more integrated and holistic manner.

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ABBREVIATIONS AND ACRONYMS

ABI/INFORM	Abstracted Business Information/International Network for Online Resources
AI	Artificial Intelligence
AMR	Academic Management Review
AOM	American Academy of Management
CAREED	Centre for African Research on Enterprise and Economic Development
CARICOM	Caribbean Single Market and Economy
CDB	Caribbean Development Bank
ChatGPT	Chat Generative Pre-trained Transformer
COVID-19	Corona Virus Disease of 2019
DOAJ	Directory of Open Access Journal
EBSCO	Elton B. Stephens Company
ECLAC	Economic Commission for Latin America and the Caribbean
EThOS	Electronic Theses Online System
EURAM	European Academy of Management
FDE	Female Digital Entrepreneurship
FDI	Foreign Direct Investment
FE	Female Entrepreneur
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GOAT	Greatest of All Time
HCESI	Hunter Centre for Entrepreneurship, Strategy and Innovation
ICT	Information and Communication Technology
IDTGIT	Individual Differences Theory of Gender and Information Technology
ILO	International Labour Organisation
IoTs	Internet of Things
IT	Information Technology

JARA	John Anderson Research Award
JSTOR	Journal Storage
LAC	Latin America and the Caribbean
MENAGEN	Middle East and North Africa Gender and Enterprise Network
MSMEs	Micro-Small and Medium Enterprises
OACPS	The Organisation of African, Caribbean and Pacific States
OECD	Organization for Economic Cooperation and Development
OECS	The Organisation of Eastern Caribbean States
PIS	Participant Information Sheet
R&D	Research and Development
RBV	Resource Based View
RQ	Research Question
RRBM	Responsible Research in Business and Management
SDGs	Sustainable Development Goals
SHERO	Sustainability, Hope, Empowerment, Resilience and Optimism
SIDS	Small Island Developing States
SMEs	Small and Medium Enterprises
STEM	Science, Technology, Engineering and Mathematics
TACT	Technology Affordances and Constraints Theory
TAM	Technology Acceptance Model
TEA	Total Entrepreneurial Activity
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
UWI	University of the West Indies
WebEx	Web Extension
WTO	The World Trade Organisation

CHAPTER 1: THE INTRODUCTION - RESEARCH CONTEXT

1.1 Introduction

The pervasive and accelerated use of digital technologies is rupturing and radically transforming every aspect of the entrepreneurial ecosystem (Kraus *et al.*, 2019). No other technological innovation in the twenty-first century seems to have had such a profound concatenated effect on the business environment as that of digital technologies. Studies have shown that digital technologies can radically improve efficiency in the management and performance of business enterprises among female entrepreneurs (Ughetto *et al.*, 2019), and ultimately help to achieve the gender equality targets of the Sustainable Development Goals (Crittenden, Crittenden and Ajjan, 2019; McAdam, Crowley and Harrison, 2020). The COVID-19 pandemic has accelerated the adoption of digital technologies which in turn have provided entrepreneurial women in Latin America and the Caribbean (LAC) region with a unique opportunity to reap various gains for their socio-economic empowerment. Yet, digital technologies have a ‘dark side’, including widening the digital gender divide. Hence, for female entrepreneurs, the potential gains from digital technologies can remain untapped, short-lived, and unclear given that they also rely on the local entrepreneurial ecosystem, policy environment and investment climate.

While female entrepreneurs contribute significantly to economic and social development globally and represent an undeniably important phenomenon (Jennings and Brush, 2013), there is a gender gap in entrepreneurship (Ughetto *et al.*, 2019). In the male-dominated field of entrepreneurship, the importance and relevance of the female entrepreneurship phenomenon for research and practice is often subjected to socio-cultural traditional views and expectations, and a range of gender biases (Ahl and Marlow, 2012). In this vein, new and emerging streams of research on women-managed-owned businesses provide an opportunity to contribute to the advancement of female entrepreneurship and a better understanding of the multifaceted entrepreneurial phenomenon (Yadav and Unni, 2016). This situation highlights, *inter alia*, that the problem being investigated in this research comprises two overarching and integrated elements (entrepreneurship and digital entrepreneurship) that focus on unearthing the factors that affect the growth of female entrepreneurship which in itself is a research topic within the male dominated field of entrepreneurship, and the impact of digital technologies on women who own and manage

businesses as a subset of the issues that affect female entrepreneurship in particular and entrepreneurship in general (Akhmadi and Tsakalerou, 2023). Specifically, while the discourse on the integration of digital technologies into female entrepreneurship, which is still in its infancy, is gaining traction in academic research (Kelly and McAdam, 2022a), not much is known about the role played by digital technologies in affecting female entrepreneurship (Ughetto *et al.*, 2019). Therefore, female digital entrepreneurship remains an underexplored, yet important issue in the field of entrepreneurship. In view of this, the motivation for this study emanates from personal, empirical and theoretical perspectives.

From a personal standpoint, I drew inspiration from my late aunt, Audlyn Scobie, whenever I mused on her legacy as a small business owner and manager. As a restaurant owner and retailer located in the city centre of Scarborough, Tobago, she was labelled a “successful entrepreneur” who operated a competitive business in the late 1970s and 1980s at a time when the business environment was largely - if not fully - dominated by men. Although popularly known for her culinary innovations and creative business endeavours, as well as her contribution to the wider community and society, on her passing her entrepreneurial legacy seemed to have paled at a time when the entrepreneurial landscape was not significantly affected by digitalisation. Yet, with indelible memories of her vision and passion for expanding her business enterprise, as time elapsed, I often experienced a sense of disquiet in passing the location of the once buzzing business environment. The inability to comprehend why such a landmark thriving business endeavour could not be sustained nor be transformed, led me to often consider what could have made a difference to realise this goal in a dynamic entrepreneurial environment. In the same vein, stories of my great grandmother, Agatha “Fanny” Hercules, who became a successful agripreneur after the death of her husband, but whose business endeavours also did not sustain beyond her death led me to believe there is an important missing element to fully understand the phenomenon of female entrepreneurship in Trinidad and Tobago, and by extension in our Caribbean islands. Even more poignantly, my professional experience in development work in the Caribbean region over the past 25 years, further underscores the motivation for undertaking seminal research on issues of female entrepreneurship and the use of digital technologies in the entrepreneurial context of a region from which I belong. With digital technologies firmly at the centre of the fourth industrial revolution and an opportunity to pursue a doctoral degree in entrepreneurship, I feel compelled to explore the

impact of digitalisation on female entrepreneurs with a view to also transform their entrepreneurial potentials and develop legacies that will ultimately inspire future generations locally and across the Caribbean region. Hence, by undertaking this study, I am projecting some degree of relative authoritative rights (albeit limited) in being able to draw attention to the challenges of and opportunities for female entrepreneurs operating in the digital environment in developing countries, with a particular focus on those located in the Caribbean region.

Empirically, the consideration on digital technologies and female entrepreneurship is embedded in the need for seminal studies that are ‘context-focused’ and comprehensive, that will render real and sustained benefits to female entrepreneurship through digital technologies, instead of actions that merely translate into advocacy. Furthermore, with the general historical trend of in-depth analytical research on female entrepreneurship being focused mainly on developed countries, there is a dearth of empirical investigation on developing countries. In filling this research gap, this study does not only respond to the calls to also include more countries from the Global South and emerging economies but goes beyond, by focusing on countries in Caribbean Island States which form part of the larger group of Latin America and the Caribbean (LAC) region. This is because current work on female entrepreneurship and digital technologies in developed and developing countries have mostly centred on the experiences of countries in Eastern Europe, Africa, and Asia (Terjesen and Amorós, 2010; Al-Dajani and Marlow, 2015). Cognisant that the LAC region is characterised as having one of the lowest historical rates of female entrepreneurship compared to Africa, Central Asia and South East Asia (Weeks and Seiler, 2001) and there is an increasing global innovation divide between developed and developing countries (Akhmadi and Tsakalerou, 2023), there is a concomitant paucity of seminal research for Caribbean countries (Hilbert, 2011). Surprisingly, even in the recent efforts to unearth latent assumptions that are not anchored in Western, masculine, industrial and paternalistic environments (Welter *et al.*, 2017), thus far, there are some unwilling or neglected patterns towards the Global South being characterised by an “all are alike approach” (Banerjee, 2022) which lacks theoretical plurality about entrepreneurial activity in small island states of the Caribbean region (Aguinis *et al.*, 2020). Therefore, although countries in the Caribbean are part of the geographic region commonly referred to as developing countries or “the Global South” (Schmitt and Muyoya, 2020), there is a need to scale up the scope

of the research on the Caribbean's entrepreneurship environment (Aguinis *et al.*, 2020) to avoid the risks of advancing and at the same time transposing epistemological problems.

From a theoretical viewpoint, the specific focus of the converging impact and the interplay of digital technologies and female entrepreneurship within the context of developing countries, such as those within the LAC region, amplifies the scholarship on female entrepreneurship and provides information that further enhances the theoretical framework and strengthens evidence-based policy formulation for transforming female entrepreneurship. The relatively underexplored entrepreneurial research agenda of the Caribbean context, which is characterised by strong undercurrents of a conventional entrepreneurship research built around entities of high growth and other elite characteristics, continues to influence and shape the field of entrepreneurship today (Minto-Coy, Lashley and Storey, 2018). At the same time, these research agendas are largely produced through the political economy of colonialism (Banerjee, 2022), which thereby accentuates the thrust of this study towards employing a more nuanced theoretical framework. In the same vein, there is a historical tendency among scholars to be insensitive to the complexities and nuances of the entrepreneurial environment in the non-Western context (Naude, 2010b; Welter and Baker, 2021) which also (re)produces implicit assumptions about the Global South (Piedalue and Rishi, 2017) to the extent of further generating unwarranted consequence of decontextualising the nuances of under-researched or neglected regions such as the Caribbean. Therefore, a contextualised approach to entrepreneurship research portends to illuminate the richness of contextual diversity and adds to the scholarship in the field (Wadhwani *et al.*, 2020; Welter and Baker, 2021). Moreover, context is of paramount importance towards understanding the activities of SMEs (Vershina *et al.*, 2020). Focusing entrepreneurial research on the Caribbean also supports calls to broaden the understanding of the Global South to include relational perspectives of power, development and inequality (Piedalue and Rishi, 2017) while resonating with calls for the decolonisation of entrepreneurship research (Banerjee, 2022). Moreover, this study undertakes a deeper task of decolonisation by not only questioning Western perceptions and thinking, but by also recognising and unearthing nuanced alternative theorisation within the Global South that are important models for developing female entrepreneurship.

By drawing on a qualitative methodology, this PhD research investigates and provides deeper insights on how digital technologies alleviate existing constraints among female entrepreneurs. Further, the analysis illustrates the value of gendered contextual lens in understanding the ways in which the offerings provided by digital technologies (inclusive of artifacts, platforms, and architectures) present new opportunities for transforming female entrepreneurship in developing countries, particularly those which are situated in post-colonial and under-examined contexts that are not considered prototypical of high growth large corporations such as those in developed countries (Hughes *et al.*, 2012).

1.2 Description of the Research Problem

Within commercial activities, entrepreneurship is considered to be one of the most common behaviors which is characterized as people creating value through new businesses (Lu *et al.*, 2020). Various scholars have posited that entrepreneurship is an important engine of growth and development, as well as a driving force of innovation within countries (Quatraro & Vivarelli, 2014; Lu, *et al.*, 2020). More recently, entrepreneurial activity is recognized as one of the primary drivers of industrial dynamism and welfare effects (Acs *et al.*, 2011; Carlsson *et al.*, 2013). Notwithstanding, several studies have found that the dynamics and effects of entrepreneurship are heterogeneous across countries (Baumol, 1990; Wennekers *et al.*, 2005; Naudé, 2014; Lu *et al.*, 2020). In fact, the role and function of entrepreneurship in developing countries are found to be distinctive from that in developed countries, whereby entrepreneurs in developing countries have been described as key in “fill[ing] important gaps left by incomplete and underdeveloped markets” (Acs, 2010, p.26)

This unique value of entrepreneurship in developing countries has led to a recent trend of increased interests among policy makers and researchers in promoting entrepreneurship as a key element of sustainable national development (Lingelbach, de la Vina and Asel, 2005; Acs, 2010; Lu *et al.*, 2020). Moreover, entrepreneurship in developing countries is mostly characterised by the Small and Medium Enterprises (SMEs) that are operating within the informal sector (Lingelbach, de la Vina and Asel, 2005). For instance, in 2014 SMEs comprised over 400 million individuals in

developing countries (Lu *et al.*, 2020). More recently in 2022, results from a World Trade Organisation (WTO) survey indicated that approximately 95% of businesses across the globe were Micro-Small and Medium Enterprises (MSMEs), representing more than 60% of world employment (Ganne, Lundquist and Zhou, 2024). At the same time, changes in the entrepreneurial landscape that is showcased by large firms off-shoring, downsizing and outsourcing point to the critical importance of SMEs to, *inter alia*, economic growth, international trade and national development and innovation while increasing productivity by focusing on core business initiatives (Andersson *et al.*, 2007). Moreover, there is empirical evidence which reveals that SMEs have a diversity of growth modes and that some SMEs do not want to grow (Hakola and Sarna, 2023). Considering that SMEs constitute both enterprises and entrepreneurs and that the latter mostly lead and influence SMEs (Andersson *et al.*, 2007), the heightened importance of the evolving landscape of SMEs has broader implications for entrepreneurial research. Accordingly, this brings into sharp focus the explicit need to question the relevance of hegemonic discourses and ideologies about the role and growth of entrepreneurship in developing countries (Verduyn and Essers, 2013). Against the backdrop of calls to expand the research boundaries of entrepreneurship and female entrepreneurship (Ahl and Marlow, 2012; Dean *et al.*, 2019), this research focuses specifically on the small island developing countries of the Caribbean.

As developing countries, the Caribbean context is a particularly valid space for researching topics in the field of entrepreneurship (Rivera-Quiñones, 2022). The Caribbean has a population of approximately 44.5 million people and covers an area of approximately 2.8 million sq. km. The region largely comprises 16¹ of the world's 39 Small Island Developing States (SIDS). Constrained by their relatively small-size, economies of scale are difficult to achieve in these islands (The World Bank Group, 2024). In comparison to the 66% of the small and medium enterprises (SMEs) in the rest of small economies (ROSE) globally, approximately 75% of business enterprises in the Caribbean are considered SMEs (Minto-Coy, Lashley and Storey, 2018). Hence, these SMEs which operate in a variety of sectors form the backbone of Caribbean's economies, account for a significant portion of employment and approximately 40% of regional

¹ Of the three geographical regions in which SIDS are located globally – the Caribbean; the Pacific; and the Atlantic, Indian Ocean and South China Sea – the Caribbean region has the largest number of SIDS.

Gross Domestic Product (GDP) (Salazar-Xirinachs and Llinas, 2023). Notwithstanding the compelling growth potentials of the Caribbean's SMEs, these are hindered by an intensely competitive global environment, limited fiscal space and rigid economic structures (Economic Commission for Latin America and the Caribbean, 2024). Despite the region's common historical evolution (from colonialism to indentureship and independence), and comparable cultures among the islands, there is heterogeneity with respect to size, ethnicities, resource endowment, and language (Esnard-Flavius, 2010), as well as variations in their internal business environments (Lashley and Smith, 2015).

Although there now exists increased data information on entrepreneurial activities globally due to efforts of the Global Entrepreneurship Monitor (GEM), the World Bank, among others, the Caribbean region remains under-researched in relation to seminal studies on entrepreneurship and innovation (Minto-Coy, Lashley and Storey, 2018). Further, there is a tendency for these research endeavours to group the Caribbean with the larger Latin American countries under the rubric of Latin America and the Caribbean (LAC), where at times this is inclusive of only one Caribbean island, and the results can be misleading (Lashley and Smith, 2015). From a socio-economic perspective, female entrepreneurs in the Caribbean as well as those from other developing countries play a pivotal role in the local economy (Brush and Cooper, 2012; Pounder, 2015). Yet, across the many regions of the world, female entrepreneurs in the LAC region are most likely to operate with zero or at most 1 – 4 employees (Lashley and Smith, 2015). In addition, in the Caribbean region, there is a digital gender divide in the accessing of information and communication technologies (ICT) more than in the skills required to utilise these technologies (Billari *et al.*, 2020). Therefore, with innovation and entrepreneurship considered as integral for sustainable growth and development in the Caribbean region (Salazar-Xirinachs and Llinas, 2023), coupled with an increased global interest in SME growth and internationalisation, female entrepreneurship and digital technologies (Crittenden, Crittenden and Ajjan, 2019), this research portends significant relevance to shaping policies towards sustainable socio-economic development.

Furthermore, the changing and divergent landscape of entrepreneurship in developing countries is captured in several extensive studies of global entrepreneurship such as the Global

Entrepreneurship Monitor (GEM) and the Global Entrepreneurship and Development Index (Acs, 2010). With diversity being considered as an important context in entrepreneurship research (Vertovec, 2007; Yamamura and Lassalle, 2022), attention needs to be paid to the different types of entrepreneurs and their divergent social and entrepreneurial context (Zahra, Wright and Abdelgawad, 2014). It is within the realm of research that the researcher understands the viewpoint of entrepreneurship scholars who emphasise the need for conducting more cross-disciplinary research and pluralistic research approaches (Lu *et al.*, 2020) to unpack the embedded and diverse dimensions and be better able to gain a deeper understanding of the field of entrepreneurship. This is of particular importance in research to more broadly investigate and theorise about the individual and social factors impacting entrepreneurial activities (Rindova, Barry and Ketchen, 2009), particularly of women who comprise over 40% of entrepreneurs in the world (De Vita, Mari and Poggesi, 2014; Foss *et al.*, 2018), and yet continue to face many challenges that hinder their transformative potential (Jamali, 2009; Jennings and Brush, 2013; Jones, Martinez Dy and Vershinina, 2019).

In consonance with the trend among developing countries, in many countries around the world the phenomenon of female entrepreneurship is of growing interest (Brush, de Bruin and Welter, 2009; Minniti and Naudé, 2010). This is largely due to two main reasons, namely the concomitant general increasing interest in the role of entrepreneurship in the process of economic development, and more specifically the rapid increasing numbers of female entrepreneurs in developing countries (Audretsch, Keilbach and Lehmann, 2006; Naude, 2010b). Hence, over time female entrepreneurs have been characterised as one of the fastest growing entrepreneurial groups (Brush and Cooper, 2012) and the proliferation of research on female entrepreneurship has shown a constantly increasing pace (Ughetto *et al.*, 2019). Globally, female entrepreneurs own approximately one third of registered businesses and half of these are located in developing countries (UNCTAD, 2014). For instance, in 2020, of the 582 million entrepreneurs who existed globally, 282 million were women and developing countries accounted for the highest number of female entrepreneurs (GEM, 2020). This stylised fact and the motivation for its consideration seem to have arisen from an increasing understanding of the significant role of women in creating, running and growing businesses (Acs *et al.*, 2011) whereby the phenomenon of female entrepreneurship has been promoted as playing an important role in the development strategies of

developing countries; particularly for employment creation and poverty reduction (UNCTAD, 2014), as well as innovation and wealth creation (Brush, 2010).

Yet, in developing countries, while the prevalence rate of new business enterprises is higher among women than that of men, the fact remains that in comparison to males, the ownership and management of businesses are considerably lower among women (Minniti and Naudé, 2010; Ahl and Marlow, 2012; OECD, 2021). Considering that globally, women tend to play a less than relative significant role in entrepreneurial activities, suggests the existence of gender-based issues and underscores the need to understand and to address these constraints and challenges, as well as to optimize benefits (Acs *et al.*, 2011) within the context of developing countries. Therefore, it is not surprising that some researchers have purported that women entrepreneurs are a group that is significantly under-represented and under-tapped in the many contexts of the entrepreneurial ecosystem in developed and developing countries (Jamali, 2009; Cochran, 2016). Debates on this phenomenon across countries include a plethora of individual, community, national and global factors such as entrepreneurial ability, culture, family networks, and socio-economic conditions (Alonso and Trillo, 2014) as well as the contextual perspectives (Welter and Baker, 2021). With the heightened interest to build a better understanding of women entrepreneurs, research has shown that entrepreneurship is a gendered phenomenon and that women can play an integral role in the broader entrepreneurial phenomenon (Yadav and Unni, 2016). Indeed, the mushrooming evidence suggests that entrepreneurial activities provide women with both opportunities and constraints for employment (Jamali, 2009). As a contribution to the ongoing discussion on female entrepreneurship, this study analyses the transformative role of digital technologies in female entrepreneurship in developing countries.

Digital developments, particularly new technologies, and new digital paradigms are posited as “an important source of transformation of the entrepreneurial environment” (Ughetto *et al.*, 2019, p.307). Various academics and economists have highlighted digital technologies (such as internet, data analytics, mobile phones, social media, multimedia, and wireless networks) as a key facilitator for realizing the potential of female entrepreneurs (Martinez Dy, Martin and Marlow, 2018) and for contributing to employment creation, economic growth and poverty reduction (Cochran, 2016). This notion is further supported by several scholars who have identified digital technology as one

of the most effective tools for economic competitiveness and sustained long term economic growth (Nambisan, 2017;Kraus *et al.*, 2019), as well as a key solution for the empowerment of women in emerging economies (Crittenden, Crittenden and Ajjan, 2019). For instance, in many parts of Asia and Africa, there is evidence that digital technologies have offered female entrepreneurs' opportunities for increased work flexibility through mobile and telebanking (mobile apps) and increased access to information on market and customers through social media (Marnewick, 2014;Crittenden, Crittenden and Ajjan, 2019;Chatterjee, Dutta Gupta and Upadhyay, 2020). Further, there can be opportunities for enhancing operational efficiency and creating new business models through networking and alternative financial services such as crowdfunding (UNCTAD, 2014). It is important to underscore that over the past two decades, and more recently since the COVID-19 pandemic, the business environment has changed significantly whereby various aspects of business operations now require and use digital technologies for sales, marketing, recordkeeping, among others (Roblek *et al.*, 2021;Angelovska, 2022;Luo, 2024). The enabling effect of digitalisation in paving the way for innovation opportunities for female entrepreneurs in developing countries has been explored (McAdam, Crowley and Harrison, 2018;Kelly and McAdam, 2022b). However, despite the blooming literature on female entrepreneurship, there is relatively limited information on the role of digital technologies in influencing female entrepreneurship and analyses of the experiences of women in digital entrepreneurship remain underexplored (Ughetto *et al.*, 2019).

Importantly, while digital entrepreneurship is described as radical and disruptive (McAdam, Crowley and Harrison, 2020;Nzembayie and Buckley, 2022;Olan *et al.*, 2024), the literature on the emancipatory and empowerment perspectives for female entrepreneurs seem far from converging towards consensus (Nambisan, 2017;Martinez Dy, Martin and Marlow, 2018). Besides being a research area that is still in its infancy where there are different definitions of the phenomenon of digital entrepreneurship (Kraus *et al.*, 2019;Pantic-Popovic, Semencenko and Vasilic, 2019), this situation is caused by the rapid developments in new digital technologies in recent years which have significantly transformed the inherent nature of and the approach for dealing with uncertainty in entrepreneurial processes and outcomes (Nambisan, 2017;Pantic-Popovic, Semencenko and Vasilic, 2019). In addition, not much is known about the role that digital technologies play in effecting transformative changes in female entrepreneurship (Martinez Dy,

Marlow and Martin, 2017). Nowadays, the concept of digital transformation is touted not only as a solution, but also as a prerequisite for business excellence and expansion of female entrepreneurs (Pantic-Popovic, Semencenko and Vasilic, 2019). Yet, in some developing countries, there are some SMEs that deliberately do not fully adopt nor utilise any digital technology in their operations (Marnewick, 2014). This pattern is deemed to be characteristic both of the global innovation divide (Akhmadi and Tsakalerou, 2023) and the digital gender divide as argued by cyberfeminists (McAdam, Crowley and Harrison, 2020).

Further, it has been noted that these technologies are not the panacea for the range of challenges faced by female entrepreneurs (Maier, 2007). Hence, although digital entrepreneurship has been posited as a “greater leveller” (Martinez Dy, Martin and Marlow, 2018; McAdam, Crowley and Harrison, 2020), there are ongoing academic debates on the issue. Much of the research undertaken on digital entrepreneurship has adopted normative assumptions and presumed that digital entrepreneurs are homogenous (Pergelova *et al.*, 2019). Therefore, the growing international discourse on whether digital technology is a silver bullet that acts as the game changer among female entrepreneurs remains highly debatable (Alon *et al.*, 2020). The intersection of digital entrepreneurship and female entrepreneurship within the broader field of entrepreneurship creates a useful and unique platform to obtain a deeper exploration of the experiences of female entrepreneurs in developing countries. Moreover, cognisant that “intersectional studies in entrepreneurship are relatively rare” (Lassalle and Shaw, 2021, p.1496), this study draws on the interplay of the phenomena given the understanding that female entrepreneurs are situated at the intersection of different dimensions of digitalisation and they have diverse experiences in the entrepreneurial ecosystem (Crenshaw, 1991). Recent theorising on female digital entrepreneurship has noted that to ignore the broad heterogeneity among digital businesses (Dy, Marlow and Martin, 2017), risks reinscribing rather than challenging the gendered aspects of the phenomenon (Wajcman, 2010; Hopkins, 2019). Hence, the way women across the globe have been developing their agentic strategies to take advantage of digital technologies and navigate the complex barriers they face remain under-explored (Al-Dajani and Marlow, 2015). Moreover, examining the influence of the use of digital technologies in fostering digital transformation among female-owned business enterprises (Martin and Wright, 2005; Crittenden, Crittenden and Ajjan, 2019) and

the persistent gender gap in the entrepreneurship field, render the interplay between the two phenomenon unclear and debatable (Gaweł and Mińska-Struzik, 2023).

The use of digital technologies in the empowerment of female entrepreneurs (Martin and Wright, 2005) and as a booster for entrepreneurial orientation are deemed critical issues to be examined in support of the further development of female entrepreneurship and the influence on relevant policy interventions in developing countries (UNCTAD, 2014). Given historical gender discrimination, the specific barriers forged from the intersection of socio-cultural, technological and contextual issues within the entrepreneurial ecosystem, cannot be fully explored without applying appropriate gender lens (Martinez Dy, Martin and Marlow, 2018; OECD, 2021). The gender perspective is not only largely underexplored in female entrepreneurship but also in digital entrepreneurship; thereby suggesting there may be strong credence to the argument made by Duffy and Pruchniewska (2017) that female digital entrepreneurship can proffer a “digital double bind” on female entrepreneurs (McAdam, Crowley and Harrison, 2020, p.351) whereby women feel compelled to develop an online personality that is in sync with feminine stereotypes. Not only does this situation seem to contradict the argument that digital technologies are a “great leveller “ for female entrepreneurs (Martin and Wright, 2005; McAdam, Crowley and Harrison, 2020), but also points to the need for paying greater attention to novel contexts in order to obtain a deeper understanding of the potential of digital entrepreneurship (McAdam, Crowley and Harrison, 2020).

Given the Caribbean’s post-colonial context, this research adopts a post-colonial feminist approach which embodies a regional or transnational focus that integrates the historical, social and the geographic perspectives (Kerner, 2017). With this approach, the study portends to provide an opportunity to gain deeper insights on how digital technologies alleviate existing constraints among female entrepreneurs and to undertake an in-depth examination of the ways in which these technologies offer new opportunities for transforming female entrepreneurship in post-colonial developing countries. Considering recent debates on intersectionality as a critical praxis, a critical analytical framework, a theoretical lens and a research approach (Collins, 2015; Hopkins, 2019), and its focused attention on how multiple differences (such as gender, race, class, and ethnicity) operate as mutually exclusive aspects of a phenomenon (Kerner, 2017), this study evokes a broader debate involving acute analytical attention to diverse and complex issues (Yamamura, Lassalle

and Shaw, 2022) of gender, post colonialism, islandness, and digital transformation within a digital era. Therefore, in light of the multiple issues and contexts surrounding the impact of digital technologies (Beliaeva *et al.*, 2020) and the experiences of female entrepreneurs, this study draws on post-colonial feminism with a view to unearthing specific issues associated with female digital entrepreneurship (Kelly and McAdam, 2022b) in developing countries' contexts and provide scope for novel theorising in the field.

In the field of entrepreneurship, a focus on female entrepreneurship in the Caribbean region is a relatively new area of interest. Indeed, among the body of research, limited attention has been paid to female entrepreneurship in these economies with only a few journal articles and some recent studies conducted by the GEM (Terjesen and Amorós, 2010). The Latin America and Caribbean (LAC) region has one of the lowest historical rates of female involvement in economic activity - that is, approximately 35%, compared to an average of 50% in Africa, Central and Southeast Asia (Weeks and Seiler, 2001). However, recent empirical studies reveal that the region also has some of the highest rates of entrepreneurial activity and self-confidence about entrepreneurial skills, as well as increasing rates of female entrepreneurial activities (Terjesen and Amorós, 2010; Global Entrepreneurship Research Association, 2018). Hence, this study resonates with the statement “the timing and conditions are right for putting the entrepreneurial research lens on the Caribbean region” (Aguinis *et al.*, 2020, p.616). It is against this background that this study undertakes an exploration of female digital entrepreneurship in the Caribbean region to contribute to filling this research gap and to focus more comprehensively on how advances in digital technologies transform women- led/owned businesses and ultimately influence their innovation and sustainable growth.

1.3 The Research Questions

The unprecedented acceleration and convergence of digital technologies over the past two decades, and the concomitant trend towards information and services becoming digitally based, suggest that entrepreneurs without access are more prone to be disadvantaged (UNCTAD, 2014). Cognisant that the technological revolution is anchored within broader socio-economic, geo-political and

demographic realities, suggests that the potential gains from digital technologies are not automatically realised and that the wider cultural and gendered social context cannot be overlooked in empirical investigations (Kelly and McAdam, 2022a; Henry and Lewis, 2023). Moreover, with digital entrepreneurship emerging as a recent domain of scholarly and practical interest (Nambisan, 2017; Nzembayie and Buckley, 2022), debates and speculations are being fuelled about the role of digital technologies in supporting female entrepreneurs to navigate socially conflicting dual norms of gender and entrepreneurship (Woodward, Wood and Schnarr, 2021). The disruptiveness of digital technologies on extant theoretical assumptions about entrepreneurship (Nzembayie and Buckley, 2022), suggest the importance of empirical studies in contributing to unpack the complexity and full potential of digital entrepreneurship (Beliaeva *et al.*, 2020) in diverse contexts in order to understand its influence to turn the digital gender divide into opportunities in general, and to address challenges and constraints of gender inequalities among female entrepreneurs in developing countries in particular (Hilbert, 2011). Therefore, this study adopts an overarching contextual gendered approach to address the main problem which is translated as the main research question: In what ways do digital technologies enable female entrepreneurs to transform their business processes, outcomes and experiences? To critically assess this issue, the study focuses on the following four complementary research questions:

- RQ 1: How do contexts influence the entrepreneurial activities of female entrepreneurs?
- RQ 2: How do digital technologies affect the way in which female entrepreneurs start, grow and sustain their businesses?
- RQ 3: What are the key challenges and constraints faced by female entrepreneurs and how do digital technologies contribute to alleviating these?
- RQ 4: How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?

1.4 Research Goals and Objectives

While, over the past decade, the scope and diversity of research in the field of entrepreneurship and in female entrepreneurship have increased significantly (Baker and Welter, 2020) since 2020, the global business landscape has changed following the impact of the COVID-19 pandemic (Hart *et al.*, 2021). In general, the pandemic has profoundly impacted global business trends, reshaped

industries and business models, and highlighted business challenges and opportunities towards achieving innovation and adaptability (Ristovska, Blazheska and Gramatnikovski, 2023). Further, it is important to highlight that the pandemic was catalytic in accelerating changes in business that were already underway in relation to the pervasive adoption of digital technologies across businesses and sectors (González and Macias-Alonso, 2023). To provide further insights on the contemporary significance of the role of digital technologies in affecting entrepreneurship, this study focuses specifically on exploring the phenomenon of female entrepreneurship, while also taking into consideration the accelerated and pervasive impact of digital technologies globally within business communities of the Global South (Ughetto *et al.*, 2019). Inarguably, today there is no business that is unaffected by digital technologies. Yet, while the literature on female entrepreneurs is flourishing, it is surprising that there is limited academic research focused on illuminating the role played by digital technologies in impacting change in female entrepreneurship (Jamali, 2009;Ughetto *et al.*, 2019). In this era, therefore, bringing the digital dimensions into female entrepreneurship provides additional theoretical lens to critically assess and obtain deeper empirical understanding of how these technologies interact with women in pursuit of entrepreneurial opportunities. The prospect of new theoretical lens offers opportunities to broaden gender perspectives and to shape the entrepreneurship discourse in new directions (Ahl, 2006;Ahl and Marlow, 2012). Moreover, the relevance of the phenomenon of female digital entrepreneurship to developing countries has influenced the interest of the researcher to address this research gap and provide unique insights from the context of developing countries; particularly the Caribbean region which is an under-investigated region, yet it has one of the highest total entrepreneurial activity among women globally (De Vita, Mari and Poggesi, 2014).

With entrepreneurship being historically studied as a male-gendered concept (Ahl, 2006), marginalised groups, such as women, from non-traditional regions, including the Caribbean, are prone to encounter exclusion and face barriers to develop and grow within the field. Cognisant of the paucity of research specific to this demographic and of the region, this study advocates for an appropriate framework which can illuminate the contextual issues underpinning the experiences of female entrepreneurs and enhance the understanding of the theoretical and practical implications of the role of digital technologies. Therefore, this research project is intended to contribute towards advancing the scholarship on female entrepreneurship and broadening the understanding of how

digital entrepreneurship impacts women in overcoming hurdles and embracing opportunities in their business endeavours. It is against this background that the principal research objectives of this study are summarised as follows:

- RO1: To improve the understanding of the impact of digital technologies on female entrepreneurship in developing countries' context.
- RO2: To provide a deeper understanding of the role of digital technologies on female entrepreneurs' motivations in developing countries with a special focus on the Caribbean region.
- RO3: To uncover female entrepreneurs' experiences with digital technologies and the implications for addressing societal challenges in developing countries.

1.5 Theoretical and Methodological Background

To adequately address the research questions, the researcher undertook a critical examination of the existing knowledge on the theories related to entrepreneurship with a particular focus on the growing influence of digital technologies in the entrepreneurial landscape. In view of the multiple divergent theoretical perspectives on entrepreneurship (Akter, Rahman and Radicic, 2019), this study draws on post-colonial feminist theory (Ozkazanc-Pan, 2012) and the Technology Affordances and Constraints Theory (TACT) (Majchrzak and Markus, 2012) to gain insights on the phenomenon of female digital entrepreneurship from contextual gendered lens of the Caribbean. Importantly, these theories provide space to examine the core issues and analyse the findings of the study without reinforcing the orthodox views on female entrepreneurship in developing countries. In seeking to explore in-depth and give meaning to the study, the researcher utilised qualitative methods and adopted the philosophical stance of interpretivism. Given the nature of the research questions, an interpretivist stance is deemed necessary for undertaking the study. Moreover, qualitative research allows the researcher to pursue the research questions through semi-structured interviews with selected female entrepreneurs. This approach espouses to provide deep insights into the ways in which digital technologies are impacting female entrepreneurs as they manage their businesses on a daily basis. Therefore, interpretivism allows

for unearthing the complexities and the rich nuances that are intrinsic to the female digital entrepreneurs who are the participants of the study.

1.6 Outline of the Study

With a central focus on exploring the transformative prospects for female digital entrepreneurship in developing countries, this study is divided into seven chapters as follows:

Chapter 1: Introduction - introduces the study by describing the research problem which sets out the scope of the phenomenon. This is followed by the research questions, and the main research goals and objectives of the study.

Chapter 2: Literature Review - seeks to critically review the body of knowledge focusing on the implications of the interplay between digital entrepreneurship and female entrepreneurship with particular emphasis on developing countries. In so doing, the chapter adopts an integrated approach in reviewing the main conceptual themes of entrepreneurship, female entrepreneurship, digital entrepreneurship, and female digital entrepreneurship, and in seeking to unravel the complexities of the multidimensional nature of female digital entrepreneurship in a non-Western post-colonial context.

Chapter 3: Theoretical Underpinnings - focuses on the theoretical perspectives of post-colonial feminism and Technology Affordances and Constraints Theory (TACT) and the philosophical considerations of an interpretivist paradigm which are critical to understating the contextual dynamics of the study. This chapter also explores the critical assumptions and theories grounded in entrepreneurship, female entrepreneurship and digital entrepreneurship to highlight the explicit and implicit need to focus on new and broader theoretical perspectives. In keeping with the conceptual themes of the previous chapter, this chapter concludes with the research gaps which the study seeks to address, thereby illustrating the overall coherence of the study.

Chapter 4: Methodological Framework - examines the specific methodological choices of a qualitative exploratory approach, and qualitative design and methods, coupled with interpretive and context-based strategies and the related justification for their selection in addressing the research problem. The chapter outlines the framework utilised in collecting, analysing and

interpreting the data, as well as emphasise the importance of applying critical reflexivity in the processes. An important distinctive feature of this chapter is that it includes the Caribbean entrepreneurial context which informs the research strategy.

Chapter 5: Findings - describes the empirical findings of the research which are organised and presented as intertwined aggregate dimensions of entrepreneurial resilience, empowerment, leadership and context which are supported by the narratives of the participants. This chapter also describes the main weight of the thesis characterised as the development of the SHERO model for female digital entrepreneurship.

Chapter 6: Discussions - provides an assessment of the empirical findings and establishes the arguments to explain the lived experiences of the female digital entrepreneurs and to understand how digital technologies influence the female entrepreneurship. Importantly, this chapter provides a link between literature and the empirical findings.

Chapter 7: Conclusion - provides the research synthesis, highlights the contributions of broadening the contextualization of female digital entrepreneurship, the development of a novel SHERO framework in entrepreneurship, and the understanding of an embedded gender context within a post-colonial digital era. This chapter also advances on the research implications for policy and practice, outlines the limitations of the study, and provides an overview of an agenda for future research.

CHAPTER 2: LITERATURE REVIEW - ENTREPRENEURSHIP AND CONTEXTS

2.1 Introduction

There is a growing recognition of and evolving research about the crucial importance of entrepreneurship among scholars, researchers, policy makers and journalists, as a global economic phenomenon (Gutterman, 2018). Many scholars, starting with Schumpeter (1934), have posited that entrepreneurship plays a major role in understanding, as well as fostering, economic development (Wennekers and Thurik, 1999;Gutterman, 2018;Lu *et al.*, 2020). Even with the attention of the role of entrepreneurship in economic development, empirical studies and seminal research have also revealed a wide diversity of development experiences across economies of developed and developing countries (Naudé, 2014), as well as different entrepreneurial dynamics within these environments (Baumol, 1990). While studies have shown that entrepreneurship matters for growth and development (Naudé, 2014;Gutterman, 2018), there is also empirical evidence which shows that not all entrepreneurs are productive and that some entrepreneurial activities (such as corruption and bankruptcy) can have negative consequences (McCaffrey, 2018). The existence of the various disparate strands of literature on the topic of entrepreneurship (Wennekers and Thurik, 1999;Naude, 2010b;Gutterman, 2018;Lu *et al.*, 2020) suggests that its understanding in diverse contexts is important (Wadhwani *et al.*, 2020;Welter and Baker, 2021) in order to further contribute to developing the domain.

Inarguably, there are multiple dimensions of contexts that matter for entrepreneurship (Welter and Baker, 2021). Recent claims by Welter and Baker (2021, p.1155) indicate that many scholars and researchers in a variety of disciplines tend to treat contexts as “too static and mechanistic”. This researcher concurs with their conclusion and proffers that there is a need to broaden the horizon of entrepreneurship contexts to include the agency of entrepreneurs (Welter and Baker, 2021) and in different spatial realities; particularly female entrepreneurs in developing countries in the emerging digital era. For instance, within the entrepreneurial discourse there still exists a persistent bias of a stereotypical entrepreneur who is characterised as white, male, middle aged and middle class leading a high-growth and relatively large business enterprise (Ahl and Marlow, 2012;McAdam and Cunningham, 2021), and is also labelled as a “typical hero male entrepreneur” (Treanor, Jones

and Marlow, 2020). Such perspectives integrated into contemporary studies without questioning, pose significant risks to decontextualising the gendered nature of entrepreneurship, and the dynamics of the experiences of female entrepreneurs in their ecosystems (Galloway, Kapasi and Sang, 2015;McAdam and Cunningham, 2021).

Today, there are several calls for scholars to embrace a more contextualised understanding of female entrepreneurship (McAdam and Cunningham, 2021;Henry and Lewis, 2023). This study, therefore, situates the advancement of the work on female entrepreneurship not only within its social, cultural and institutional contexts (Ahl, 2006;Hughes *et al.*, 2012), but also considers the pervasive and contemporaneous dynamics of digital technologies on the entrepreneurial environment globally (Kraus *et al.*, 2019;Ladeira *et al.*, 2019) with a specific focus on the developing countries of the Caribbean, which are mostly Small Island Developing States (SIDS). Unsurprisingly, in expanding the development context to include the socio-cultural aspects of entrepreneurship, the role of female entrepreneurs and digital technologies have both been noted as playing important roles in entrepreneurial ecosystems across the globe (Pantic-Popovic, Semencenko and Vasilic, 2019;Chatterjee, Dutta Gupta and Upadhyay, 2020). The value of undertaking empirical study in entrepreneurship and obtaining a deeper understanding of entrepreneurial practices suggest that further investigations of the interplay between female entrepreneurship and digital entrepreneurship augur well to weave a useful tapestry in the advancement of entrepreneurship theory. In traversing the widening frontiers of the entrepreneurial contexts, this study portends to embrace the inherent challenge of examining how female digital entrepreneurs engage with and develop contexts, which is described as “doing contexts” (Baker and Welter, 2020). In so doing, the study attempts to improve the understanding of contextual gendered perspectives of entrepreneurship in non-Western countries and regions, particularly in developing countries.

This chapter encompasses a review of the existing body of research literature dealing with the impact of the proliferation of digital technologies on female entrepreneurship in developing countries of the Caribbean. With the aim of unpacking and gaining a better understanding of the complex and multidimensional nature of this study, this chapter is divided into seven sections where the contextual issues are considered within the broader research focus. Section 2.2 defines

the literature review approach and process for the study. Section 2.3 describes the relevant developmental aspects of the field of entrepreneurship inclusive of the historical, national, institutional, and socio-cultural issues. Section 2.4 explores the contributions, trends, challenges and opportunities of female entrepreneurship. Section 2.5 examines the evolution of digital entrepreneurship by considering the nature and scope of digital technologies, and the digital competencies and tools, trends and impact among female entrepreneurs. Section 2.6 discusses female digital entrepreneurship in developing countries with a focus on the implications of the interplay between female entrepreneurship and digital entrepreneurship in the Caribbean region. Section 2.7 gives a summary of the chapter pointing to the existence of dominant assumptions in the literature and the importance embracing a contextual gendered approach to broaden the field of entrepreneurship.

2.2 Approach and Process of Literature Review

Starting from the premise of “informed pluralism” which demands an awareness of all forms of analysis as well as critical reflexivity that is infused with ethical considerations (Willmott, 2008), the literature review for the study focuses on different sources of literature and different research literature streams within entrepreneurship and in social sciences. The types of publications reviewed include scholarly academic journals, books, articles, theses, and other papers focusing on entrepreneurship, entrepreneurship in developing countries, female entrepreneurship, female entrepreneurship in developing countries, digital technologies and entrepreneurship, digital entrepreneurship, digital entrepreneurship and female entrepreneurship, female entrepreneurship and digital technologies, feminism and gender in the Latin American and the Caribbean region, and feminist and gender theories in entrepreneurship. With the aim of developing a contextualized conceptual framework from a gender perspective, the key strategies employed for undertaking the literature review include consulting articles from various ranked journals of interest such as *Entrepreneurship Theory and Practice*; *International Small Business Journal*; *Entrepreneurship and Regional Development*; *International Journal of Entrepreneurial Behaviour and Research*; *International Journal of Gender and Entrepreneurship*; *Gender, Work and Organization*; and *Journal of Business Ventures*; and reviewing publications from scholars and researchers in the field of entrepreneurship, digital entrepreneurship, and female entrepreneurship (such as Helene

Ahl, Wim Naude, Susan Marlow, Colette Henry, Angela Martinez Dy, Maura McAdam, Friederike Welter, Natalia Vershinina, Paul Lassalle, Sander Wennekers, Siri Terjesen, José Ernesto Amorós, Carla Freeman, Talia Esnard-Flavius and among others).

While there is no standard rule governing how to determine the time periods, the researcher decided on a starting point of 2000 to coincide with the start of the accelerated disruptive nature of digital technologies in the twenty-first century (Nambisan, 2017). Additionally, in 2000, Shane and Venkataraman published their seminal paper entitled “The Promise of Entrepreneurship as a Field of Research” in the *Academic Management Review* (AMR). That paper is deemed to be highly influential in generating academic conversations, in receiving the highest number of citations in 2000 in the field (13,955), and in obtaining the 2010 AMR Decade Award (Lu *et al.*, 2020). The researcher only reviewed documents written in English, given that this language is most popular in academia for publication and for easy circulation across different countries globally. Further, the researcher selected English publications due to the fact that theory in entrepreneurship originated in the regions of Europe and North America and these are therefore positioned as being at the frontier of research in the field and as having relatively “mature research findings” (Lu *et al.*, 2020). This is deemed important given the need to ensure this research is situated within the existing knowledge on entrepreneurship and can draw on relevant theoretical constructs.

The literature review process is guided principally by focusing on the key concepts included in the main research question: these are “entrepreneurship”, “female entrepreneurship”, “digital technologies”, and “digital entrepreneurship”. In keeping with the exploratory nature of this study, the search for contributions on these concepts was conducted through research databases. Having considered the wide scope of these databases and the multi-disciplinary nature of entrepreneurship, digital entrepreneurship and female entrepreneurship, a structured search was conducted by applying some key protocols to the literature review process. These protocols included the use of restriction criteria so that searches were defined to focus on: (i) scholarly (peer reviewed) journal articles from academic journals to facilitate quality control of the material, (ii) articles published from 2000 onwards, in view of the burgeoning phenomenon and continued evolution of digital technologies in the past two decades, (iii) articles written in English, and (iv) the perspective used

to select the relevant articles was based on the main research questions, whereby the abstract and content of the said articles were examined through these lens.

With evidence of the heterogeneous content of empirical and theoretical studies on entrepreneurship, which feature a mix of various sources and different disciplines, the researcher decided to search the library databases of the University of Strathclyde by subject. Given the multidisciplinary nature of the field of entrepreneurship, the researcher focused on databases in the subjects of Business, Management Science, Computer and Information Science, and at the Hunter Centre for Entrepreneurship which resulted in fifty-one, twenty-two, fifty-one, and twenty-six databases respectively. Since it is neither feasible nor practical to systematically review and select all these databases (150), the researcher decided to refine the literature search to focus on selecting databases that are common to the four subject areas. These are ABI/INFORM Complete, Business Source Complete, Directory of Open Access Journal (DOAJ), EBSCO, Economist Intelligent Unit, Emerald Books, Emerald Journals, EThOS, JSTOR, Sage, Suprimo and Web of Sciences.

In developing the dataset for the literature review, the researcher employed an advance search for scholarly publications in the above-mentioned databases that contain “entrepreneurship” and “female or woman or females or women entrepreneurship” as key words in the title, as well as that the publications include at least one of the following key words in the title “digital technology, digital technologies, digital entrepreneurship, ICT”. To further narrow the search, when the researcher included the key words in these databases, the researcher also considered the publications with the higher number of citations. In acknowledging that the aforementioned established boundaries of the literature review process can have an exclusionary subtext that perpetuates dominance of western-centric theoretical paradigms, the researcher considered it contextually significant to establish a more balanced approach in navigating the literature. In this regard, given the research focus and the recent growing interest of female entrepreneurship in developing countries, the researcher decided to also integrate some practical considerations such as reviewing the abstracts to search for additional relevant references related to developing countries, including Latin America and the Caribbean, and the Caribbean. It is important to note that the literature reviewed also included some additional publications that were selected from the

reference lists of publications to reduce the risk of omitting relevant published information on the research topic. Moreover, in weighing the competing considerations, the adoption of this calibrated and balanced path is deemed to be in keeping with the research goals and objectives stated in Section 1.4 and resonates with the researcher's view that there is a need for more pragmatic theorisation and a fuller acknowledgment of diverse entrepreneurial activity in the entrepreneurship literature.

2.3 Entrepreneurship: The Developmental Aspects

In the business arena, the field of entrepreneurship is recognised as one of the few areas that has attracted interests and debates which have rapidly increased among academics, scientific communities and journalists in terms of its fundamental importance to the economy and as a valid research area (Wennekers and Thurik, 1999; Naude, 2010a; Gutterman, 2018). With the increasing number of scholars and the widening periscope of researchers who have a keen interest in entrepreneurship, in recent years, the literature has mushroomed to the extent that it has been characterised as vast and multifaceted (Parker, 2010). Nevertheless, delineating the domain of entrepreneurship and defining the role of an entrepreneur, which are ascribed as necessary for the long-term legitimacy of the field, has been a major challenge and at times generated confusion and tautology among researchers (Bruyat and Julien, 2001; Naude, 2010b). In this regard, Wennekers and Thurik (1999, p.29), indicated that “entrepreneurship is an ill-defined, at best multi-dimensional, concept”. However, in consonance with the viewpoint of Lu *et al* (2020), one can argue that it is precisely the different definitions of entrepreneurship which provide a unique opportunity to contribute to the building of entrepreneurship theory which is discussed further in Chapter 3 of this thesis. Considering that historical approaches to entrepreneurship research are not only about the past but also about the present and the future, an understanding of the historical context of entrepreneurship is important to situate the research (Wadhvani *et al.*, 2020) in the current economies and societies of developing countries such as those within the Caribbean region.

In the Caribbean context, the development of entrepreneurship highlights the region's peculiar history of having a legacy of monocrop economies (mainly sugar cane, cocoa and coconut) and a heavy dependence on foreign markets and foreign enterprises. The colonial heritage of the

plantation system based on rigid controls of forced slave and indentured labour have influenced the selfhood and spirit of entrepreneurial initiatives and attitudes in the region. The undermining of the entrepreneurial self in the Caribbean was further compromised by the fact that during colonial rule, the pre-colonial civilisation, which should have served as the historical base for the social structure, was eradicated as were the original inhabitants (Freeman, 2014).

This was reinforced by the maintenance of imperialist structural arrangements imposed by a capitalist Europe which largely sustained its global industrial prowess through direct restrictions on trade supplies of raw materials from these said Caribbean colonies. After independence these countries were faced with the need to fend for themselves in a competitive global environment characterised by harsh realities of globalisation and liberalisation. Hence, the entrepreneurial environment of the Caribbean is shaped by patterns of the plantation heritage. Another important unique feature of the post-colonial Caribbean socio-cultural context is the dialectic perception among two Caribbean Nobel Prize winners of the impact on the local entrepreneurial where Naipaul in 1972 opined that nothing new will ever come out of the Caribbean, while Walcott in 1974 stated that there will be nothing like what will come out of the Caribbean (Lochan, 2004). This uniqueness is appropriately captured by the writings of Lloyd Best in 1995, who promulgated the theory of the plantation economy, when he claimed that Caribbean entrepreneurship has the potential for competitive advantage given its “mongrel” civilization comprising a single space of a people and a culture that is neither African, Indian, Chinese, Syrian, European nor Madeiran (Sutton, 2011). Instead, the Caribbean can be described as an evolution of socio-cultural elements that are retrieved and retained from mother continents.

It is not surprising that in the post-colonial, industrialisation and independence era of the Caribbean in 1960s, calls were made for structural transformation of the business environment that emphasised involvement of all regardless of ethnicity, gender or class given the need to develop indigenous small and medium sized enterprises in the region (Minto-Coy, Lashley and Storey, 2018). Therefore, to understand the region’s contemporary entrepreneurial environment, neither an ahistorical nor acultural approach would adequately reflect and help give meaning to the unique dynamics of the context of the Caribbean’s development model that is generally linked to

dependency theorisation by Caribbean scholars such as Arthur Lewis, Eric Williams, and Lloyd Best (Lochan, 2004).

An interesting global feature of entrepreneurship is that although research in the field is relatively new and evolving at an exponential rate (Carlsson *et al.*, 2013), the concept of entrepreneurship existed several centuries ago and can be traced as far back as the twelfth century in the French language (Gutterman, 2018). While espousing the long tradition of the term through its linkage with the French word “entreprendre” which means “to undertake” or “to do something new” (Gutterman, 2018), its evolution also demonstrates that its development has been seemingly stymied due to the dominant feudal system in Europe existing at that time (Carlsson *et al.*, 2013). It is not surprising, therefore, that as the feudal system was eliminated in the 18th century and the banking system was being developed, the works of 18th century economists such as Richard Cantillon, Adam Smith, Jean-Baptiste Say, John Stuart Mill, and Herman Freudenberger were instrumental in influencing the description of the concept of entrepreneurship (Wennekers and Thurik, 1999;Gutterman, 2018). Among the early economists, it was the writings of Cantillon (circa 1680 – 1734) in *Essai Sur la Nature du Commerce en Général* that “gave the concept of entrepreneurship an economic meaning and the entrepreneur a role in economic development” which led to the development of equilibrium models in classical economics (Carlsson *et al.*, 2013, p.916). Joseph A. Schumpeter² (1885 – 1950) was the first economist who focused on the role of entrepreneurship in economic development by advancing a new economic theory called “creative destruction” that is based on change rather than equilibrium (Baumol, 1990;Wennekers and Thurik, 1999;Carlsson *et al.*, 2013;Gutterman, 2018). He argued that the entrepreneur is the prime agent of economic change who is driven and motivated by innovation – in the form of new product or process which ultimately destroys or renders obsolete what existed in the past (Baumol, 1990;Wennekers and Thurik, 1999).

It was not until the end of the 19th century, when the United States of America (USA) became a major global industrial power, that the discourse on entrepreneurship shifted from Europe to North

² Schumpeter published his seminal work *Theorie der Wirtschaftlichen Entwicklung* in 1912 and the second edition was translated and published in 1934 as *The Theory of Economic Development*

America. Moreover, being catapulted to a leadership position in production, management, technology and institutions in the early post World War II era, entrepreneurship in the USA focused on the commercialisation of war-related products through incumbent firms. Hence, up until 1980, the practice of entrepreneurship outpaced the development of theory (Carlsson *et al.*, 2013). Cognisant of the broad diversity of development contexts, one can surmise that the different historical views of economists and researchers offer a broad and heterogeneous perspective on the concept of entrepreneurship (Wennekers and Thurik, 1999). For instance, Wennekers and Thurik (1999, p.31) have identified thirteen distinct roles of the entrepreneur ranging from a person who assumes risk associated with uncertainty, to an innovator and a contractor. Hence, the literature seems to support the argument that there is no generic definition of the entrepreneur (Gartner, 2008) and by extension there exist differentiation and fragmentation within the field of entrepreneurship (Aldrich, 2012).

Overall, the research domain of entrepreneurship spans a range of dimensions at the individual level, the firm level and the macroeconomic level which portends the importance of reflecting on these multi-layered contextual issues. In keeping with the aim of this study, it is important to note that although some researchers have argued that entrepreneurship differs from small business, in the amount of wealth creation, speed of wealth accumulation, risk and innovation (Guterman, 2018), there is little evidence in the literature which shows any significant distinctive features. On the contrary, the claim that “entrepreneurship occurs irrespective of the size of the organization” (Wennekers and Thurik, 1999) offers a more fruitful path to apply contextual lenses for understanding entrepreneurship in developing countries. From the literature, the researcher surmises that the explanatory power of most definitions of entrepreneurship seems inadequate, while the predictive power seems limited to make claims on universal theorisation. Further, there is emerging research focused on explaining how the entrepreneuring process is premised on the creation of an organisation which epitomises economic growth and encourages debates surrounding the heroic narrative of entrepreneurship (Laine and Kibler, 2018). Notwithstanding, the concept of entrepreneurship being adopted in this study is that it is concerned both with growth and opportunity development (Clausen, 2020), as well as the process of change and creation of value for the individual, the team, the community, and the wider socio-environment (Bruyat and Julien, 2001; Carlsson *et al.*, 2013). Further, the researcher is cognisant of some distinctive

attributes and characteristics of entrepreneurship in developing countries which include: businesses are usually small and medium enterprises (SMEs) in the informal sector; there are limited mature markets; there is a higher level of risk associated with economic, regulatory and political uncertainties as well as opportunities to mitigate such risks through diversification; there are challenges of obtaining financial resources; and there is a prevalence of family owned and operated businesses (Pounder, 2015; Hessels and Naudé, 2019).

As a phenomenon, most empirical research on entrepreneurship is undertaken from a range of standpoints which include a multiplicity of fields and disciplines such as business, management, economics, management, innovation theory, accounting and finance, social anthropology, mathematical economics, organizational theory, among others (Bruyat and Julien, 2001; Hessels and Naudé, 2019). Moreover, while entrepreneurship has developed in many sub-fields within these several disciplines, it is debatable whether entrepreneurship is a subfield within these disciplines (Naude, 2010b). Of the many reasons put forward for the multiplicity of roles, there is great gravitational pull around the notion that entrepreneurial activities are viewed from multiple disciplinary perspectives and at various levels of analysis (Naude, 2010b; Carlsson *et al.*, 2013; Lu *et al.*, 2020). Invariably, this points to the deeper understanding that the concept of entrepreneurship is anchored in a range of diverse practices and outcomes that are linked to entrepreneurial efforts and activities (Haugh and Talwar, 2016). Should one consider that there exists an established community of scholars who focus on entrepreneurship research, then it may suffice to opine that the emergence of entrepreneurship as an academic discipline is not in the traditional sense of having a common paradigm or comprehensive theory (Carlsson *et al.*, 2013).

By drawing on the Schumpeterian model (Baumol, 1990), which emphasises growth by innovation, the evidence suggests that entrepreneurship has rapidly evolved as “an independent research domain” (Lu *et al.*, 2020, p923), and a highly complex³ phenomenon (Bruyat and Julien, 2001). Central to this broad outlook is that conventional perspectives have generally considered entrepreneurship as a male dominated activity that is integral to economic development and have

³ Within the science of complexity, a phenomenon is complex when there is a number of disparate ideas (paradox, circular causality, positive feedback, creative destruction, spontaneous self-organization, emergence) that are to be found outside the most established perspectives of the strategy process (Bruyant and Julien, 2001, p.176).

linked its focus to the discovery of opportunities, innovation, the creation of new business ventures and the pursuit of commercial objectives (Haugh and Talwar, 2016). In addition, it is noted that it was not until the early 2000s that there was a focus on social entrepreneurship which links entrepreneurship with human welfare. This points to the under-representation of promising entrepreneurial research which focuses on the impact of new firm formation and dynamics on socio-economic development, technological change, inequality and opportunities (Carlsson *et al.*, 2013).

Hence, is it unsurprising that over time, female entrepreneurship and its contribution to economic development tend to be overlooked and understudied, particularly in relation to developing countries, where the social, cultural and institutional contexts significantly impact on the extent to which and how women engage in the entrepreneurial ecosystem (Hughes *et al.*, 2012; Haugh and Talwar, 2016). In this vein, this study aims to further increase the understanding of the significance of female entrepreneurship as a key driver for economic growth and socio-cultural development, particularly in light of new and emerging streams of research on the interplay of digital technologies on business endeavours and global entrepreneurial ecosystems in general.

2.4 Female Entrepreneurship

2.4.1 Overview: The Research Trajectory of Female Entrepreneurship

It is approximately in the last four decades that studies on female entrepreneurship have emerged in the entrepreneurship literature which featured researchers such as Schwartz in 1976, DeCarlo and Lyons in 1979, Hisrich and O'Brien in 1981, and Pellegrino and Reece in 1982 (Jennings and Brush, 2013). Hence, the late 1970s witnessed the coming to fruition of female entrepreneurship as a sub-domain of entrepreneurship in an explicit manner (Yadav and Unni, 2016). Cognisant that the great inflation of the 1970s contributed to a large number of women joining the formal work force, it is not surprising that entrepreneurship scholarly studies on the sub-domain, which are now conducted by scholars around the globe, also began in the United States of America and the United Kingdom (Parker, 2010; Jennings and Brush, 2013). Historically, such studies were generally descriptive and focused mainly on the demographic characteristics, the motivation, and the ownership experiences of female entrepreneurs (Parker, 2010). Now, given that the literature on

mainstream entrepreneurship emerged in the 1930s and focused mainly on male entrepreneurs, it begs the question: why was there a 40-year period of delay or inattention to female entrepreneurship research even while women have been managers and owners of business for decades earlier than the 1970s? As cited by Jennings and Brush (2013), various researchers have posited plausible explanations such as: (i) prior to the 1930s, in many countries women were not widely counted as a distinct group; (ii) female business owners rarely featured in popular media and therefore had a lower propensity to be studied by academics; and (iii) early scholars assumed that male and female as the same and applied these assumptions equally to both men and women. It is interesting to note that in the United States of America, up until the 1990s, in several mainstream academic journals and leading newspapers, women were still perceived as sole proprietor firms or small lifestyle businesses (Baker, Aldrich and Nina, 1997).

Hence, it is not surprising that until the 1990s, a male-centered business model was considered as the normal and natural model of entrepreneurship (De Vita, Mari and Poggesi, 2014;Yadav and Unni, 2016). Therefore, it is against this background that one concurs with researchers such as Baker *et al* (1997) and Terjesen (2010) who contended back then that the study of female entrepreneurship is in its early stages (Parker, 2010), and with Hughes et al (2012) and Yadav and Unni (2016) who more specifically state that it is in an adolescence stage. These claims suggest there is vast potential to contribute to the body of knowledge towards further bolstering the research stream, and that there is scope for continued growth through increased conferences, publications, and for exploring novel methodological approaches while investigating female entrepreneurship.

2.4.2 Trends and Contributions of Female Entrepreneurship

Continuing on the development of the body of work on businesses owned or managed by women, the researcher notes that in setting the area's distinctiveness, the literature does not present a clear position on whether the sub-domain is referred to as "female entrepreneurship" or "women entrepreneurship" (Brush and Cooper, 2012;Jennings and Brush, 2013;Yadav and Unni, 2016). Moreover, since the concepts are seen to be used interchangeably in various studies and even within a single study, for the purpose of this research project, the concept of "female

entrepreneurship” is used to avoid ambiguity. Along this vein, the researcher contends that over the past two decades, the concept of female entrepreneurship has attracted growing attention and interests among researchers, scholars, and policy makers (Jennings and Brush, 2013; Haugh and Talwar, 2016). The outpouring of research on female entrepreneurship has also witnessed an upward trajectory and proliferation in the number of extant literature reviews published since the 1980s (Hughes *et al.*, 2012; Jennings and Brush, 2013; Zhang and Zhou, 2019). This is demonstrated in the work done by Yadav and Uni (2016), which revealed an upward trend in the number of published literature review papers from the 1980s to 2000s ranging from 2 to 19 per year (Yadav and Unni, 2016), as well as the 30-year review undertaken by Foss *et al.*, (2017) which identified over 630 studies undertaken on female entrepreneurship (Foss *et al.*, 2018).

This relative recent proliferation of research focus on female entrepreneurship suggests keen insights have been provided on the topic and these have contributed to the broader scholarship on entrepreneurship (Jennings and Brush, 2013). Further, Hughes *et al.* (2012, p.429) have surmised that the dramatic expansion of both activities and scholarly interests in female entrepreneurship in recent years has served to “correct the historical inattention paid to female entrepreneurs and their initiatives”. Female entrepreneurship is espoused as pivotal for national economic development and societal advancement (De Vita, Mari and Poggesi, 2014; Guelich *et al.*, 2021), and trends reveal positive change towards employment opportunities and self-reliance (Jamali, 2009; Bullough, Renko and AbdelZaher, 2014) among women. Various empirical studies have shown an increasing involvement of women in entrepreneurship (Jamali, 2009; Haugh and Talwar, 2016) where women generally account for over 40% of the entrepreneurs in the world (De Vita, Mari and Poggesi, 2014; Foss *et al.*, 2018). However, despite the growing interests and importance of female entrepreneurship, it is recognized that business ownership by female entrepreneurs lags behind that of men (Bullough, Renko and AbdelZaher, 2014). It is within this context that the researcher positions the argument that female entrepreneurship is a topic of crescent interest (Bullough et al, 2013. With the convergence of the traditional male-centric orientation in the field of entrepreneurship and the emerging research on female entrepreneurs, insights have been gained which demonstrate that entrepreneurship is a gendered phenomenon which in turn contributes to the broader entrepreneurship phenomenon (Brush and Cooper, 2012). This lacuna and its implications for stymying the advancement of the sub-domain of female entrepreneurship seem to

have resonated with the claims by some researchers who argue that research on female entrepreneurship needs new directions (Ahl, 2006; Hughes *et al.*, 2012). Therefore, by incorporating gendered lens in this research project, it portends new opportunities for studying not only how the gendering of entrepreneurship is done, but also how the phenomenon is accomplished (Hughes *et al.*, 2012; Jennings and Brush, 2013) in the context of non-traditional and non-Western entrepreneurial countries and regions.

The literature on female entrepreneurship portrays a range of contradictions and research gaps (Parker, 2010), as well as heterogeneity among female entrepreneurs (Hughes *et al.*, 2012). Notwithstanding, a critical reflection on much of the extant literature on female entrepreneurship shows a skewed focus of the phenomenon as an engine of economic growth (Hughes *et al.*, 2012; De Vita, Mari and Poggesi, 2014). Yet, given that female entrepreneurship is embedded in the economic environment of a country, as well as in its socio-economic context, suggests there is scope for researchers to divert from the narrow view of the economic act towards broader aspects of change creation such as innovation and transformation (Rindova, Barry and Ketchen, 2009; Hughes *et al.*, 2012). This broader view is consistent with previous research which defines entrepreneurship in relation to “creating something new” (Rindova, Barry and Ketchen, 2009). Moreover, the insights provided from the literature reveal that the issues related to female entrepreneurship are interrelated and that a holistic approach should be adopted to advance its scholarship (Parker, 2010; Jennings and Brush, 2013). The interrelatedness of the topic is depicted in **Figure 2.1**.

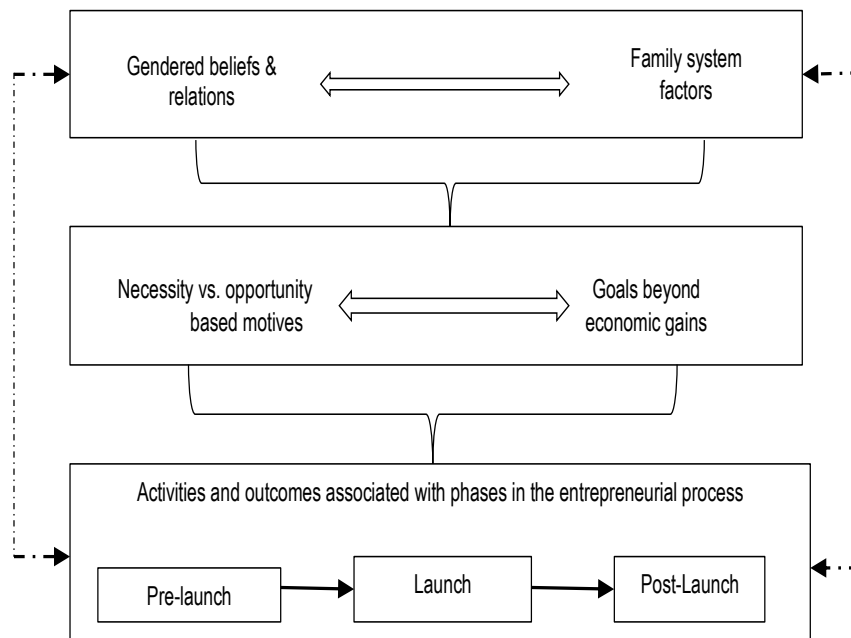


Figure 2. 1: A Holistic Approach: Interrelated Perspectives on Female Entrepreneurship

Source: Journal Article on “Research on Women Entrepreneurship” by Jennings & Brush (2013)

According to **Figure 2.1**, the interlinked perspectives included in the holistic framework for female entrepreneurship developed by Jennings and Brush (2013) are summarised as follows: (1) entrepreneurship as a phenomenon is gendered; (2) entrepreneurial activity is embedded in the general family structure in terms of influence and impact; (3) entrepreneurial activity can result from both necessity and opportunity; and (4) entrepreneurs pursue goals beyond economic gain (Jennings and Brush, 2013). The principal implication of these intertwined perspectives is that standard traditional models of entrepreneurship, which tend to assume a dominant focus on economic growth, money, market/opportunity, and management are inadequate to capture and account for the lived experiences of female entrepreneurs. Empirical studies have highlighted the multidimensionality of entrepreneurship and female entrepreneurship (Kivalya and Caballero-Montes, 2024) and the need to integrate gender ideologies of equality and inclusion (de Bruin and Swail, 2024) which serve to provide a counter narrative when critically analysing the “localised” contextual experiences of female entrepreneurs in the context of developing countries (Akhmadi and Tsakalerou, 2023; Cummings and Lopez, 2023; Peiris, Tatli and Ozturk, 2024). This further

lays the foundation for undertaking more coherent research and provide a springboard for advancing a broader understanding of female entrepreneurship (Brush, de Bruin and Welter, 2009).

In addition to the above-mentioned interrelated perspectives of Jennings and Brush (2013), the researcher surmises that there is a need to integrate recent debates which contend that the historical, political and socio-cultural contexts play an important role in explicating the gendered contexts of female entrepreneurship (Zahra, Wright and Abdelgawad, 2014; Baker and Welter, 2020). Moreover, the work done by Brush *et al.* (2009) in constructing a gender-aware framework for female entrepreneurship not only emphasises the embeddedness of family systems in female entrepreneurship, but also makes explicit that these are highly interconnected with the meso and-macro environment inclusive of support services, institutions, policies, laws, history and culture which provide added empirical rationale for expanding research on female entrepreneurship (Jennings and Brush, 2013). In seeking to complement and extend research in this field, this study draws on previous studies undertaken which focused on the empowerment and emancipatory aspects of female entrepreneurship (Hughes *et al.*, 2021). Specifically, in light of the emancipatory and empowerment potential of digital technologies (McAdam, Crowley and Harrison, 2020), this is deemed useful to obtain new and interesting insights in exploring the outcomes of the interplay between female entrepreneurship and digital entrepreneurship.

In relation to the concept of empowerment in general, and the empowerment of female entrepreneurs operating SMEs in particular, there are mixed findings which fuels ongoing debates and controversy among scholars (Kivalya and Caballero-Montes, 2024). This suggests that studies on entrepreneurial empowerment are incomplete, which in turn offer scope to extend the knowledge and understanding on the concept with implications for theoretical extensions and development (Aman *et al.*, 2022). Across the multidimensionality of the concept, this study conceptualises empowerment as a relational and political process that is shaped by context, power and voice (Ng, Wood and Bastian, 2022). Interestingly, this perspective resonates with the critique of an assumed virtuous spiral between empowerment and entrepreneurship among women in the Global South (Al-Dajani and Marlow, 2015).

Furthermore, from a theoretical standpoint, there is scope to contribute to reframing entrepreneurship by adopting a broader view of the different contexts of female entrepreneurs. In acknowledging that there is no ideal context for entrepreneurship (Baker and Welter, 2020), suggests that the same argument can be extended towards female entrepreneurship. The growing debates of and appreciation for the importance of context in entrepreneurship have improved rigour in the research and contributed to a better understanding of entrepreneurship in its various forms (Welter and Baker, 2021). To the extent that a focus on context in the field of entrepreneurship has been described as the third wave in entrepreneurship, there is resonance in the claim that the multidimensional nature of context shapes the everyday experiences of entrepreneurship (McAdam and Cunningham, 2021). Additionally, the tendency to project an apparent ahistoric model of a western-centric typology of entrepreneurship raises concerns to pay close attention to the gendering of context in a manner that unmask hidden heterogeneity and complexity of female entrepreneurship in developing countries (Dean *et al.*, 2019). Invoking the post-colonial Caribbean island-states context, portends to raise questions and provide insights that showcase inattention to new frontiers of female entrepreneurship. Therefore, by the integration of the contextual perspectives, meaningful advancement in the entrepreneurial research field cannot maintain standard assumptions of a “one-size-fits-all” perspective as this will result in the loss of invaluable insights from relevant diversity, heterogeneity and multidimensional aspects (Baker and Welter, 2020), and therefore ultimately support the notion of making a contribution to the body of knowledge. Indeed, approaches such as these are what have been classified as mitigating against results of many dead ends (Ahl and Marlow, 2012) in the research stream of entrepreneurship. This situation, therefore, underscores the critical importance of understanding the combinations of the various antecedent and contextual conditions which affect the experiences of female entrepreneurs and inform policies that are aimed at promoting female entrepreneurship in all sectors.

2.4.3 Challenges and Opportunities of Female Entrepreneurship in Developing Countries

Although female entrepreneurship is of importance for individuals, for communities and countries (Minniti and Naudé, 2010), the literature on female entrepreneurs mostly reflects an individualized

orientation (Ahl, 2006). However, this individualistic focus seldom invokes key contextual issues relating to social arrangements which also influence female entrepreneurship such as culture, legislation and politics (Ahl, 2006). Additionally, it is noted that the individualistic orientation tends to lead to and to limit the selection of research techniques towards a preponderance of quantitative techniques such as regression, t-tests and correlation analyses in searching for differences between male and female entrepreneurs (Ahl, 2006). Not only does this approach inadvertently reinforces the misconception that the individual rather than the social arrangements explains the differences, but the attendant policy prescriptions also suggest that the women must change if they are to derive success in their entrepreneurial endeavours (Ahl, 2006; Hughes and Cohen, 2010). This issue is discussed in further detail in Chapter 4 which describes the selected methodological approach for this study. For many years, researchers into entrepreneurship have focused their interests in the differences in the rates of performance and participation by female entrepreneurs (Parker, 2010), and they have expended considerable efforts to explain these differences and the gender gaps; concentrating primarily on developed economies (Jennings and Brush, 2013). This brings into sharp focus the claim that the nature and structure of entrepreneurial activities are not homogenous as they vary across countries and time (Acs *et al.*, 2011) and by extension a range of other factors.

Considering further that the differences within and across countries have been punctuated by showing the marked interdependencies between economic development and the institutional framework, this resonates with the argument that the potential important role of female entrepreneurship in the development process remains underdeveloped (Brush, 2010). Therefore, by integrating how gender is done, as well as the relevant contextual social arrangements, and the broader perspective of entrepreneurship, there is potential scope for research to contribute to the objective of expanding new directions in the field (Ahl, 2006). Further, considerations of a contextual and gendered approach to address these research gap, signals the need for a nuanced framework to organise an exploration of the phenomena to gain a deeper understanding of the impact of the interplay of female entrepreneurship, digital entrepreneurship and entrepreneurship based on an in-depth exploration of female digital entrepreneurs in developing countries.

For developing countries in the Global South, such as those in Latin America and Caribbean region, there is heightened interest in undertaking seminal and empirical studies on female entrepreneurship (Minniti and Naudé, 2010; Pounder, 2015; Minto-Coy, Lashley and Storey, 2018). It is important to note that this expanded interest is predicated on the general interest in the role of entrepreneurship in the economic development process (Naude, 2010a), the socio-cultural development and the rapid increase in the quantity and proportion of female entrepreneurs in developing countries (Minniti and Naudé, 2010). For the purpose of this study, the focus on developing countries is within the Caribbean region which is part of Latin American and Caribbean (LAC) region.

According to a study done by Terjesen and Amorós (2010), in the general social context of the LAC region, a female managed business enterprise is considered to be supplementary and an extension of the family. This seems to align with the belief that, culturally, women in developing countries rely on extended families as a main source of social networking (Weiler and Bernasek, 2001). Hence in the LAC region, of which the Caribbean is a part, female entrepreneurs are expected to fulfil their traditional family roles while developing their entrepreneurial skills (Terjesen and Amorós, 2010). The influence of the colonial and historical experiences on Caribbean female entrepreneurship depicts important paradoxes and nuances where historically the women of African descent generally worked side by side with the men in the fields, they were heads of households, and dominated the higgler trade⁴ in clothing, foods, and consumer goods (Lochan, 2004). Yet, in the Caribbean, the emergence of a feminist ideology in the late 19th century (early post-colonial era) which linked women's role and the image of womanhood to childbearing and a social nurturer was one example of the impediments to female empowerment. Although the other ethnic groups of women (Indian, Chinese and Syrian) did not experience the harsh conditions of slavery as they worked under voluntary and contractual arrangements of indentureship, they also experienced patterns of subordination based on the tradition of fixed marriages and their main function was that of becoming wives. Hence, an underlying unwritten policy which existed in the early post-colonial era was that Caribbean women could not be placed in charge of men as their womanhood and roles of leadership in business and even politics were incompatible with the social

⁴ In the Caribbean context, the higgler trade is historically tied to informal economic activities of small-scale sellers or itinerant traders who were mostly women negotiating for the best prices.

norms (Berleant-Schiller and Reddock, 1999). Paradoxically, while these norms shaped the survival of families and households in the Caribbean, they simultaneously contributed to maintaining a sense of subordination among women, inclusive of female entrepreneurs (Slocum and Shields, 2008).

The Economist Intelligence Unit (2013) indicates that many female entrepreneurs in the LAC region start their businesses based on opportunity identification, but that these businesses generally fail to grow beyond micro, or small and medium enterprises. This attribute aligns with a recent report on the United Nations Conference of Trade and Development (UNCTAD) eTrade for Women which indicates that female entrepreneurship in developing countries is increasing to the extent there are approximately 8 to 10 million formal small and medium enterprises (SMEs) that are managed or owned by women (UNCTAD, 2022). Furthermore, analyses undertaken by the Global Entrepreneurship Monitor (2020) reveal: (i) the importance of female-led businesses to economic growth and development is higher in LAC region than in Asian countries, (ii) the gender gap is lower in LAC region than in Asian countries, and (iii) women view being employed and participating in social networks as more important than educational qualifications.

In using the Integrated Framework Assessment for an Enabling Environment for Women-Owned Businesses as developed by the International Labour Organisation (ILO), some of the key challenges faced by female entrepreneurs in the LAC region relate to access to credit and financial services, institutionalism, the legal and regulatory framework, the distribution of time, citizen security, and gender-based violence (Alecchi, 2020). Despite the previous work undertaken by researchers such as Terjesen and Amoros (2010) and Alecchi (2020) which focused on assessing the environmental factors influencing businesses owned by women in the LAC region, it seems that these studies treated the contextual factors as “out there” (Welter and Baker, 2021). This resonates with the call made by Welter and Baker (2021) for studies to challenge this approach and instead examine how entrepreneurs *do contexts*. This distinctive expanded focus on entrepreneurial contexts matters (McAdam and Cunningham, 2021). Therefore, an in-depth exploration of how female entrepreneurs in the Caribbean region interact with their environments to construct the contexts in which they operate portends significant scope for contributing to theory and policy development, particularly within the distinctive dynamics of entrepreneurship in

developing countries. Considering that the positive effect of fostering digital transformation is a recent phenomenon with unclear impacts on female entrepreneurship (Gaweł and Mińska-Struzik, 2023), it is worth exploring the relationship between digitalisation and female entrepreneurship in the current digital environment. Evidence that an increase in digitalisation is already unravelling unevenly across and within geographies, sectors, and social groups (Nambisan, Wright and Feldman, 2019; Jawad, Naz and Maroof, 2021), and that both digital technology and entrepreneurship are highly gendered (Balkmar, Lindvert and Ljunggren, 2024) demands a critical analysis of the role digital entrepreneurship plays in addressing gender inequality among female entrepreneurs (Martinez Dy, Martin and Marlow, 2018).

2.5 Digital Entrepreneurship: Perspectives

2.5.1 Digitalisation of Entrepreneurship

The concept of “digitalisation” is described as the adaptation of digital technologies in society, business and economy and the provision of possibilities to connect individuals, objects, firms and organisations (Rosin *et al.*, 2020, p.1031). Undoubtedly, the rapid growth and innovation in digital technologies have not only created new digital paradigms (Ughetto *et al.*, 2019), but have also radically changed traditional processes, strategies and structures (Ladeira *et al.*, 2019). These new digital paradigms, which include a wide range of enabling technologies (such as Internet of Things - IoTs, big data, cloud computing, virtual reality and augmented reality), have changed the way people work and live, as well as modified the way of doing business (Oggero, Rossi and Ughetto, 2019; Ughetto *et al.*, 2019). Within the context of entrepreneurship, research has shown that the application of digital technologies has revolutionised business entities across the globe (Ladeira *et al.*, 2019; Rosin *et al.*, 2020). Additionally, given their disruptive nature and potential in expanding options for existing and prospective entrepreneurs (Giones and Brem, 2017), digital technologies have been posited as a key source of transformation of the entrepreneurial environment (Ughetto *et al.*, 2019). It is, therefore, not surprising that across the globe, the digital transformation of ecosystems is claimed to be opening new opportunities for entrepreneurship (UNCTAD, 2022). For instance, in recent years, the use of digital technologies such as social media, mobile computing and cloud computing (Nambisan, 2017) has enabled entrepreneurs to overcome obstacles all along the value chain (Rosin *et al.*, 2020). Other effects on entrepreneurship resulting

from the use of digital technologies are enhanced access to real-time data and information, improved transparency of workflows, identification of risk factors, faster decision making, and enhanced opportunities for cost savings (Rosin *et al.*, 2020;Jawad, Naz and Maroof, 2021).

More specifically, digital technologies have “upended extant understanding of entrepreneurial processes and outcomes” by rendering these to be less bounded and less predefined and more toward “a dynamic collection of agents with varied goals, motives and capabilities” (Nambisan, 2017, p.1029-1030). Intrinsically, digital technologies have rendered entrepreneurial processes broader and more diverse, while the outcomes are more flexible and evolving continuously. Moreover, the COVID-19 pandemic has led to an increased use of digital technologies in business enterprises based on boosted demand for digital services and solutions including e-commerce (Ristovska, Blazheska and Gramatnikovski, 2023). Considering that the use of digital technologies has permeated entrepreneurship (Giones and Brem, 2017) and has changed traditional assumptions, suggest there is merit in ensuring that the theoretical framework for seminal research is informed by a digital technology perspective that includes “digital-technology-related theories, concepts and constructs” (Nambisan, 2017, p.1030). This is particularly relevant given that researchers have claimed that there is a major gap in the conceptualisation of entrepreneurship in the current digital era (Sussan and Acs, 2017).

Within the realm of entrepreneurship, digital technologies are exhibited as three distinct and interrelated elements; namely: digital artifacts, digital platforms and digital infrastructure (Nambisan, 2017). By giving a brief description of these elements, some basic elements of the digital context of the study are clarified and useful insights can be derived in relation to the implications for entrepreneurship (Giones and Brem, 2017). First, as cited in Nambisan (2017, p.1031), digital artifacts are defined as “digital components, applications or media contents that are part of a new product or service and offer specific functionalities to end users”. From the literature, two important features of digital artifacts are that they can be accessible on personal devices and home devices (such as smart phones and automobiles) and can be operated as stand-alone or as part of a broader ecosystem which operates on a digital platform (Ekbias, 2009;Giones and Brem, 2017). Moreover, with such digital artifacts, information can be decoupled from a related physical device and infused into a plethora of products and services; thereby facilitating

the identification and exploitation of a wide array of entrepreneurial opportunities across different industries (Nambisan, 2017). Second, digital platforms (such as Google's Android and Apple's iOS) are shared, common set of services and architecture that host complementary digital artifacts and other offerings (Nambisan, 2017). These platforms provide entrepreneurial opportunities in production, marketing, and distribution (Giones and Brem, 2017;Nambisan, 2017). Third, digital infrastructures are characterised as the digital technology tools and systems (such as social media, cloud computing, online communities, 3D printing, and such others) that enable communication and collaboration to support entrepreneurship and innovation (Nambisan, 2017).

The emerging nature of digital technologies as being “more service-focus, socially embedded, open, and laden with intensive human interactions” (Sussan and Acs, 2017, p.59), supports the claim for a more dynamic, flexible, open, inclusive and global view be taken of digital infrastructures and their enabling capabilities to democratise entrepreneurship (Aldrich, 2014;Pergelova *et al.*, 2019). Moreover, although in the literature the term digital infrastructure seems to be used interchangeably with terms such as information infrastructure, IT infrastructure and e-infrastructure, the concept incorporates multiple layers of systems and processes that work simultaneously within decentralised and shared framework of various stakeholders (Sussan and Acs, 2017;Beliaeva *et al.*, 2020). Hence, based on these three elements, it is inarguable that digital technologies are increasingly an inherent aspect of entrepreneurial processes and outcomes (Jawad, Naz and Maroof, 2021) in terms of the opportunities they provide for innovation. Moreover, by drawing on Davidson's entrepreneurial opportunity framework (Nambisan, 2017), it is posited that digital artifacts and digital platforms contribute to the outcomes of business enterprises, while digital infrastructures support the business processes by acting as external enablers. From a research perspective, the characteristics and capabilities of these technologies, portend to influence entrepreneurial innovation, boundaries, and agency (Kraus *et al.*, 2019), while the interaction of the human actors (that is, the entrepreneurs in this case) with the technologies evoke different possibilities of outcomes (Nzembayie and Buckley, 2022). **Figure 2.2** depicts a conceptual framework for describing the interrelationships between digital technologies, female entrepreneurs, contexts and the impact on female entrepreneurial processes and outcomes.

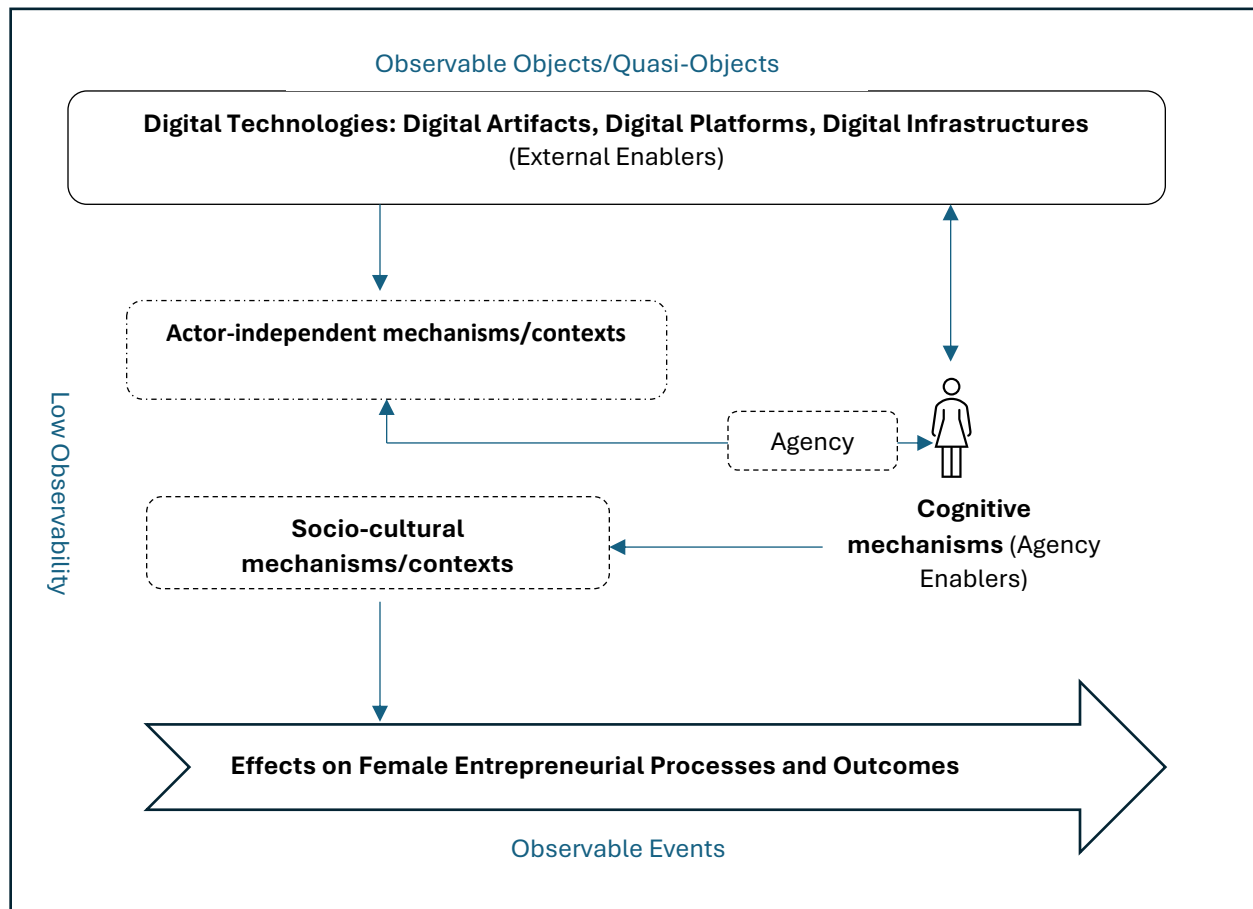


Figure 2. 2: Framework for Interrelations between Technologies, Female Entrepreneurs, and Entrepreneurial Processes and Outcomes

Source: Adapted from Nzembayie and Buckley, 2022, p. 52

By adapting the framework of Nzembayie and Buckley (2022), the researcher posits that digital technologies enable entrepreneurship by producing actor independent mechanisms which in turn influence the process of emergence. With this process and the application of agency, the entrepreneurs as actors use their cognitions (knowledge and motivations) to convert these mechanisms into their social contexts/mechanisms and ultimately drive and influence the entrepreneurial processes and outcomes. In this study, entrepreneurial agency include dimensions that are related to the processes by which the entrepreneurs make decisions, the processes that

determine how they use resources to implement or act on the decisions, and the processes employed to achieve outputs (Pineda Duque and Castiblanco Moreno, 2022). It is against this backdrop that Section 6.4 of this study provides relevant nuanced empirical insights on entrepreneurial agency in the context of the empowerment and leadership of female digital entrepreneurs in developing countries. Thus, through the use of the technologies, the female entrepreneurs, as actors, have the capacity to influence and shape the entrepreneurial processes and outcomes respectively.

Previous research has shown that there is a growing and ubiquitous use of digital technologies, as well as a heightened appreciation for their advantages in the business environment (Rosin *et al.*, 2020;Jawad, Naz and Maroof, 2021). The general positive influences of digital technologies on entrepreneurship includes, *inter alia*, improved and wider market access; lowered cost given the need for less infrastructure to store products; and more effective stakeholder involvement (Ladeira *et al.*, 2019;Rosin *et al.*, 2020). Further, the benefits of integrating digital technologies in small and medium enterprises (SMEs) are depicted in their ability to overcome resource constraints and enhance their contribution to socio-economic development (Oggero, Rossi and Ughetto, 2019;Roblek *et al.*, 2021) through resource savings, greater operational efficiency and flexibility; which are in line with the resource-based view (RBV) (Ladeira *et al.*, 2019). Yet, there is a paucity of empirical testing of these claims in an entrepreneurial environment and there are limited explanations of the benefits of employing digital technologies in entrepreneurship (Rosin *et al.*, 2020). For instance, although digital technologies have altered the nature and pursuit of entrepreneurship, there are still questions surrounding why SMEs generally seem to lag behind larger businesses in adopting and using such technologies (Oggero, Rossi and Ughetto, 2019).

Additionally, there are relatively limited studies on how digital technologies (inclusive of its three interlinked elements) influence and shape some of the changing assumptions of entrepreneurship; particularly those related to the nature of innovation and its boundaries, as well as the distribution of entrepreneurial agency (Nambisan, 2017). The literature has outlined that the impact of digital technologies is yet to be fully explored (Oggero, Rossi and Ughetto, 2019). Consequently, there have been several calls by researchers to undertake additional studies to analyse how digital technologies shape the complex environment and contexts of entrepreneurship (Kraus *et al.*,

2019;Rosin *et al.*, 2020). Moreover, debates regarding the opportunities, challenges and enabling factors of digital technologies are of continued high topicality today as technological innovations continue to mushroom within the business environment (Kraus *et al.*, 2019). Therefore, recent research aimed at obtaining a better understanding of the causal relationship between digital technologies and entrepreneurship have given rise to a relatively new research stream known as digital entrepreneurship (Giones and Brem, 2017;Nambisan, 2017;Kraus *et al.*, 2019;Ladeira *et al.*, 2019;Rosin *et al.*, 2020).

In the LAC region, a report which focused on the digital gender divide at the national level across countries, showed that a gender gap exists, and this is even higher in the rural areas (Billari *et al.*, 2020). Further, the report indicated that the lower the digital gender gap, the lower the gender gap in the employment level and the labour force participation among vulnerable groups in the given country (*ibid.*). Information on some digital entrepreneurial programmes mostly feature those that are funded by international agencies such as the Digital Finance for Resilience (DFS4Resilience) supported by the European Union; the Organisation of African, Caribbean and Pacific States (OACPS); United Nations Capital Development Fund (UNCDF) (UNCDF, 2024); and the SheTrades Caribbean Hub supported by the Caribbean Development Bank (CDB) and the International Trade Centre (ITC). The achievements of these programmes suggest that digital technologies play a role in supporting the development of marketplace platforms for female entrepreneurs to help them grapple with challenges in the business environment (The Caribbean Development Bank, 2025). Being mostly geared to supporting MSMEs, the development of the online marketplace platforms takes into consideration the cultural, social and economic realities of the female entrepreneurs with a view enhancing their access to new markets, networking and expanding capacity to deliver business services and products. Notwithstanding the evidence on the positive outlook of the use of the technologies on the Caribbean entrepreneurial environment, the results mostly allow for descriptive analysis. This points to a need for more granularity to better understand the trends in digital entrepreneurship to critically assess its effect on female entrepreneurship in the regional context.

2.4.2 Digital Entrepreneurship: Research Stream

The research stream of digital entrepreneurship can be loosely described as studies on the phenomenon which have arisen from research questions that focus on the integration of digital technologies and entrepreneurship. In the literature, this intersection seems to reflect the integration of two complex ecosystems: namely, the entrepreneurial ecosystem and the digital ecosystem (Sussan and Acs, 2017;Beliaeva *et al.*, 2020). Yet, the relative limited scope of the studies undertaken so far, and the recent calls for more in-depth analysis on digital entrepreneurship seem to support the claim that the research stream is still in its infancy but that it is dynamic and emerging (Kraus *et al.*, 2019;Rosin *et al.*, 2020;Ilias *et al.*, 2021). From a research standpoint, there have been attempts at proposing distinctions between the conceptualisation of the typologies of digital entrepreneurship, technology entrepreneurship and digital technology entrepreneurship with a view to learning more about the motivations of the digital entrepreneurs and “the story” behind the offerings of their services or combined products and services (Giones and Brem, 2017). Instead of seeking to add to the debate in defining the distinction of these concepts, this study contends that these labels may be irrelevant to the entrepreneurs themselves and thus proposes that the concept of digital entrepreneurship combines elements of entrepreneurship and digital technologies (Giones and Brem, 2017;Sussan and Acs, 2017) and more. In line with the evidence-informed systematic review of the literature undertaken by Kraus *et al.* (2019) which revealed that the terminology of digital entrepreneurship is substituted and used interchangeably with those of digital venture, digital innovation, digital enterprises and digital business, for consistency, this study uses the terminology of digital entrepreneurship.

General interests in digital entrepreneurship in the last decade reveal there is an increase in the number of studies and the contributions of extant literature on the topic (Nambisan, 2017;Ladeira *et al.*, 2019;Ilias *et al.*, 2021). Although the amount of research papers on digital entrepreneurship is not extensive (Kraus *et al.*, 2019;Ilias *et al.*, 2021), the existing divergence in the literature on the characteristics and definitions of digital entrepreneurship suggests there is a lack of consensus among scholars (Giones and Brem, 2017). Among the scholars, definitions of digital entrepreneurship range from it being a sub-category of entrepreneurship, which focuses on digital products/services that are sold across electronic networks to it being a multifaceted concept which

encompasses business entrepreneurship, knowledge entrepreneurship and institutional entrepreneurship (Kraus *et al.*, 2019; Ilias *et al.*, 2021). **Table 2.1** gives an overview of the various definitions of digital entrepreneurship found in the literature.

Table 2. 1: Definitions of Digital Entrepreneurship

Author	Definition of Digital Entrepreneurship
Davidson and Vast (2010, p.8)	Digital entrepreneurship: pursue new venture opportunities presented by new media and internet technologies.
Guthrie (2014, p.116)	[Digital entrepreneurship] is the creation of a venture to produce and generate revenue from digital goods and across electronic networks.
Hair <i>et al.</i> (2012, p.2)	Digital entrepreneurship may be defined as entrepreneurship in which some or all the entrepreneurial venture takes place digitally instead of in more traditional formats.
Hull <i>et al.</i> (2007, p.293)	Digital entrepreneurship is a subcategory of entrepreneurship in which some or all of what would be physical in a traditional organisation has been digitised.
Le Dinh <i>et al.</i> (2018, p.1)	Digital entrepreneurship is defined as the reconciliation of traditional entrepreneurship with a new way of creating and doing business in the digital era.
Richter <i>et al.</i> (2017, p.300)	Digital entrepreneurship [...] is [...] defined as occupying niches, monetizing business opportunities, as well as being innovative, radical and risk-taking.
Sussan and Acs (2017, p.66)	Digital entrepreneurship [...] includes any agent that is engaged on any sort of venture be it commercial, social, government, or corporate that uses digital technologies. [...] In other words, they are performing activities that need digital engagement but may not in themselves be digital, for example, an Uber taxi driver.

Source Kraus et. al, 2019 p.355

Notwithstanding the divergence among scholars in ascribing a common definition to digital entrepreneurship as shown in **Table 2.1**, it is fair to argue that implicitly and explicitly they seem to concur with the notion that “digital entrepreneurship” is considered a subset of entrepreneurship. This is borne out for instance, by Hull *et. al* (2007) who explicitly define digital entrepreneurship

as a subcategory of entrepreneurship in which some or all of what would be physical in a traditional organisation has been digitised. Implicitly, this definition is reflected in that of Le Dinh *et al.* (2018) who state that digital entrepreneurship is a reconciliation of traditional entrepreneurship with a new way of creating and doing business in the digital era (Kraus *et al.*, 2019). Hair *et al.* (2012) and Susan and Acs (2017) expanded on these definitions, where the latter added a more technology-centred element. Similarly, it is noted that while Susan and Acs (2017) and Davidson and Vaast (2010) had different definitions of the phenomenon of digital entrepreneurship, they highlight the unique and explicit integration of the user dimension (Kraus *et al.*, 2019); thereby emphasising the value of agency in leveraging the digital technology to seek and act on opportunities in the entrepreneurial ecosystem. Perhaps, a possible explanation for the divergence can be linked to the different ontological and epistemological assumptions of the researchers (Tsoukas and Chia, 2011) which influence their particular selection of a definition, as well as the different emergent dynamics associated with the different trajectories for technology evolution (Giones and Brem, 2017). Such diversity in the definitions suggests that as the debates ensue, digital entrepreneurship continues to emerge (Rosin *et al.*, 2020; Ilias *et al.*, 2021). Yet, there can be multiple research opportunities emanating from the uniqueness and novelty of the phenomenon of digital entrepreneurship in this unprecedented digital revolution across the globe (Giones and Brem, 2017).

For the purposes of this study, the definition of digital entrepreneurship that is most applicable is based on that of Davidson and Vaast (2010) who described it as the pursuit of new business opportunities presented by the digital media and other information and communication technologies. This definition not only emphasises that the entrepreneurs rely on the features of digital technologies to pursue business opportunities but that these are also impacted by the social context and motivation of the entrepreneurs. This depicts the socio-material elements of digital entrepreneurship whereby in practice, there is a recursive intertwining of the entrepreneur and the technology (Davidson and Vaast, 2010). Hence, as the digital entrepreneurs seize new opportunities, they are able to create change in the business landscape (Nzembayie and Buckley, 2022).

Researchers have argued that digital entrepreneurship, which is enabled by digitisation, is instrumental in the disruptive transformation of entrepreneurship (Nzembayie and Buckley, 2022) and that new dimensions as well as multi-dimensional combinations emerge from their integration (Giones and Brem, 2017). Such perspectives have been expressed by influential international organisation such as the European Commission, when in 2014, it reported that “digital entrepreneurship creates new business opportunities and accelerates the transformation of the business landscape, through the development and smart use of novel digital technologies, in order to increase growth and create employment” (Ladeira *et al.*, 2019, p.1079). However, such sentiments, as promulgated by global entities, are heavily predicated on assumptions of the neutrality and meritocratic functionality of digital technologies (Martinez Dy, Marlow and Martin, 2017). While the level of disruptiveness can be visible in digital entrepreneurship, it can also lead to intangible results, such as the fuelling of entrepreneurial hope and optimism, which also challenges assumptions related to the creation and capturing of value in the digital era (Nzembayie and Buckley, 2022). In addition, it not uncommon that terms such as digital transformation and digitisation as used in the digital world are promoted as distinct from the physical world and with capabilities to transcend biases towards the marginalised and disadvantaged (Martin and Wright, 2005; McAdam, Crowley and Harrison, 2020) in digital entrepreneurship. Moreover, they do not take into consideration recent calls for the revision of digital entrepreneurship as explained by Giones and Brem (2017) who argued that there is also a dark side to digital entrepreneurship. For instance, in relation to the rapid growth of technology, this can result in higher failure risks for some entrepreneurs who are entering into a space where the roles are unclear, and the technology base is still evolving. Consequently, additional studies are important to expand the body of knowledge on the transformational impact of digitisation on normative theoretical assumptions about entrepreneurship.

Further, while the broad heterogeneity among digital entrepreneurship can be categorised as light, moderate and extreme entrepreneurship (Hull *et al.*, 2007), there is a dearth of information on the dynamic interplay between entrepreneurs and the required technological know-how; access to information about customers, competitors and other stakeholders; and access to wider and varied market (Ladeira *et al.*, 2019). This is borne out by the different digital processes, digital products/services, digital customer interaction, and digital collaboration emanating from the three

categories of digital entrepreneurship described as light, moderate, and extreme (Hull *et al.*, 2007). As detailed in Sub-section 4.5.1 and depicted in Figure 4.2, light digital entrepreneurship focuses on the use of digital technologies as a complement to the more traditional processes, moderate digital entrepreneurship focuses on the digital products/services and other components, and extreme digital entrepreneurship focused on having digital products/services and processes (Kraus *et al.*, 2019;Ladeira *et al.*, 2019;Rosin *et al.*, 2020). Notwithstanding these known diversities, not much is known about the extent to which these different categories impact the outcomes of entrepreneurial efforts; particularly in enabling individuals to overcome challenges, including those of social marginality (Martinez Dy, Marlow and Martin, 2017). This is not to say that most of these previous studies have focused on the superficial matters associated with digital entrepreneurship. Rather, the intent is to underscore the importance of the call for more studies on digital entrepreneurship (Nambisan, 2017;Ladeira *et al.*, 2019) to deepen the understanding of digital technologies not only as resources for entrepreneurship according to resource-based view (RBV) (Rosin *et al.*, 2020), but also to take into consideration the social, economic and cultural contexts of entrepreneurship (McAdam, Crowley and Harrison, 2020). Hence, this brings into sharp focus the need to adopt a more balanced approach towards understanding digital entrepreneurship among women by critically assessing the interplay between the digital and entrepreneurship contexts within their complex ecosystems and theorising on the results. In other words, considering the constraints and challenges faced by female entrepreneurs in the Caribbean as stated in Sub-section 2.4.3, there is a need to explore further how the use of digital technologies available to them provide options to make meaningful changes in their business endeavours.

Despite the plethora of constraints faced by female entrepreneurs across the globe, and particularly in developing countries, they continue to participate in a wide range of entrepreneurial activities by developing agentic strategies to gather and exploit resources and navigate complex barriers (Marlow, 2014). While in several literature digital entrepreneurship is presented as a “great leveller” (McAdam, Crowley and Harrison, 2020) in empowering and enabling greater economic participation for socially marginalized groups such as women (Martinez Dy, Marlow and Martin, 2017), there are current debates on whether digital technologies provide new opportunities to empower women to benefit from the emancipatory and other potentials of entrepreneurship (Martinez Dy, Martin and Marlow, 2018). Further, some current perspectives which run counter

to the argument of digital entrepreneurship as a “great leveller”, refer to the “digital double bind” on female entrepreneurs who must also confront gender stereotypes in the field of entrepreneurship (McAdam, Crowley and Harrison, 2020). Yet, the manner in which the phenomenon of digital entrepreneurship is gendered remains under-explored (Martin and Wright, 2005; Martinez Dy, Marlow and Martin, 2017). Hence, there is a research gap in exploring whether digital entrepreneurship can alleviate existing constraints faced by female entrepreneurs and destabilise conventional gender assumptions (Ughetto *et al.*, 2019). This is demonstrated in the coterminous biases and related stereotypes of agentic entrepreneurial deficits associated with female entrepreneurs (Ahl and Marlow, 2012) which are also infused in assumptions of a “neutral” Web (Martinez Dy, Marlow and Martin, 2017).

Additionally, studies have shown that there is a wide array of entrepreneurial activity in which women are engaged online but that these tend to be neglected in favour of high-tech entrepreneurship which is often projected as the epitome of digital entrepreneurship (Nambisan, 2017). Bearing in mind that high-technology entrepreneurship is mostly associated with Silicon Valley (Ozkazanc-Pan, 2012), suggests that the nexus with entrepreneurs in developing countries is inherently dubious and problematic. Moreover, it is important to note that the nuanced perception of Silicon Valley entrepreneurs is based on the normative of young, white, male engineers and computer scientists. Hence, women’s engagement in digital entrepreneurship in developing countries who face restrictive social and cultural practices in male dominated settings demands greater recognition (McAdam, Crowley and Harrison, 2020). Information from the literatures on cyberfeminism and critical race studies has also pointed to critiques which proffer that the online environment is highly integrated with the offline world (McAdam, Crowley and Harrison, 2020). In other words, the experiences of female entrepreneurs in the online environment tend to mirror the inequalities they face in the offline environment which is characterised by constraints in terms of access, capacity and self-perception in relation to digital technologies (Martinez Dy, Marlow and Martin, 2017).

Similarly, the recent work done by media scholars has affirmed and extended on these theories by showing how disparities in socio-economic resources are reproduced online (Baker, Aldrich and Nina, 1997). Such contradictions further suggest that there is a fairly fragmented theoretical

approach and empirical investigation associated with digital entrepreneurship (Kraus *et al.*, 2019). This notion is explained by the theoretical concept of “cross-currents” which underscores the existence of “different dynamics that impede the process of harmonisation in a complex system of thoughts, ideas and concepts” (Ilias *et al.*, 2021, p.79). Therefore, it is argued that adopting interdisciplinary approaches can illuminate specific facets of the phenomenon of digital entrepreneurship that are largely neglected by existing assumptions of entrepreneurship because of the need to pay attention to both the physical and the virtual aspects of entrepreneurial activities (Dy, Marlow and Martin, 2017). It is not surprising that there are some discourses on digital entrepreneurship which recognise the diverse range of factors and influences that go beyond operating in physically bounded enterprises with a market presence, and by extension question the traditional relevance of applying traditional understandings of entrepreneurship to the new phenomenon (Nambisan, 2017). Moreover, the need to integrate a broad view of digital entrepreneurship that is not confined to high-tech and large businesses is critical to have a more holistic and wider understanding of the social, economic and cultural impact of digital entrepreneurship (McAdam, Crowley and Harrison, 2020), particularly in developing countries. In so doing, there is scope to draw on new theoretical lenses such as intersectionality theory and other feminist theories, such as post-colonial feminist theory (Crenshaw, 1991; Collins, 2015), as a key analytical framework to explore the impact of digital technologies on female entrepreneurship activity in under-researched areas, such as the Caribbean region.

In the Caribbean, most female entrepreneurs, who are located in geographical fragmented island states, are in the category of SMEs (Pounder, 2015) that are vastly different from the Silicon Valley environment. Recent research has shown that in the region, there is a mix of low-medium-high (or light-moderate-extreme) digital female entrepreneurs operating at various stages with offline systems and structures, social norms, culture and rules that are interlinked and influence the entrepreneurial environment (Best, Lassalle and Nicolopoulou, 2024). Thus, the entrepreneurial climate is ripe for exploring new possibilities to alleviate the traditional entrepreneurial challenges and constraints faced by female entrepreneurs, given the rapid and radical digital transformation within the business environment (McAdam, Crowley and Harrison, 2020) and the need for justice in removing the heritage of inequality and patterns of subordination among the region’s female digital entrepreneurs.

2.6 Female Digital Entrepreneurship

2.6.1 Entrepreneurship, Female Entrepreneurship and Digital Entrepreneurship

Evidently, while there is ubiquitous and widespread use of digital technologies in business enterprises (Chatterjee, Dutta Gupta and Upadhyay, 2020) across developed and developing countries globally, it is still early along the research trajectory to fully understand in-depth the impact of digital technologies on entrepreneurship (Fang, Henfridsson and Jarvenpaa, 2018) along gendered contextual lines. Further, although this situation provides significant avenue for exploring the use of such technologies by entrepreneurs within heterogenous entrepreneurial contexts, there is relatively limited extant literature and sparse empirical evidence of the effects on disadvantaged groups, including female entrepreneurs participating in digital entrepreneurship (Martinez Dy, Martin and Marlow, 2018). It is therefore not surprising that the dominant assumptions promote digital technologies as offering an online space that is more democratic and egalitarian for entrepreneurs (Martinez Dy, Martin and Marlow, 2018; McAdam, Crowley and Harrison, 2020). Notwithstanding these assumptions, critiques of the related “flat ontologies” argue that attention to gender lens remain salient online (Oggero, Rossi and Ughetto, 2019). Dy, Marlow and Martin (2017) have posited that gender issues are still under-explored in the context of digital entrepreneurship. Hence, in exploring the concept of female digital entrepreneurship, attention needs to be paid to both digital entrepreneurship and female entrepreneurship through gendered lens (Ahl and Marlow, 2012). Moreover, focusing on the topic of female digital entrepreneurship is deemed particularly important given the confluence of visible and invisible factors (Suseno and Abbott, 2021) that seem to paradoxically represent and influence both traditional and new waves of female entrepreneurs in their business endeavours (Weiler and Bernasek, 2001).

Debates surrounding the underrepresentation of women in entrepreneurship (Jennings and Brush, 2013; Ahl and Marlow, 2021) and in digital entrepreneurship (Martin and Wright, 2005; McAdam, Crowley and Harrison, 2020) point to a research gap on the topic of female digital entrepreneurship in the literature (Crittenden, Crittenden and Ajjan, 2019). This is important as there are mixed findings in assessing the interplay between female entrepreneurship and digital technologies (Nair,

2020;Gaweł and Mińska-Struzik, 2023). For instance, there are questions concerning viewpoints on the interplay such as: (i) whether it promotes gender equality where digital technologies are viewed as gender “invisible” or neutral and enablers that facilitate overcoming entrepreneurial barriers and constraints (Martin and Wright, 2005;Martinez Dy, Martin and Marlow, 2018); (ii) whether it sustains the gender gap where digital technologies are viewed as gendered and by extension project similar gender biases and assumptions of unequal access and limited representation (McAdam, Crowley and Harrison, 2020); and (iii) whether it strengthens labour duality among female entrepreneurs due to skills, income, sector, and location (Kelly and McAdam, 2022a;Imiren *et al.*, 2023). Notably, while there is a stream of contemporary literature and ongoing debates which recognise the wide range of cultural norms, stereotypes, and structural influences that facilitate and constrain female entrepreneurship in physical and substantive spaces (Martinez Dy, Martin and Marlow, 2018), the advent of digital entrepreneurship phenomenon has reignited calls for a fuller understanding of the meritocratic promises and unbounded opportunities offered to female entrepreneurs (Martin and Wright, 2005;Nambisan, 2017;Ughetto *et al.*, 2019).

When compared with other disciplines, the relative impermeability of gender considerations in studies related to digital entrepreneurship (Adam, Howcroft and Richardson, 2004) suggest that implicit assumptions and ideological narratives can conflate gender and other social inequalities (Martinez Dy, Martin and Marlow, 2018). Therefore, to explore a more nuanced perspective of how digital technologies reduce entry barriers and other stereotypical biases and discrimination, as well as empower women through entrepreneurship require an alternative ontology (Martinez Dy, Martin and Marlow, 2018). Cognisant of this situation, this study seeks to respond to calls for a better understanding of the effects of digital technologies on female entrepreneurship; particularly those in developing countries or emerging economies (Crittenden, Crittenden and Ajjan, 2019). Further, this research takes the approach of combining three areas of interest: entrepreneurship, female entrepreneurship and digital entrepreneurship. Thus, **Figure 2.3.** depicts the way in which the researcher engaged with the literature indicating a review of literature on mainstream entrepreneurship, female entrepreneurship, digital entrepreneurship and entrepreneurial context and how they intersect.

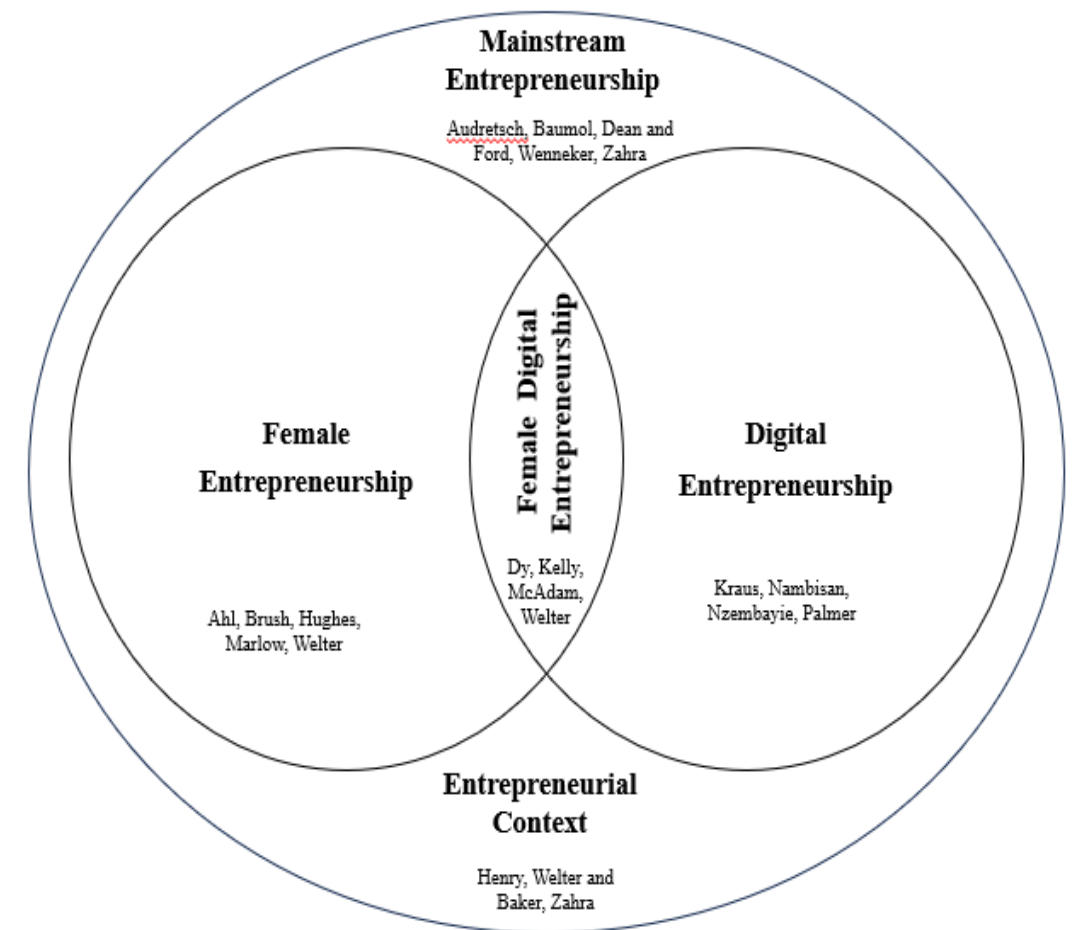


Figure 2. 3: Approach towards Engaging with Overlapping and Complementary Aspects of the Study in the Literature

Source: Author's own

This diagram shows that the study entails concepts which contain both overlapping and complementary issues where the core of the research is concentrated on the contextual aspects of female digital entrepreneurship. First, the literature has revealed overlapping research which examines female entrepreneurship and the broader field of entrepreneurship (Bruni, Gherardi and Poggio, 2004; Ahl and Marlow, 2012; Marlow and McAdam, 2013; Yadav and Unni, 2016). For instance, Marlow and McAdam (2013) have not only highlighted that the gender bias in entrepreneurship is recognised but have also cautioned against touting this recognition as being

counter-productive if it is a conduit for reproducing myths of deficits among female entrepreneurs in the “context of masculinized normativity” (Marlow and McAdam, 2013, p.114). Specifically, their critique of assumptions in entrepreneurship based on theoretical lenses of under-performance and constrained-performance underscores the need for greater reflexivity in deepening the understanding of female entrepreneurship. As a result, the integration of contextually sensitive feminist theories is considered useful to offer alternative pathways to engage and contribute to the debate in a broader non-Western centric and Global South context.

Second, there are also some overlapping studies related to entrepreneurship and digital entrepreneurship (Nambisan, 2017; Kraus *et al.*, 2019) and female entrepreneurship and digital entrepreneurship (Martinez Dy, Marlow and Martin, 2017; Crittenden, Crittenden and Ajjan, 2019; Pergelova *et al.*, 2019). For instance, Nambisan (2017) shows the results of less bounded entrepreneurial processes and outcomes due to the impact of digital technologies on entrepreneurship. Some examples of the theoretical lens of these studies include intersectionality, cyberfeminism, the Individual Differences Theory of Gender and Information (IDTGIT) (Suseno and Abbott, 2021), the Technology Acceptance Model (TAM) (Davis, 1989), and Technology Affordances and Constraints Theory (TACT) (Majchrzak and Markus, 2012). Further, relevant details on IDTGIT, TAM and TACT are discussed in Sub-section 2.6.2 of this thesis.

Third, authors such as Crittenden, Crittenden, and Ajjan (2019) examine the impact of digital technologies on empowerment in the context of female entrepreneurship, which in effect goes beyond the assumption of access to digital technology and towards the use of such technology. Here, it is important to note that Crittenden, Crittenden, and Ajjan (2019) have posited that the link between digital technologies and female entrepreneurs is indirect with mediators (social capital) and moderators (ease of use and use).

Fourth, there is scholarly work which examines the interplay of the contextual perspectives of entrepreneurship, female entrepreneurship and female digital entrepreneurship. Essentially, this work focuses on the importance of a critical appraisal of the dynamic influence of the various dimensions of context of entrepreneurship (inclusive of socio-cultural, spatial, geographical among others) which has further led to the adoption of a lens of “doing context” by entrepreneurs

(Hughes *et al.*, 2012; Baker and Welter, 2020). Such explicit discussion about context has led to it being described as “the third wave in entrepreneurship research” (McAdam and Cunningham, 2021, p.1) which is pivotal to nurturing new directions in the field of entrepreneurship (Hughes *et al.*, 2012). Hence, the relative dearth of seminal research which focuses on the impact of the use of digital technologies on female entrepreneurship (Ughetto *et al.*, 2019; McAdam, Crowley and Harrison, 2020), together with the limited theory which undergirds gender and digital entrepreneurship (Martinez Dy, Martin and Marlow, 2018) accentuate the importance of this research area and its potential to contribute to the theoretical debate and the body of knowledge, as well as the practice of female digital entrepreneurship.

Yet, with the rapid digital advances being promoted as a powerful avenue for new business opportunities and improved inclusion of women in the entrepreneurial environment of the Global South (Akhmadi and Tsakalerou, 2023), there is also an increased probability of a deepening digital gender divide in countries in the Caribbean region (Billari *et al.*, 2020). Hence, an understanding of the theoretical underpinnings of female digital entrepreneurship globally is considered a useful starting point towards building an appropriate theoretical framework for the Caribbean context.

2.6.2 Female Digital Entrepreneurship: Theoretical Perspectives

The existence of different theoretical approaches on female digital entrepreneurship offers opportunities to explore and even introduce new thinking in analysing the phenomenon, as well as challenge established thinking (Baxter, 2008). In many studies on digital entrepreneurship, the Technology Acceptance Model (TAM) has been used extensively to investigate the adoption of user behaviour in the use of technology (Crittenden, Crittenden and Ajjan, 2019) where the locus of research mostly considers behavioural and psychological issues (Adam, Howcroft and Richardson, 2004). While the literature underscores the importance of digital technologies as tools for female entrepreneurs, research has shown that the limiting aspects of this model do not facilitate a solid understanding of the outcomes of the use of technology (Venkatesh and Zhang, 2010). Therefore, notwithstanding the popular use of the TAM model, it is considered limited for use as the theoretical lens for investigating in-depth the impact of digital technologies on female

entrepreneurship (Crittenden, Crittenden and Ajjan, 2019), particularly in non-traditional regions such as those in developing countries. The framework of the “Individual Differences Theory of Gender and Information Technology” (IDTGIT) is used generally to examine both individual and social factors that affect women's participation in the field of Information Technology, while explaining their nuanced experiences (Trauth, 2017). The theory is focused on the individual orientations of the entrepreneur and further highlights issues and barriers that women professionals face in their given contexts – whether they are Information Technology (IT) professionals or entrepreneurs who use digital technologies (Suseno and Abbott, 2021). Despite the contemporary significance of these theoretical lenses in entrepreneurship research, they are mainly focused on entrepreneurship as practised in high technology-intensive environments where digital technologies are mostly treated as a context for the empirical study, while limited attention is paid to their role in shaping entrepreneurial opportunities, decision making, actions, and outcomes (Nambisan, Wright and Feldman, 2019). Further, in applying TAM and IDTGIT, there is a tendency to assume relatively stable and fixed boundaries around the afore-mentioned constructs which are not characteristic of digital entrepreneurship, and in so doing offer limited insights on their relevance to these perspectives in novel context that also include fluid boundaries in entrepreneurial processes and outcomes (Nambisan, 2017). Therefore, in this study, there is a need to consider alternative theories and conceptualisation that integrate relevant factors and perspectives that give meaning to and provide useful insights on the dynamic entrepreneurial processes and outcomes of female digital entrepreneurship (*ibid.*) which exist within a continuously evolving liminal digital spaces of transformation (Kelly and McAdam, 2022b).

While the speed and flexibility of digital entrepreneurship have been presented as a unique entrepreneurial space with significant implications for the entrepreneurial ecosystem and policy landscapes (Martinez Dy, Marlow and Martin, 2017; Pergelova *et al.*, 2019), there is an emerging stream of critical entrepreneurship research which contradicts the potential of digital entrepreneurship being described as providing democratisation, emancipation and empowerment opportunities for female entrepreneurs (Rindova, Barry and Ketchen, 2009). More specifically, in examining the interplay between digital technologies and female entrepreneurs, reference in the literature to using cyberfeminism as a theoretical lens (Martinez Dy, Marlow and Martin, 2017) has shown that the online environment provides a neutral meritocratic framework (McAdam,

Crowley and Harrison, 2020). In addition, other researchers have emphasised that women are naturally suited to using digital technologies such as the internet (Hilbert, 2011), and have argued further that women need to be technologically savvy and politically aware users of digital technologies to realise their entrepreneurial ambitions of empowerment and emancipation in a digital environment (Rindova, Barry and Ketchen, 2009; Chatterjee, Dutta Gupta and Upadhyay, 2020). Nevertheless, there are critics who posit that these perspectives largely promote an idealised theory which can be dubbed as “cyberutopia” given that they ignore contextualised environments with inherently hierarchical power and masculinised entrepreneurial environments and the integration of the online and offline business environment (Martinez Dy, Marlow and Martin, 2017; McAdam, Crowley and Harrison, 2020). Hence, in exploring female digital entrepreneurship, greater attention is needed to avoid the reinforcement of replication of hierarchies of gender (Welter, 2020).

With claims that feminist scholarship is potentially disruptive, some have argued that while feminism as a theoretical lens portends reduction and even eradication of sexist inequality and oppression (Pecis and Berglund, 2021), others have viewed these claims with suspicion and rejection (Ahl and Marlow, 2012). Additionally, with the conceptualisations of various different feminist theories such as liberal feminism, social feminism, post-colonial feminism, and intersectional feminism, there is a tendency for some researchers to essentialise gender which ultimately leads to blaming women for their subordination (Calás, Smircich and Bourne, 2009). Critiques of the subordination of female entrepreneurs have not considered their dynamic and fluid contextual environments (Imiren *et al.*, 2023) which provide scope to broaden thinking and analytical framing to inform entrepreneurial theorising. Moreover, in blending feminist perspectives with digital technologies, attention also needs to be paid to the social and cultural contexts of female entrepreneurs (Baker and Welter, 2020); particularly in light of the entrepreneurial and digital contexts. This brings into sharp focus the importance of avoiding the use or the expansion of theories in female digital entrepreneurship which can replicate disparities in the offline entrepreneurial environment (Martinez Dy, Marlow and Martin, 2017).

With the growing interest in adopting an intersectionality framework to investigate topics in female entrepreneurship, due consideration is given to integrating gender perspectives in entrepreneurial

studies in traditionally patriarchal societies (Ahl and Marlow, 2012;McAdam, Crowley and Harrison, 2020). In line with the notion that gender is not a proxy for biological sex but is a social construction (Henry, Foss and Ahl, 2016), emphasis is placed on the role of context, social relations, history and culture (Foss *et al.*, 2018). In furthering this argument West and Zimmerman (1987) have posited the notion of gender as “something one does” (Bruni, Gherardi and Poggio, 2004;Brush *et al.*, 2018). Yet, with the entrepreneurship agenda embedded in gendered normative assumptions of masculinity and gender-neutral meritocratic opportunities, there is a tendency to ignore the constructed positions of the female entrepreneurs and instead focus on their attitudes and behaviours (Ahl and Marlow, 2021). Based on this, gender theories are sometimes criticised as extremely context specific, which therefore makes generalisation difficult. This in turn, not only resonates with claims that entrepreneurship is in danger of reaching a dead end (Ahl and Marlow, 2012), but also suggests that by employing an appropriate feminist lens (Akter, Rahman and Radicic, 2019;Henry and Lewis, 2023) and adopting reflexivity offer a unique opportunity to question current theorising within the field of entrepreneurship and develop a path to escape its inevitable dead end (Calas and Smircich, 2006;Calás, Smircich and Bourne, 2009).

Notwithstanding, to pursue research which interrogates and explores the simultaneous impact of digital entrepreneurship and gender (Pergelova *et al.*, 2019) on female entrepreneurship calls for a contextual shift in notions of neutral digital environments (Martinez Dy, Marlow and Martin, 2017) as well as non-Western countries; thereby invoking more deliberate assessments of the lived experiences (McAdam, Crowley and Harrison, 2020) of women in business. Thus, several lines of debates on intersectional (Collins, 2015), gender-sensitive (Henry, Foss and Ahl, 2016), and context-based (Baker and Welter, 2020) frameworks with a more critical appraisal of context, enable a better understanding of how digital technologies influence the experiences, as well as the outputs and processes of female entrepreneurship (Martinez Dy, Marlow and Martin, 2017;McAdam, Crowley and Harrison, 2020;Nair, 2020) in developing countries. In stressing the importance of avoiding homogenised assumptions about “women”, “female entrepreneurs” (Kerner, 2017) and “digital entrepreneurs” (Kelly and McAdam, 2022b), the literature cautions about the appropriateness of applying the intersectionality framework based on such broad presupposed categorisation of the participants. Importantly, assessing the aspects of relationality that are useful for the analysis becomes problematic and questionable (Kerner, 2017) and moreso

in the localised post-colonial context of the Caribbean. Therefore, post-colonial feminist theories are of interest and relevance to this study given the focus on Global South (non-Western) female entrepreneurs, and issues related to their agency and gender (Ozkazanc-Pan, 2012;Kerner, 2017). Considering the gender issues female entrepreneurs face in the technology industry (Reyes and Neergaard, 2023) and that there is gender-skewness in digital entrepreneurship (Martinez Dy, Marlow and Martin, 2017;Angelovska, 2022), this study also draws from an appropriate technology-focused theoretical lens to gain a better understanding of the interplay between the technologies and the female entrepreneurs. As discussed in Sub-section 2.4.2, this is of high importance given that digital technologies are increasingly an integral part of entrepreneurial opportunities related to processes and outcomes (Nambisan, 2017;Roblek *et al.*, 2021).

The Technology Affordances and Constraints Theory (TACT) is considered a useful theoretical construct for exploring the role of technology in entrepreneurship (Majchrzak and Markus, 2012). The TACT is a relational theory whereby the human actors interact with the technology to determine the business outcomes, the affordances are the action potential of the technologies, whereas the constraints limit what the entrepreneurs can do with the technology (Nzembayie and Buckley, 2022). The principal thrust of TACT is to consider the dynamic interplay between the people, entities and digital technologies so as to garner a deeper and expanded understanding of the use and effect of these technologies (Majchrzak and Markus, 2012). It is important to underscore that digital artifacts and digital platforms are essential to supporting the business outcomes, while the digital infrastructure acts as an external enabler to support the business processes (Davidsson, 2015). Therefore, in this study, the technology affordance aspect of TACT refers to the action potential of the female entrepreneurs to use the technologies to achieve a given goal, while the technology constraint aspect refers to the ways in which the entrepreneur is negatively affected from achieving a given goal. Therefore, TACT does not focus on the actual features that digital technologies possess, but rather on how the female entrepreneurs' goals and capacities can be related to the inherent potential of the features (Nambisan, 2017). In this regard, TACT offers promising lens to critically examine how the use of digital technologies by female entrepreneurs affects the nature and structure of female entrepreneurship in developing countries such as those of the Caribbean.

Moreover, in alignment with the principle of differences in entrepreneurial context (Baker and Welter, 2020), this study situated in the Caribbean, offers the researcher an opportunity to draw on post-colonial feminist theories to critically assess the ways in which the historical processes of colonialism that go beyond the temporality of the past, to inform and shape the lived experiences of the female digital entrepreneurs. Along this vein, post-colonial feminist theories enable the researcher to oppose the tendency to de-historicise the global power relations and entanglements of the entrepreneurship landscape (Kerner, 2017) of the Caribbean region. Further, these theories afford the researcher an opportunity to concentrate and assess the gender aspects and the contextualization aspects of the study (Kerner, 2017). In keeping with this perspective, post-colonial feminism portends to have the potential to create new conceptual lenses and theorisations that are within and outside the discipline of female digital entrepreneurship. This point highlights that while the theoretical paths of post-colonial feminist theories and intersectionality seem complementary, for the purposes of this study, the focus is on the former given its capability to deliberately work across transcending boundaries of differences involving a range of contexts. Therefore, the orientations for the theoretical framework of this study are the enhanced and shifting strategic perspectives on the transformation of female-owned businesses in the digital era that are explicitly articulated in constructs derived from the research findings and data analysis.

2.7 Summary

Emanating from the literature review is a research agenda that is embedded in assumptions that can reinforce traditional gender biases and dominant masculine discourses if left unchallenged (Ahl and Marlow, 2012) which also underscores the importance of the focus of this study on female digital entrepreneurship in a non-Western context. The principal discourses include: (a) digital technologies provide gender neutral meritocratic opportunities to female entrepreneur; (b) entrepreneurship is gender neutral and offers emancipatory opportunities for women; (c) normative entrepreneurial characteristics are masculinised; and (d) theoretical lenses are often associated with individualistic orientations. With a focus on how the interplay between digital technologies and female entrepreneurs affects the transformation of female entrepreneurship in developing countries, this empirical study is anchored in two mutually reinforcing pillars featuring the availability of digital technologies (artifacts, platforms and infrastructure) to leverage the start-

up, adoption, innovation, and expansion of the business activities and outcomes; and female entrepreneurs operating within their businesses to generate something new that is fuelled by the promises of digital technology (Fang, Henfridsson and Jarvenpaa, 2018). Consequently, the research agenda on female digital entrepreneurship in developing countries is positioned to broaden the boundaries of entrepreneurship research in general and female digital entrepreneurship in particular.

Armed with the intent of and elaborating on the arguments and addressing the research questions, the next two chapters outline the theoretical underpinnings and the methodological framework of the study respectively. The descriptive details included in these chapters are essential to frame and situate the arguments and critically evaluate the said arguments.

CHAPTER 3: THEORETICAL UNDERPINNINGS

3.1 Introduction

Based on the preceding chapter, this study seeks to make the case for the promotion of female entrepreneurship. Moreover, the promotion of female entrepreneurship is necessary to reduce gender imbalance and biases while also advancing socio-economic development. Furthermore, the promotion of digital entrepreneurship is a critical imperative in this digital era, if businesses are to survive in the unprecedented disruptive environment. Invariably, the convergence of female entrepreneurship in the novel paradigm of rapid and uncertain technological changes makes the promotion of female digital entrepreneurship of significant importance in developed as well as developing and emerging economies.

Critical reflections on the spectrum of entrepreneurship literature in general (Rindova, Barry and Ketchen, 2009) have elicited calls to consider the potential for new theoretical insights that can emanate from reframing entrepreneurship with a broader focus which incorporates social change activity and economic activity (Calás, Smircich and Bourne, 2009), as well as contextually grounded perspectives (McKeever, Anderson and Jack, 2014). The continued effort among researchers to undertake greater reflexivity on current entrepreneurship theories, together with recurrent calls for “new and exciting theories” (Hassard, Cox and Rowlinson, 2013) suggest the need to be more analytical in the approach towards building more robust theoretical frameworks and theories (Brush and Cooper, 2012; Carlsson *et al.*, 2013), while also seeking to decolonise entrepreneurial scholarship in non-Western settings (Bothello, Nason and Schnyder, 2019).

This chapter sets out the main theoretical perspectives which undergird this research project; inclusive of the philosophical, ontological and epistemological considerations. Specifically, there is a focus on examining the different historical and modern disciplines and approaches from which entrepreneurship theories are drawn. In recognising that entrepreneurship is a gendered phenomenon (Yadav and Unni, 2016), this chapter includes discussions on grounding entrepreneurship concepts in feminist theories such as post-colonial feminist theory and on the Technology Affordances and Constraints Theory (TACT) to explain the intersection of technology

theories in relation to the study on female digital entrepreneurship. Then, the chapter provides information on the theoretical framework for the context of the study, where the relevance of adopting an interpretivist approach is underscored, and the research gaps to be addressed in the study are outlined.

3.2 Entrepreneurship Theories

3.2.1 The Prevailing Theoretical Frameworks

Given the broad diversity of development contexts (Naudé, 2014), and by drawing on the Schumpeterian model (Baumol, 1990), it can be argued that as “an independent research domain” (Lu *et al.*, 2020, p. 923), entrepreneurship is a highly complex⁵ phenomenon (Bruyat and Julien, 2001). As such, it is unsurprising that several empirical research and theoretical standpoints on the phenomenon of entrepreneurship are undertaken from a range of standpoints which include a multiplicity of fields and disciplines such as business, management, economics, management, innovation theory, accounting and finance, social anthropology, mathematical economics, and organizational theory, among others (Bruyat and Julien, 2001; Hessels and Naudé, 2019; Lu *et al.*, 2020). While it has been noted by Rideout and Gray (2013) that, in general, entrepreneurial practices and actions have outstripped entrepreneurship research, it is Brown and Hanlon (2016) who posited that this is probably due to the more literature-based nature of entrepreneurship studies as opposed to it being empirically-based (Lu *et al.*, 2020). Even in instances where empirical studies are undertaken, the research is often considered disconnected from real-world challenges and experiences (Co-founders of RRB, 2017, revised 2020). Hence, being mostly phenomena-driven, the theoretical domain of entrepreneurship studies is described not only as being diverse, but also as vague and fragmented (Lu *et al.*, 2020).

Despite the vast heterogeneity of the strands of entrepreneurship research which have emerged over time, in seeking to develop an overarching framework, researchers such as Busentiz *et al.* (2003) have suggested a framework that situates the research at the intersection of the study of

⁵ Within the science of complexity, a phenomenon is complex when there is a number of disparate ideas (paradox, circular causality, positive feedback, creative destruction, spontaneous self-organization, emergence) that are to be found outside the most established perspectives of the strategy process. (Bruyant and Julien, 2001: 176)

entrepreneurs (individuals and groups), the opportunities, and new ventures (Rindova, Barry and Ketchen, 2009). Given that such a framework reflects the tendency of entrepreneurship research agenda to be institutional or entity-focused on the firm, it is inarguable that this focus limits the scope of actions and processes that constitute the investigative and theoretical domain of entrepreneurship (Steyaert and Katz, 2004). With an understanding that traditional academic theorising seldom recognised both the conventional and arbitrary nature of ontological commitments (Chia, 1996), there is heightened awareness by the researcher to avoid being complacent in replicating logical abstractions as the “real” world of entrepreneurial experiences. For this study, this implies an approach to theorising that is open to critical reinterpretation and reconceptualisation which is situated in developing countries in the Global South. Therefore, in seeking to explore and broaden the theoretical focus of entrepreneurship to include activities and processes that can be characterised as emancipatory (Rindova, Barry and Ketchen, 2009) and empowering (Shane and Venkataraman, 2000), there is significant scope to theoretically reframe entrepreneurship theories through informed pluralism (Willmott, 2008). With these broader research lens, the attendant theoretical framework of this study intends to view entrepreneurship not only in relation to the pursuit of opportunities, but also to overcome constraints (Rindova, Barry and Ketchen, 2009) within the entrepreneurial ecosystem and entrepreneurship contexts (Baker and Welter, 2020).

Evidence from the literature has shown that a large number of theories of entrepreneurship have been developed over time (Yadav and Unni, 2016; Akter, Rahman and Radicic, 2019). Similar to the link with the different historical contexts of various disciplines and fields, entrepreneurship theories can be drawn from six diverse disciplines and viewpoints comprising economic, psychological, sociological, anthropological, opportunity-based, resource-based and modern evolutionary theories, as depicted in **Table 3.1**. In keeping with the key assumptions and the implications of these entrepreneurial theories, the information gleaned helps to better understand the entrepreneurial processes, the actors and their environments (Akter, Rahman and Radicic, 2019), as well as the germane contextual issues of the entrepreneurship ecosystem (Baker and Welter, 2020)

Table 3. 1: Summary of Entrepreneurship Theories from Six Diverse Disciplines and Viewpoints

Disciplines & Theories	Entrepreneurship Theories	Evidence from the Literature (Contributors)
Economic Entrepreneurship Theories	Classical theory, Neo-classical theory, Austrian Market Process	Cantillon, Smith, Ricardo, Jevons, Marshall, Hawley, Schumpeter
Psychological Entrepreneurship Theories	Personality Traits theory, Need for Achievement theory	Rotter, McClelland
Sociological Entrepreneurship Theories	Weber's Sociological theory, Theory of Withdrawal of Status Respect, Theory of Moral Dimension of Culture, Social Context (social network, ethnic identification, life course stage, population ecology)	Weber, Dana, Casson, Reynolds
Anthropological Entrepreneurship Theory	Transnationalism theory	Mitchell <i>et al.</i> , Baskerville, North, Shane
Opportunity-Based Entrepreneurship Theory	Opportunity-based Entrepreneurship theory	Drucker, Stevenson and Jarillo, Ardichvili <i>et al.</i>
Resource-Based Entrepreneurship Theories	Resource-based theory	Becker, Unger <i>et al.</i> , Boudieu, Coleman, Putnam
Recent Theory related to Entrepreneurship	Effectuation theory (combination of trait, resource-based, and social network theory)	Sarasvathy

Source: Adapted from Article on “Women in International Trade: Bridging the Gap by Bringing Feminist Theories into Entrepreneurship and Internationalization Theories” by Akter, Rahman, and Radicic (2019)

Moreover, a review of the various theories provides broader insights into the related issues and factors which can influence the activities of female entrepreneurs. For example, some of the key factors influencing economic entrepreneurship theories are free trade opportunities and competition and risk-taking ability, while sociological entrepreneurship theories are influenced by

social relationship and bonds, as well as support from family and society. A recognition of the need to understand the broad swathe of entrepreneurship theories from the perspective of various disciplines helps to minimize the risk of valuable insights being overlooked in exploring in depth important issues which affect the phenomenon of female entrepreneurship (Ahl and Marlow, 2021). In so doing, the backdrop of these entrepreneurship theories contributes to a review of the lens used to develop the epistemology for seminal research on female entrepreneurship. Therefore, to construct an appropriate theoretical framework that examines the effects of digitalisation on female entrepreneurship and provide insights on the research questions of this study, it is important to analyse and understand the dominant philosophical paradigm which underpins the entrepreneurial field, and to highlight the fit with female digital entrepreneurship, which is the focus of this study. Specifically, an understanding of the dynamics of the dominant paradigmatic perspectives provides greater space to promote and develop new perspectives for this research project (Cope, 2005).

3.2.2 The Dominant Paradigm in Entrepreneurship

In exploring the philosophies which underpin the field of entrepreneurship, it is important to highlight that the foundations for the attendant dominant paradigm have been laid mainly by Cantillon, Turgot, Say and Schumpeter (Bruyat and Julien, 2001), who explicitly position the concept of the “entrepreneur” or “entrepreneurship” within an economic perspective (Pittaway, 2005; Naude, 2010b) to the point of even describing it as “a positive economic activity” (Calás, Smircich and Bourne, 2009). In this regard, economic and individual-based approaches provide a useful point of departure to examine the philosophical underpinnings of entrepreneurship given the context they provide. Notwithstanding the tendency to reify a given “paradigm”⁶ in the sense given to the concept by Kuhn (1970), the four paradigms constructed by Burrell and Morgan (1979) as shown in **Figure 3.1**, are used to highlight and understand the dominant philosophies which guide research in the field of entrepreneurship (Bird, 2022).

⁶ A particularly important part of Kuhn’s thesis in *The Structure of Scientific Revolutions* focuses on exemplary instances of scientific research. These exemplars of good science are what Kuhn refers to when he uses the term ‘paradigm’ in a narrower sense. Exemplary instances of science are typically found in books and papers where the texts contain not only the key theories and laws, but also - and this is what makes them paradigms - the applications of those theories in the solution of important problems (Bird, 2022).

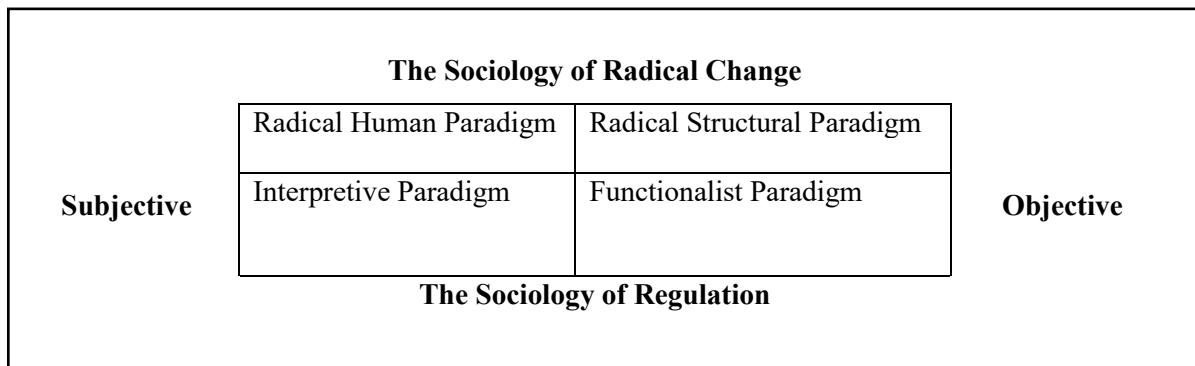


Figure 3. 1: Four Paradigms of Social Scientific Research

Source: Pittway, 2005 adapted from Burrell and Morgan (1979, p. 22)

According to Burrell and Morgan (1979), the horizontal axis (labelled as subjective-objective dimension) is grounded on the assumptions related to the nature of science (epistemology and ontology), while the vertical axis is based on assumptions related to the nature of society (labelled as regulation-radical change dimension). Though critiqued as an “over-simplification of complex philosophical discussions” (Pittaway, 2005), given concerns of permeability and transferability of the paradigms (Willmott, 1993), the pivotal influence of these paradigms on how entrepreneurship is perceived and understood cannot be underestimated. Drawing on the findings of an in-depth study done by Pittaway in 2000, it can be deduced that, despite significant theoretical and practical differences within economic theories in entrepreneurship, most of the economic approaches are anchored within the functionalist paradigm as shown in **Table 3.2**.

Table 3. 2: A Summary of Philosophical Assumptions in Economic Approaches to Entrepreneurship

Economic Approaches to Entrepreneurship	Ontological Assumptions	Epistemological Assumptions	Assumptions about Human Nature	Assumption about Society	Paradigm
Neo-classical economics	Reality as a concrete structure	To construct a positivist social science	Man as a responder	Social order	Functionalist
English classical economics	Reality as a concrete structure	To construct a positivist social science	Man as a responder	Society as an organic system	Functionalist
French classical economics	Reality as a concrete process	To construct a positivist social science	Man as a responder	Society as an organic system	Functionalist
Transaction cost economics	Reality as a concrete process	To construct a positivist social science	Man as an adapter	Society as an organic system	Functionalist
Information-based transaction cost economic	Reality as a contextual fields of information	To study systems, processes and change	Man as an information processor	Society as an organic system	Functionalist
Calculable uncertainty school	Reality as a concrete process	To construct a positivist social science	Man as a responder	Society as an organic system	Functionalist
Uncertainty school	Reality as a concrete process	To study systems, processes and change	Man as an adapter	Society as an organic system	Functionalist
Austrian and neo-Austrian economics	Reality as a concrete process	To study systems, processes and change	Man as an adapter	Society as a morphogenic system	Functionalist
Schumpeterian approaches and the Harvard historical school	Reality as a contextual fields of information	To map contexts	Man as an actor	Society undergoes transformation	Functionalist with some interpretive and radical structural elements

Source: Pittaway, 2005, p.209

Interestingly, it is assumed that entrepreneurship is an individual pursuit of opportunities for profit where the perspectives of the human nature are characterised by western male-centric approaches such as “man as adapter”, “man as responder”, “man as actor” and “man as information processor” (Guttermann, 2018). In addition, against the setting of the historical dominant connection between the entrepreneur and the “rational economic man”, there is an underlying philosophical assumption that is used to describe a complex social construct in entrepreneurship (Willmott, 1993). This is not surprising as it epitomises the desire of economic theorists to explain how entrepreneurship works and its attendant functions within economic systems. Moreover, by using the Burrell and Morgan paradigms, an analysis of different economic theories reveals that these are based on “different philosophical assumptions about social science and society” (Pittaway, 2005, p.214). Further analysis of the meta-theoretical assumptions and meta-theories in economics provides scope for greater diversity within the functional paradigm which by extension can be meaningfully applied to the field of entrepreneurship (Grant and Perron, 2002). Intuitively, this suggests that there is tolerance among researchers either for alternative approaches and views on relevant paradigms or that the dominance of functionalist enquiry provides a basis for further consolidation of additional “scientific” paradigms (Grant and Perren, 2002; Carlsson *et al.*, 2013; Guttermann, 2018; Lu *et al.*, 2020). Yet, these traditional perspectives and normative premises do not adequately encapsulate the more complex phenomenon of entrepreneurship (Bruyat and Julien, 2001) as “part of society and fundamentally a process of social change” (Calás, Smircich and Bourne, 2009, p.553). In other words, while an understanding of the dominance of functionalist and economic approaches provides historical understanding of the roots of the entrepreneurship field, the growing importance of inter-disciplinary approaches has ignited interest for a paradigm shift in the field (Willmott, 1993). By drawing on the work done by Nagapies and Ghoshal (1998), the researcher is better able to understand the value of incorporating the underlying relational, structural and cognitive dimensions of entrepreneurship which are key contextual dynamics that are not adequately captured in the dominant theoretical constructs and research approaches (Calas and Smircich, 2006; Lee and Jones, 2015).

A common thread which describes the modes of entrepreneurship theorising is based on philosophical assumptions of functionalism and has historical roots anchored in economic theory (Pittaway, 2005). Hence, the study of entrepreneurship can portray a gender-blind approach that fails to address inequalities in entrepreneurship (Akter, Rahman and Radicic,

2019). Therefore, the challenges posed by the influence of these extreme philosophical underpinnings and the legacy of the dominant economic male entrepreneur pose problems for understanding the nuanced social realities and behavioural complexities in entrepreneurship and its sub-fields. Consequently, applying interpretive approaches in research could broaden the scope for incorporating insights not only from diverse entrepreneurial theories (Grant and Perren, 2002) but also from feminist theories that could generate greater understanding of the phenomenon of female entrepreneurship (Beasley, 1999).

3.3 Linking Entrepreneurship Theories with Feminist Theories

While the “processual perspective” of entrepreneurship as a concept of social change (Haugh and Talwar, 2016) has played a pivotal role in extending entrepreneurship enquiry beyond wealth creation (Calás *et al.*, 2009), it can be argued that it is the scholarship contained in the gender and occupations literature, as well as feminist theory in research that have propelled research on female entrepreneurship (Jennings and Brush, 2013). Here, it is worthwhile to note that the intellectual roots of gender and occupations literature examine the evolving roles and experiences of men and women in the global workplace and that feminist theory and research is predicated on the more specific assumption that gender is not merely fundamental in the structuring of society, but that this process disadvantages women (Jennings and Brush, 2013).

Several scholars have argued that studies on female entrepreneurship contribute to new and more comprehensive understanding of entrepreneurship and human behavior in general (Minniti and Naudé, 2010; Marlow and McAdam, 2013; Haugh and Talwar, 2016). The rapid expansion of research and the heightened scholarly interest on female entrepreneurship have resulted in accumulated work that has stimulated, *inter alia*, reflections, critiques, and debates aimed at advancing the sub-field and broader entrepreneurship domain (Hughes *et al.*, 2012; Jennings and Brush, 2013). For instance, Caribbean scholars have made calls to challenge generalisations about Caribbean women (Barriteau, 1998) to better understand the region’s societal arrangements and problems. Moreover, the interconnectedness of class, race and gender in the region (Mohammed, 1998), underscores the relevance of feminist theory for critically analysing female entrepreneurship (Al-Dajani *et al.*, 2015).

Without attempting to summarise the key issues, for this research it is useful to draw on Foucault’s (1972), discourse on “foundational texts” in order to refer to the theoretical points

of departure of entrepreneurship which have shaped the research practices on female entrepreneurship (Ahl, 2006). Notwithstanding its aforementioned intellectual roots, the ontological and epistemological premises of female entrepreneurship are based on foundational assumptions of “business, gender, family, society, the economy, and the individual” (Ahl, 2006, p.598). These foundational assumptions have been viewed as unquestioned assumptions such as entrepreneurship as an instrument of economic growth, the entrepreneur is male gendered, the family is separate from work, businesses depend solely on the individual so that social and institutional aspects are not considered in theorisation. It is important to note that these foundational assumptions also infer that there are other factors and circumstances that are perceived as unimportant and are hence excluded (Ahl, 2006). Inarguably, these foundational assumptions represent some world views and exclude others; thereby resonating with the notion that discourses are powerful in being inclusionary and exclusionary since the language used is seldom neutral (Ahl and Marlow, 2012).

As shown in the relational framework of entrepreneurship in **Figure 3.2**, female entrepreneurship is affected by a complex “blend of micro-, meso-, and macro-level variables” (Jamali, 2009, p.236). The relation framework considers multi-level conceptualisations which are connected at the micro-individual, meso-organisational and macro-levels of analysis that facilitates situating and understanding a phenomenon in its unique macro national and historical regional contexts (Jamali, 2009). However, an adaptation of Jamali’s relational framework for entrepreneurship research is deemed appropriate as recent empirical studies have demonstrated that a robust analytical framework should not only consider the interplay of the multi-level factors at the macro-, meso- and micro-level, but should also incorporate the embeddedness of the multi-level entrepreneurial activities (Yamamura and Lassalle, 2022).

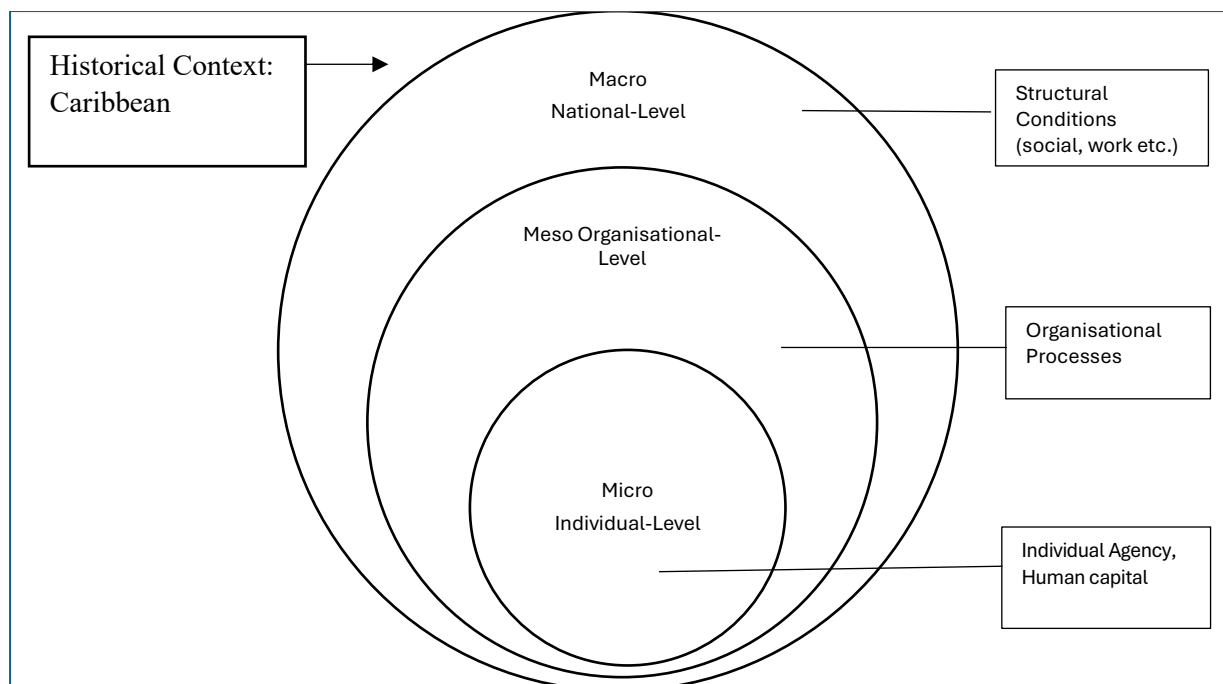


Figure 3. 2: A Relational Contextual Framework for Entrepreneurship Research

Source: Adapted from Jamali, D (2010, p.236)

Therefore, in exploring the diversities of social change as well as economic change that the interplay of female entrepreneurship and digital technologies brings about, this research aims for theoretical integration towards extending the scholarship on female entrepreneurship. In other words, this approach seeks to align with an epistemological premise of informed pluralism and critical reflexivity (Willmott, 2008) given the researcher's interest in co-creating knowledge in the research process. Moreover, in reverting to the importance of infusing a meta-theoretical perspective to entrepreneurship (Pittaway, 2005; Calás et. al, 2009), a focus on the plurality of the ontological perspective of female entrepreneurship is expected to enhance the study.

Extant entrepreneurship literatures have proposed that feminist theorising provides appropriate theoretical support for the understanding of female entrepreneurship (Calás *et al* 2009) given the traditional invisible treatment and biases towards female entrepreneurs by scholars and media (Baker, Aldrich and Nina, 1997; Ahl, 2006). Despite critiques of feminist perspectives on entrepreneurship, they offer significant potential to advance thinking in general and to inform ontological pluralism towards theoretical framing (Ahl and Marlow, 2012).

Furthermore, without such theorisation, it would be easy for research to overlook the value of the actual entrepreneurship of women. Central to feminist theories is the notion of structural, institutional and patriarchal subordination in spite of the tendency of essentialising gender in entrepreneurship discourse (Bruni, Gherardi and Poggio, 2004). Yet, there are several contradictions and vagaries related to the assumptions of gender and entrepreneurship (Marlow and McAdam, 2013). While this may seem problematic in analysing local narratives against prevailing discourses as a result of what has been described as “hyper-reflexivity” and “hyper-individualism”, feminist theories create an opening for considering the sensitivities of gender identity in different countries and regions (*ibid*). Hence, the call by scholars to make a shift in the epistemological position from how gender is done to how social orders are gendered (Yadav and Unni, 2016), supports the decision to integrate a more critical reflexive approach in shaping and grounding the research process and strategy of this study.

Moreover, considerations of the perspectives of intersectionality portends to strengthen a critical assessment of the bounded ontology which informs the current entrepreneurial research agenda (Ahl and Marlow, 2012). Hence, by adopting a more critical approach to appraise how contexts affect the various potentials of female entrepreneurship, the notion of intersectionality is considered to more adequately address “heteronormative assumptions” of gender subordination of disadvantaged groups (McAdam, Crowley and Harrison, 2020) such as female non-Western entrepreneurs. Cognisant that intersectionality has made significant theoretical contributions to women studies and has also contributed to challenging some myths on female entrepreneurship, this study seeks to respond to calls for considerations be given to the impact of intersectionality derived from the relevant dimensions of gender (Martinez Dy, Marlow and Martin, 2017; Lassalle and Shaw, 2021).

Notwithstanding, in view of the fact that the intersectionality framework represents an imposed identity on individuals by society, the researcher notes that there are some traditional aspects of the framework (such as race and ethnicity) which presuppose perpetuity, while other aspects (such as class and gender) are characterised by more fluid and contextually shifting meanings (Kerner, 2017). Given the post-colonial Caribbean context within which this study is undertaken and the importance of the contextual perspectives, post-colonial feminist lens is adopted since it is more aligned to the research focus. Moreover, post-colonial feminist lens draws attention to the relevance of gender, relational and power contexts (Piedalue and Rishi, 2017) which are appropriate aspects to be considered in a study of female digital

entrepreneurship in the Global South. It is important to highlight that the conceptualisation of intersectionality has its roots in feminism, particularly of black women (Crenshaw, 1999, Collins 2015). In essence, therefore, intersectional theory forms part of feminist theorising, which by extension resonates with the notion that together both conceptualisations are complementary (Kerner, 2017).

From the overview of entrepreneurship theories and feminist theories, there emerges a picture whereby the research agenda for female entrepreneurship, and by extension the broader entrepreneurial field, are influenced by the historical socio-economic contexts and normative epistemological assumptions that are descriptive of economic perspectives and espouse a patriarchal and hierarchical ordering (Pittaway, 2005; Marlow and McAdam, 2013; Yadav and Unni, 2016). Given the dominance of a functionalist paradigm, there is a tendency to apply “objective” assumptions about social reality and to construct a “scientific” approach to the field of study. Dubbed “a problem of meta-theory” (Pittaway, 2005), entrepreneurship enquiry has neither sufficiently nor explicitly analysed the meta-theoretical assumptions in economic study to draw from diverse paradigms (other than Burrell and Morgan) in order to expand the foundation for research on female entrepreneurship. This resonates with the claim made by Ahl and Marlow (2012) when they argue that the literature on female entrepreneurship is not so much atheoretical as it is theoretically naïve. Even within the context of digital entrepreneurship, inclusive and nuanced approaches, such as those related to women owned businesses, do not adequately acknowledge gendered assumptions nor consider how gender relations and identities are relevant in entrepreneurship theory (Bruni, Gherardi and Poggio, 2004; Ahl, 2006).

Moreover, despite significant contributions from feminist and critical scholars who have examined the ways in which gender and technology intersect including the gendered production of software expertise, the gendering of social networks, and gendered work ideals in information technology firms (Martinez Dy, Marlow and Martin, 2017), there is a dearth of studies that examine gender and digital entrepreneurship in non-Western contexts and by non-Westerners (Ozkazanc-Pan, 2012). In this regard, for developing countries in the Global South, post-colonial feminist perspectives based on non-Western approaches are important considerations to address concerns related to symbolic capital (McKeever, Anderson and Jack, 2014), inequality and identity practices constructed in postcoloniality (Kelly and McAdam, 2022b). Indeed, rather than view a post-colonial feminism approach to entrepreneurship as

dividing efforts towards a world feminist approach (Akter, Rahman and Radicic, 2019), it provides a useful platform to gain insights, as well as broaden knowledge and understanding from different cultures which influence entrepreneurial practices among women.

With the aim of contributing to the proliferation of diverse research perspectives and additional paradigmatic investigation within the field of entrepreneurship (Cope, 2005), this study emphasises critical reflexivity to explore the impact of digital technologies on female entrepreneurship in developing countries; while considering the gendered phenomenon (Jennings and Brush, 2003). Since entrepreneurship is neither exclusively linked to the business world nor to economic growth (Welter, 2019), it is relevant that this research builds explanations that provide greater diversity in social meaning from greater human action in the context of female entrepreneurs in developing countries. Moreover, it lends itself to creating greater balance in scholarship between applying and developing theory in female entrepreneurship research (Welter and Baker, 2021). Therefore, drawing on post-colonial feminist theory offers a coherent framework for conceptualising gender by paying attention to how the diverse historical, cultural, social and economic issues within the Caribbean context affect women (Welter, 2020). Moreover, by emphasising the interconnectedness between gender, race and class within the Caribbean provides an opportunity to further reveal a novel analytical framing and understanding of women's experiences in entrepreneurship, which in itself implies that perspectives on female entrepreneurs are subject to scrutiny and change (Ahl and Marlow, 2012). For this study, it is important to note that the researcher's viewpoint resonates with the notion that feminist and gender theories are not strictly mutually exclusive and when necessary, the bringing together of insights, may provide a more comprehensive perspective that any one theory can provide (Akter, Rahman and Radicic, 2019).

3.4 Intersection of Theories for Female Digital Entrepreneurship

In this Section, the study focuses on the nexus of the theoretical underpinnings of the three areas of interest: entrepreneurship, female entrepreneurship and digital entrepreneurship. While the literature has shown that research on the impact of digital technologies in entrepreneurship is still in the early stages, in exploring the concept of female digital entrepreneurship (Martinez Dy, Marlow and Martin, 2017), there is an avenue for unveiling deeper understandings of the intersecting area of "female digital entrepreneurship" through gendered lens (Jennings and Brush, 2013; Marlow and McAdam, 2013; Ughetto *et al.*,

2019;McAdam, Crowley and Harrison, 2020). In avoiding arguments of dualism and dichotomies (Lee and Jones, 2015), for this study, considerations of gender provide a polemic argument for challenging neglected and innate gendered assumptions (Adam, Howcroft and Richardson, 2004) in both female entrepreneurship and digital entrepreneurship. Moreover, debates surrounding invisible factors which constrain female entrepreneurship (Jennings and Brush, 2013) point to the importance of the concept of female digital entrepreneurship in illuminating novel or nuanced theoretical perspectives for female entrepreneurs (Suseno and Abbott, 2021). Therefore, with this approach, a deliberate effort is made to respond to recent calls to improve understanding on the egalitarian effects (such as empowerment and emancipatory effects) of digital technologies for female entrepreneurs (Haugh and Talwar, 2016;Martinez Dy, Martin and Marlow, 2018;Suseno and Abbott, 2021); particularly those in developing countries (Crittenden, Crittenden and Ajjan, 2019) .

The multiple contexts of entrepreneurship (Zahra, Wright and Abdelgawad, 2014;Baker and Welter, 2020;Welter and Baker, 2021), suggest that the nexus of the major theories related to the three areas of interests needs to be critically analysed in relation to its relevance to the research topic and the embedded social and cultural structures of the entrepreneurial ecosystem (Henry, Foss and Ahl, 2016;Sussan and Acs, 2017). In the absence of a particular theoretical paradigm (Makadok, Burton and Barney, 2018), this study places emphasis on overlapping perspectives and the potential novel theoretical approaches amidst conflicting ideas which emanate from divergent disciplines associated within a contextualised entrepreneurship (Lassalle and Shaw, 2021), as well as female entrepreneurship and digital entrepreneurship in the Caribbean environment. This is unsurprising as, generally, theoretical tensions are caused by strong tendencies of essentialism (Kirby, 1991) which seem to reinforce and reproduce traditional and well-known stereotypes related to entrepreneurship, gender, and technological determinism (Adam, Howcroft and Richardson, 2004). Hence, considerations for selecting appropriate theories are based on the characteristics of accuracy, simplicity, and generality. Moreover, instead of seeking to define a “grand theory” to explore female digital entrepreneurship in developing countries, this study is focused on defining an appropriate “theoretical space” (Makadok, Burton and Barney, 2018)that links the phenomena of entrepreneurship, female entrepreneurship, and digital entrepreneurship in the context of Caribbean.

In exploring digital technologies, some of the main theories employed for the use and adoption of digital technologies include social diffusion of technology innovation theory, the social construction of technology theory, and the technology domestication theory (Gadi, 2021). On the one hand, the social diffusion of technology innovation theory (Suseno and Abbott, 2021) is used to investigate the use or the acceptance of digital technologies which is not the focus of this study as evident in the research questions. On the other hand, the construction and domestication theories do not consider the socio-cultural environments (Nambisan, Wright and Feldman, 2019) and therefore do not provide space for obtaining information on the contexts of female entrepreneurship in the digital environment. To include the socio-cultural and gendered aspects, reference is also made to the extensively applied Technology Acceptance Model (TAM) as developed by Davis (1989) which is concentrated in psychology and behavioral studies (Adam, Howcroft and Richardson, 2004; Crittenden, Crittenden and Ajjan, 2019). Nevertheless, research has shown that individual psychology tend to “obviate considerations of social structures and obscure inequalities in power relations” (Adam, Howcroft and Richardson, 2004, p.228). Additionally, there is the individual difference theory of gender and information technology (IDTGIT) (Trauth, 2017) which is predicated on investigating individual and social factors which affect women’s employment in the IT field (Suseno and Abbott, 2021). The researcher deems IDTGIT to be an inappropriate theoretical framework for this study on female entrepreneurs since the focus is not on explaining the underrepresentation of women in the field of Information Technology (Trauth, 2017) and it is individualistic in orientation which overlooks the historical aspects and collective experiences (Hughes *et al.*, 2012).

Data trends and extant studies on entrepreneurship, female entrepreneurship and digital entrepreneurship reveal the existence of gender inequality in each field and sub-field (Ahl and Marlow, 2012; Nambisan, 2017; Pantic-Popovic, Semencenko and Vasilic, 2019). Gender disparities are still observed across and within regions, countries, sectors, social groups in terms of opportunities and constraints (Ughetto *et al.*, 2019). The intuition to assume increases in digitalisation eliminate gender gaps in employment is reinforced by not taking account of geographical unevenness in digital transformation which is manifested in gender inequalities in access to digital network and digital exclusion by gender (Gaweł and Mińska-Struzik, 2023). For instance in 2020, connection to the internet was 76% at the global level, 88% in Europe and 44% in developing countries of which only 19% in developing countries were women (Gaweł and Mińska-Struzik, 2023). Considering that digital technologies affect the conditions

of social interaction and facilitate a reimagining of what empowerment means for women and girls (Suseno and Abbott, 2021), it is not easy to clearly define the nature of the relationship between the digital transformation and female entrepreneurship (Gaweł and Mińska-Struzik, 2023). Moreover, despite efforts of the women-in-entrepreneurship approach which gives recognition to the inequalities faced by women in technical fields, they do not sufficiently challenge gendered assumptions and practices nor the tendency to institutionalise the silencing of gender issues (Calas and Smircich, 2006). Contrary to the neutral or levelling space espoused by the digital transformation, there is evidence that the online environment reflects the social inequalities in the experiences of female entrepreneurs (Martinez Dy, Marlow and Martin, 2017). Therefore, debates on problematising and bringing theoretical perspectives to gender issues in the three areas of interest have the potential of altering the research landscape (Adam, Howcroft and Richardson, 2004) and evoking a rethink of philosophical stances on entrepreneurial processes and outcomes (Pantic-Popovic, Semencenko and Vasilic, 2019). In acknowledging cyber feminist theories which challenge claims of equality and gender stereotyping in the online space (Ughetto *et al.*, 2019), this study seeks to more critically assess and explicitly investigate the research questions in the contexts of gender and the digital environment in the context of the Caribbean. Therefore, to explore the combined dimensions of gender and entrepreneurship, and gender and digital technologies, the intersectional effects of the constraining structural factors within the entrepreneurial ecosystem lend themselves to better understand the lived experiences of female digital entrepreneurs in the Caribbean region situated at the intersection (Lassalle and Shaw, 2021).

Yet, this study notes that intersectionality poses a risk of over-emphasising the structure and paying minimal focus on the agency aspects of female entrepreneurship (Lassalle and Shaw, 2020). Consequently, structuration theory as presented by Giddens (1984) and cited in Lassalle and Shaw (2020), has sometimes been deployed as a suitable alternative ontological lens for understanding female entrepreneurs in their embedded contexts. In light of the plethora of contexts of entrepreneurship, the use of structuration has implications beyond the ontology of understanding the interplay between structure and agency towards also influencing the methodological framework for the study (van Rooyen, 2013). Despite its appeal of facilitating in-depth understanding of the contextual interactions of female entrepreneurs within structures, and digital technologies in a dynamic manner (van Rooyen, 2013), structuration theory, like other theories, does not fully apply to thrust of this study. Moreover, the main focus of this study is in using feminist lens and contributing to feminist theorising. Therefore, in considering

the various theories which have implications for the different aspects of the study, the selected theoretical underpinnings of the Technology Affordances and Constraints Theory (TACT) and post-colonial feminist theory are based on their relative complementarity and relevance to integrally address the research questions.

3.5 The Theoretical Underpinnings of the Study

The intersection of the three areas of interests as depicted in **Figure 2.3** is the focus of this study which is characterised by overlapping and complementary perspectives that contribute to appropriate theoretical underpinnings for understanding the impact of digital technologies on female entrepreneurship in developing countries and emerging economies. Cognisant of the importance of consistency in the ontological, epistemological and methodological premises in research, and that entrepreneurial studies are inextricably linked to philosophies of human nature (Pittaway, 2005), the theoretical framework for this study lends itself to espousing interpretive approaches.

Given the centrality of the context-focused approach of the study in exploring the converging impact of digital technologies and female entrepreneurship, the study draws and builds on Technology Affordances and Constraints Theory (TACT) (Majchrzak and Markus, 2012). This is a relational theory that offers useful lens for shedding light on the mechanisms which influence the interplay of people and organisations and their technologies, as well as theoretical constructs for deconstructing the role of technology in entrepreneurship (Nzembayie and Buckley, 2022). The affordance aspect of the theory focuses on the action potential of the technology or the actor-independent mechanisms which the entrepreneurs translate into the business processes and outcomes (Majchrzak and Markus, 2012). The constraints are derived from the mix of prior knowledge, cognitions, and motivations which the entrepreneurs bring to obtain different possibilities and results from the technologies (*ibid.*). From the viewpoint of both affordances and constraints, the focus is on the capabilities and goals of the entrepreneurs instead of the features of digital technologies. Along this same view, this researcher argues that the TACT provides researchers with a unique opening to explain how and why the same technology can yield different outcomes in different contexts (Nambisan, 2017; Nzembayie and Buckley, 2022). To advance this argument even further, there is the promise of TACT to support a deeper examination of the relational aspects by capturing experiences of other regions

such as those in the Global South (Schmitt and Muyoya, 2020) in order to avoid western relational perspectives as the benchmarks (Gaweł and Mińska-Struzik, 2023). Moreover, from a theoretical perspective, these relational aspects also have a geographical context or spatial context that is a useful dimension in research (Schmitt and Muyoya, 2020) which can be applied to focus on female digital entrepreneurship in the context of developing countries such as those in the Caribbean in the Global South. With the growing recognition of distributed entrepreneurial agency among female digital entrepreneurs, there is also scope for TACT to offer insights on the collective actors in the entrepreneurial environment as they engage in collaboration, networking and competition (Nambisan, 2016). Hence, there is an opportunity to build on this theory by showing that these technologies are not as deterministic in entrepreneurship as have been suggested (Martinez Dy, Martin and Marlow, 2018) and that the agency of the female entrepreneurs, together with contextual organisational aspects, both enable and limit their entrepreneurial endeavours towards business transformation. TACT is embedded in the conceptual framework shown in **Figure 2.2** which outlines the interrelationships between digital technologies, entrepreneurs (as actors), mechanisms and the impact on business processes and outcomes.

Given the region's history and its present model of development that is open to global market forces, the development of entrepreneurship in the post-colonial era is considered an imperative (Minto-Coy, Lashley and Storey, 2018). On a parallel front, the dearth of seminal studies and the general concerns of misunderstandings and biases, coupled with the focus on encouraging SMEs by regional governments and regional institutions as CARICOM and CDB (Lochan, 2004), underscores the validity in capturing the diversity of female digital entrepreneurs in different places such as the Caribbean. Furthermore, as highlighted in Chapter 2, to adequately distill and understand these entrepreneurs within their unique socio-cultural and economic context, a broad and inclusive conceptualisation of entrepreneurship is employed (Welter *et al.*, 2017) for this study. In summary, this encapsulates the core elements of innovation which involves product differentiation or modification, creation of a new product or service, recognising or discovering new opportunities, and making a new product or service available in a new place (Fang, Henfridsson and Jarvenpaa, 2018). Hence, while the profit seeking aspects of entrepreneurship is deemed important, the lived realities of the Caribbean context do not render it to be a necessary feature of the entrepreneurial landscape. Therefore, with this study being situated in the Caribbean context, considerations of how potent colonial and other historical experiences influence the intertwining of culture, social structures and institutions,

such as family and work, to produce entrepreneurship (Lochan, 2004) resonate with the perspectives espoused in post-colonial feminist theory. With an emphasis on broadening the outlook on female entrepreneurship in this study, the relevance of post-colonial feminist theory is instrumental (Majchrzak and Markus, 2012) in attempting to capture a deeper understanding of the forces of context, history, gender inclusion, empowerment, resilience and sustainability in the Caribbean (Esnard-Flavius, 2010). This theoretical approach is considered necessary to capture and showcase any novel or nuanced conceptual framework (Barriteau, 1998) which connects the germane issues of female entrepreneurship to the Caribbean context of islandness, culture, historical gender ideologies and development model within a complex and dynamic digital paradigm.

An interesting feature emanating from this digital paradigm in entrepreneurship is the prevalence of issues related to resilience and sustainability (Roblek *et al.*, 2021). In this study, entrepreneurial resilience is characterised as the systematic process towards employing adaptive and innovative mechanisms, capacities and knowledge to successfully navigate business ecosystems and maintain external relationships in new and dynamic business ecosystems and situations (Acevedo-Duque *et al.*, 2021;González and Macias-Alonso, 2023). Entrepreneurial sustainability is understood as rooted in the pursuit of business ventures that integrates the economic, social and the environmental dimensions towards the use of natural assets to generate long-term wealth creation while paying attention to ensuring a positive contribution to society and minimal or no harm to the environment (Gutterman, 2018). These conceptualisations provide support for shaping a relevant theoretical framework for the research.

An important hallmark of the theoretical framework for this study is that it transcends beyond undertaking detailed studies of the barriers and opportunities of female entrepreneurs in a male dominated entrepreneurial context and digital entrepreneurship ecosystem. Therefore, the thrust of exploring the context of female digital entrepreneurship in developing countries of the Caribbean in the Global South, is both timely and of critical importance. Moreover, the study provides scope for investigating existing gender gaps in entrepreneurship by drawing on the reframed theoretical approaches of contexts (Baker and Welter, 2020;Welter, 2020), TACT (Majchrzak and Markus, 2012), and the lens of post-colonial feminist theory (Ozkazanc-Pan, 2012). Furthermore, by considering to build on these theories, the theoretical framework of this research, therefore, embodies and reflects recent calls for broadening the theoretical

perspectives to examine in-depth the influence of digital technologies on female entrepreneurship.

3.6 Research Gaps

Based on the literature, there are lacunae in empirical studies on the contextual gendered aspects of female entrepreneurship which impinge on an in-depth understanding of how digital technologies impact female entrepreneurs in developing countries of the Caribbean; thus, underscoring the significance of this study. In response to the objectives of this study, the main research gaps are captured in the following:

- (a) There is incomplete understanding of the female digital entrepreneurship phenomenon and how women address constraints in the complex and dynamic digital entrepreneurial environment (Kelly and McAdam, 2022b);
- (b) There is a general lack of seminal academic research on female entrepreneurship in developing countries, such as those in the Caribbean which is a region that is highly under-investigated (Terjesen and Amorós, 2010);
- (c) There exist limited empirical studies which explore the contexts of female entrepreneurship in developing countries and in the Caribbean region in particular (Esnard-Flavius, 2010);
- (d) There is a dearth of research on the use of gender lens to critically examine in-depth the interplay of entrepreneurship, female entrepreneurship, and digital entrepreneurship and a concomitant need to avoid adopting conventional gender assumptions (Martinez Dy, Marlow and Martin, 2017; Martinez Dy, Martin and Marlow, 2018) in an emerging digital business landscape. Filling this theoretical gap is useful to address the growing importance of digitalisation in businesses and an understanding of its attendant impact on gender equality; and
- (e) The relative limited use of innovative methodological approaches (Van Burg *et al.*, 2022) to explore female digital entrepreneurship that are based on fitness for purpose to address the particular research problem in its context of time, place, relevance, coherence, clarity, etc. as well as the social, cultural and economic environment of the female entrepreneurs (Baker and Welter, 2020) have resulted in the prevalence of axiomatic and normative approaches in entrepreneurship. Hence, there is a need to extend on the view that with contextual and novel digital technological considerations, there are aspects of digital

transformation which do not maintain traditional theoretical boundaries in the field of entrepreneurship.

Table 3.3 provides a summary of the research gaps and shows how the research questions of this study seek to address the issues. Interestingly, the information in this Table shows that, except for Research Question 1 (RQ1), the research gaps are addressed by more than one question. In this regard, the study highlights that there is a close nexus among the research issues related to female digital entrepreneurship in developing countries and that for an in-depth understanding of the main research question, these issues cannot be addressed as discrete elements of the phenomenon.

Table 3. 3: Linking the Research Gaps and Research Questions

Research gaps	Examples of literature/authors identifying research gaps	Research questions addressing the issue
Incomplete understanding of female digital entrepreneurship and in addressing constraints of female digital entrepreneurs.	Kelly and McAdam (2022)	RQ2: How do digital technologies impact the way in which female entrepreneurs start, grow and sustain their businesses? RQ3: What are the key challenges and constraints faced by female entrepreneurs and how do digital technologies contribute to alleviating these?
A lack of seminal research on female entrepreneurship in developing countries such as those in the Caribbean.	Terjesen and Amorós (2010)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs?
The context of female entrepreneurship in developing countries and the Caribbean is under-researched.	Esnard-Flavius (2010)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs?
Insufficient integration of gender lens in the interplay of entrepreneurship, female entrepreneurship and digital entrepreneurship.	Dy, Marlow and Martin (2017, 2018)	RQ2: How do digital technologies impact the way in which female entrepreneurs start, grow and sustain their businesses? RQ4: How do female entrepreneurs use digital technologies to navigate the entrepreneurial environment and context?
Limited innovative methodological approaches and theoretical frameworks to explore contextual considerations of novel entrepreneurial phenomenon of female digital entrepreneurship.	Burg et al. (2022) Welter (2020)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs? RQ4: How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?

Source: Author's own

CHAPTER 4: METHODOLOGICAL FRAMEWORK

4.1 Introduction

This chapter provides information on the methodological framework used to guide the collection and analysis of the data for the study. Section 4.2 of this chapter begins with an overview of the research context of female digital entrepreneurship in the multiple country region of the Caribbean. Then in Section 4.3, the research philosophy is briefly discussed to lay the foundation related to the assumptions and paradigms that guide the choice of research methods and strategies. The approach for this research is described in Section 4.4, as well as the overarching methodological framework which is depicted in **Figure 4.4**. The research strategy (inclusive of data collection and analysis methods) is then discussed in Section 4.5. A description of the process for analysing the data is also included in this Section. Finally, in Section 4.6, the chapter concludes with a summary of the methodological choices for the study.

This study is informed by scholarly work which indicates that qualitative studies place emphasis on making sense of the socially constructed phenomenon and the relationship between the researcher and the subjects under investigation, while quantitative studies focus on obtaining meanings from capturing and measuring the social world in numerical terms (Creswell, 2018b; Saunders, Lewis and Thornhill, 2019). Moreover, several experts have emphasised the distinction between the qualitative and quantitative research (Bryman, 2016; Creswell, 2018b; Panke, 2018; Saunders, Lewis and Thornhill, 2019), inclusive of their respective advantages and challenges. In this regard, the researcher notes that neither qualitative nor quantitative method is superior to the other. However, in consonance with the argument that preferences are generally predicated on the philosophical assumptions and positions of the authors and the researchers (McDonald *et al.*, 2015; Creswell, 2018b), this study adopts a qualitative research method. This choice is based on the need to capture the contextual richness of the study from the participants. Moreover, in considering that a key focus of this study is to shed light on the novel and nuanced aspects of female entrepreneurs operating in the digital space, the researcher surmised that this is more aligned to a qualitative study whose major strength is to capture the essence of human experiences (Cunliffe, 2011). Hence, a reliance on quantitative data for this study is considered restrictive to be able to garner important contextual gendered information for the research. It follows, therefore, that as with qualitative studies, this research is associated with an interpretivist philosophy (Saunders,

Lewis and Thornhill, 2019) given the researcher's focus on emphasising the value-laden nature of the study, as well as allowing for the emergence of nuanced findings and new concepts (Panke, 2018).

Given that recent calls for reframing the directions and extending the boundaries for female entrepreneurship (Ahl, 2006; Calás, Smircich and Bourne, 2009) have resulted in a growth in the body of research in the contexts of developing countries, the research methodology gives attention to understanding the phenomena in the predominantly non-traditional patriarchal societies of the Caribbean in the current digital era. This is in keeping with the focus of the research project which aims to explore in-depth the ways in which digital technologies transform the processes, outcomes and experiences of female entrepreneurship in developing countries of the Global South.

In noting that recent developments in entrepreneurship research have shown that entrepreneurial activities can be heterogenous by nature and in the scope of their novelty (Zahra, Wright and Abdelgawad, 2014; Van Burg *et al.*, 2022), the research methodology, therefore, seeks to respond to related concerns regarding the measurement of different experiences in different contexts (Baker and Welter, 2020). The research contexts comprise the entanglement of digital technologies and female entrepreneurship within diverse sectors, diverse demographics, a new spatial geographical context of the Caribbean region, and the embeddedness of the gendered perspectives given the region's high rate of female-headed households. According to Martinez Dy *et al.* (2017), this approach presents the opportunity for collecting novel evidence that is outside the high-technology sector as well as the Euro/US-centric boundaries of the global economy. Against the backdrop of the importance of entrepreneurial contextualisation (Baker and Welter, 2020; Welter and Baker, 2021), in seeking to explore in-depth the impact of digital technologies on female entrepreneurship, suggests that calls for the adoption of multi-level thinking and analysis (Zahra, Wright and Abdelgawad, 2014) are relevant. Within an overarching contextual approach (Baker and Welter, 2020), the main problem to be addressed in this study is how digital technologies transform the experiences, resilience, empowerment, leadership and context of female entrepreneurs in developing countries, with a particular focus on the Caribbean region. To achieve this goal, there are a range of possible methodological approaches and methods (Cunliffe, 2011) that can be employed to investigate this topic. Therefore, this chapter outlines the selected methodological approach and design for this study, and in so doing discusses the rationale for

the philosophical stance, the research approach and strategy, and the research methods that are utilised to capture an improved understanding of female digital entrepreneurship in developing countries.

4.2 Context of the Study: Caribbean

The study is placed in the context of gendered multi-layered dimensions of culture, institutions and markets that are influenced by a colonial era and a legacy that is rooted in the remnants of the plantation economy (Minto-Coy, Lashley and Storey, 2018), and relatively high levels of migration to the Global North, together with a changing digital era within Small Island Developing States (SIDS) of the Caribbean. Focused aspects of the Caribbean context include unique features of entrepreneurship (Welter and Baker, 2021), socio-cultural gender dynamics (McAdam and Cunningham, 2021), a considerable large Caribbean diaspora community (Minto-Coy, Lashley and Storey, 2018) which is sometimes considered as the region's most significant export, and the digitalisation of female entrepreneurship (Martinez Dy, Martin and Marlow, 2018) in multiple island nations.

4.2.1 Entrepreneurial Context

It was from around the 1950s that work done by the region's only Noble Laureate in Economics, Arthur Lewis, heralded some degree of attention to research on Caribbean entrepreneurship (Minto-Coy, Lashley and Storey, 2018). Notwithstanding, it was not until the 1990s that attempts were made by a few individual scholars to undertake seminal research on the unique nature and challenges of the region's business environment (Pounder, 2015). The development models of the island nations of the Caribbean are shaped by the confluence of colonial conquest, the emergence of the plantation economy, and independence starting in the 1960s towards the era of globalisation (Slocum and Shields, 2008). In particular, economic activity in the Caribbean is largely influenced by the British, French, Spanish, Dutch, and Danish colonisers who operated plantations with forced and under-compensated labour of African slaves, as well as voluntary and under-compensated Asian indentured workers (Slocum and Shields, 2008). Considering the historical role of the region as an economic and geographic periphery for these colonial powers, the region's business history can be described as the "internal history of capitalism and the taproot of imperialism" (Minto-Coy *et al.*, 2018, p.93). Therefore, it is unsurprising that the private sector in the Caribbean largely comprises small

and medium sized enterprises (SMEs) that are locally owned with weak links to the international economy (*ibid*). Indeed, an understanding of the contemporary entrepreneurial environment of the Caribbean context requires an awareness of the unique historical context which emphasises that history matters; and thereby points to the importance of embracing a more contextualised understanding of entrepreneurship that is predicated on perspectives of the relationships between the past and the present (Wadhvani *et al.*, 2020).

In keeping with its unique historical context, the region is considered a melting pot of cultures that is metamorphosed as the Caribbean versions of African, Asian, and Latin cultures which are prominent assets of the service industries (mainly tourism and financial) that dominate the economies. Notwithstanding the undermining of the selfhood and spirit of entrepreneurial initiatives and attitudes in the region caused by its historical experiences of slavery and indentureship (Nurse and Crichlow, 2011), an interesting ancestry legacy of the region is the honing of survival skills by Caribbean people which mirrors the origins of the creativity and the creation of new ventures (Esnard-Flavius, 2010; Pounder, 2015). Geographically, as shown in **Figure 4.1**, these countries are small, scattered and strategically located between the main trading routes of South/Central America and North America/Europe and their economies are integrated in trade blocs: the Caribbean Single market and Economy (CARICOM) and the Economic Union of the Organisation of the Eastern Caribbean States (OECS) (Minto-Coy, Lashley and Storey, 2018).



Figure 4. 1: Map of the Caribbean

Internet Source <https://www.worldatlas.com/webimage/countrys/carib.htm>

The underlying global image of the islands in the Caribbean is as “playgrounds” and the epitome of both paradise and tax havens, featuring tourism products, and creative and cultural industries, instead of a place where serious business is done by entrepreneurs (*ibid*). An important aspect of the entrepreneurial landscape of the Caribbean is that it largely comprises a service sector which is characterised by limited: (a) economies of scale; (b) access to international markets; (c) capacity to enhance labour with capital and technology; and (d) linkages and spillovers in other sectors (Salazar-Xirinachs and Llinas, 2023). The region’s peculiar history of slavery, plantation systems and its legacy of monocrop economies tend to evoke conceptualisation of a development model that is characterised as peripheral or a westernised “other”, given that the universal standard is geographically pegged to a North American and Eurocentric capitalist approach (Sutton, 2011). Yet, the region has some of the highest rates of total entrepreneurial activity (TEA) and female entrepreneurial activity (Terjesen and Amorós, 2010; Hart *et al.*, 2021). Undoubtedly amidst the influence of colonialism and the plantation culture, westernised stereotypes and ideologies and socio-economic structures designed to perpetuate dependency, there is a simultaneous discernible paradox in the region’s historical legacy which is found in the creative drive of Caribbean people to break out of subservience by harnessing possibilities and potentials in entrepreneurship as has been shown in their global excellence in sports, academia, arts and the natural environment (Rivera-Quinones, 2022). Therefore, the unique historical context of the Caribbean provides a framework for a more nuanced understanding of the link with entrepreneurship (Alecchi, 2020) situated in the islandness of the economies. As island nations, they are relatively isolated and have a unique need to be well connected to other areas more than just mainland areas as has been echoed by some scholars of island studies (Hall, 2012; Merouani *et al.*, 2023). Hence, the islands in the Caribbean region have a sense of community and a strong sense of social relations of space (Merouani *et al.*, 2023).

Considering the gamut of explicit attention to entrepreneurship research in general, the Caribbean can be considered an under-investigated region among developing countries (De Vita, Mari and Poggesi, 2014). In view of this empirical setting, some key distinctive attributes and characteristics of entrepreneurship in the Caribbean as cited by Hessels and Naudé (2019) include:

- (a) Small and medium enterprises (SMEs) in both the formal and informal sectors.
- (b) An entrepreneurial ecosystem with limited mature markets as previously stated.

- (c) Higher levels of risk associated with economic, regulatory and political uncertainties, and mitigation through diversification.
- (d) Challenges of obtaining financial resources, and a prevalence of family owned and operated businesses.

The region's financial landscape also has a historical relic of colonialism, whereby finance for business development is largely derived from a commercial banking system that is influenced by conservative lending practices and products, together with an institutional framework that has limited appreciation for innovation given that it is largely being informed by the local context (Minto-Coy, Lashley and Storey, 2018). Even with the recent increase of indigenous banks and modern financial services which provide greater financial flexibility (Pounder, 2015), some underlying structural assumptions remain related to the assessment of risk and creditworthiness of small businesses in the Caribbean (Minto-Coy, Lashley and Storey, 2018). Such constraints have caused female entrepreneurs in the Caribbean to mostly rely on informal financial support services such as credit unions and savings clubs (Lashley and Smith, 2015). This prevalence suggests the dynamics of inherent financial constraints towards new venture creation and employment among Caribbean people (Global Entrepreneurship Research Association, 2018). Additionally, except for Haiti, Caribbean countries are classified as middle income countries where, according to the Global Entrepreneurship Monitor (2005), the gender gap in entrepreneurial activity and business ownership tends to be smaller at the early stages but is larger at the later and more established business development level (Esnard-Flavius, 2010). Hence, the unique socio-cultural and gender dynamics of the Caribbean underscores an interesting SIDS context that can be easily overlooked from the lens of western knowledge, which can also lead to unintended new forms of socio-cultural imperialism (Banerjee, 2022).

4.2.2 Socio-cultural and Gender Dynamics

Interestingly in the Caribbean region, class, race and gender related-issues are interlocked differently in the different island nations (Mohammed, 1998). For instance, in Trinidad and Tobago there is largely a people of African and Indian descent, whereas in Jamaica and Barbados they are largely of African descent which emphasises the diversity in the configuration of ethnicities and the concomitant need for different gender arrangements. This resonates with calls from Caribbean scholars to challenge generalisations about Caribbean

women (Barriteau, 1998) to better understand the region's societal arrangements and problems. Considering gender as a social construct (Ahl and Marlow, 2012), while simultaneously highlighting the interconnectedness of class and race (Mohammed, 1998) underlines the relevance of feminist theory for analysing women entrepreneurship (Al-Dajani *et al.*, 2015). Moreover, by emphasising the interconnectedness between gender, race and class within the Caribbean offers an opportunity to further reveal a novel analytical framing and understanding of women's experiences in entrepreneurship, which in itself implies that perspectives on women entrepreneurs are subject to scrutiny and change (Ahl and Marlow, 2012). Moreover, within these diverse perspectives there is a further demand for an acknowledgement of the underlying homogenising tendencies and orientations of various development thinking which have influenced the geographic pegging of the Caribbean region (Freeman, 2014).

A decontextualization of gendered family patterns, however, does not capture the impact of the plantation system in breaking up Afro-Caribbean families and in shaping nuanced extended family structures and kin arrangements (Slocum and Shields, 2008). It is important to note that although the cliched notion of "single parenthood" has been frequently used to describe the structure of many Caribbean households, in reality this is not characteristic of the structure of the family in the Caribbean context, since children are seldom raised by a single individual but mostly by an extended family, irrespective of the mother's marital status (Barriteau, 1998). Even the pioneering research undertaken on Caribbean family by Edith Clarke (1957) and later published in the book entitled "*My Mother Who Fathered Me*" conjures widespread notions of iconic proportions of a matriarchal overdrive and male irresponsibility and such other gender assumptions (albeit from the title and not the content) (Clarke, 1957) as being characteristic of a relatively higher regional rate of single parent Caribbean families in our social development (Pounder, 2015). Further, the experience of Afro-Caribbean, more than Indo-Caribbean women, has been one in which they always worked inside and outside the home mostly due to colonial and economic imperatives (Slocum and Shields, 2008). Hence, prevailing social perspectives of Caribbean women being domestically bound in non-marital relations, and categorisations of male (public) - female (private) spheres, point to contradictions in the context of the interplay of structure and agency in Caribbean social gendered realities (Mohammed, 1998). It is therefore unsurprising that the existence of a large number of female-headed households in the islands and their active participation in the public sphere, portends that the Caribbean cultural forms of agency are not only predicated on a direct propensity to engage in adoption or resistance of colonial forms, but may be also driven by internal local realities of

the region (Freeman, 2014). For instance, among Afro-Caribbean women, the novel concept of “matrifolk” is used to describe the diverse spaces of womanhood, motherhood and relationships within which they must traverse and navigate (Slocum and Shields, 2008). In this vein, Caribbean women have been also characterised as “complex cultural agents” (*ibid.*, p.695) which by extension projects into the realm of diversity in female entrepreneurship (Aman *et al.*, 2022).

Female entrepreneurship in post-colonial societies, such as those of the Caribbean, is peculiar. The history of slavery, indentureship, and the exploitative experience of the plantation culture in the Caribbean has induced nuanced and even contradictory patterns of entrepreneurship (Minto-Coy, Lashley and Storey, 2018) that materially affect female empowerment and leadership within the region’s business environment (Lochan, 2004;Slocum and Shields, 2008). Therefore, in seeking to illuminate the opportunities for transforming female entrepreneurship in the Caribbean in a digital era, this study integrates a post-colonial feminist lens that contributes to the deconstruction of dominant Western and Euro-centric narratives. (*Refer to Section 4.4 for details of the researcher’s conceptualisation of the post-colonial feminist approach for the Caribbean.*)

4.2.3 Female Entrepreneurship and Digitalisation

Cognisant of the relevance of the female entrepreneurship phenomenon to developing countries (Jamali, 2009), obtaining insights from the context of the Caribbean, provides fresh perspectives from countries that are usually less represented in seminal studies (Roomi, Saiz-Alvarez and Coduras, 2021). Female entrepreneurs in the Caribbean make an important contribution to the social and economic development of the region (Pounder, 2015;Ramkissoon-Babwah, 2015). It is therefore not surprising that parallel to the recent global “contextual turn” occurring in the field of entrepreneurship (Henry and Lewis, 2023), is the heightened revelation of the embeddedness of female entrepreneurship in multiple contexts such as family, institutions, and society (Hughes and Jennings, 2020;Xheneti *et al.*, 2023). In addition, recent attention to micro and small scale entrepreneurship within the Global South has extended the contextualisation argument through an exploration of the empowerment of women at both the individual and community levels (Al-Dajani *et al.*, 2015;Ng, Wood and Bastian, 2022). Although approximately 99% of the global business population comprises SMEs (inclusive of

micro-enterprises), when compared to small economies globally, SMEs account for approximately 66% of businesses, whereas in the Latin America and Caribbean region, it is more than 75% (Minto-Coy, Lashley and Storey, 2018). Further, for the Caribbean countries in particular, female entrepreneurship is also situated in the unique contextual factors of “islandness” such as a reliance on seasonal economic activities and deficient infrastructure (Xheneti *et al.*, 2023). Female entrepreneurs in the Caribbean are prone to operate without employees (Lashley and Smith, 2015) and they are generally sole or majority owners of their business ventures. In view of their prominent role and the many debates centred on why they continue to lag behind male entrepreneurs (Jamali, 2009; Brush, 2010; Ahl and Marlow, 2012), there remains an urgent need to understand the prospects for transforming female entrepreneurship within the context of island economies in the new digital space and era. Specifically, an understanding of the nuances related to Caribbean Islands’ context can illuminate, otherwise hidden insights on female entrepreneurship and female digital entrepreneurship.

While available statistics in the Global Entrepreneurship Monitor (GEM) suggests that the prevalence of necessity-based entrepreneurs seems to co-exist with high levels of female enterprises, there is a need to refrain from stereotyping female entrepreneurs across the world as “necessity-driven” (Andersson *et al.*, 2007). For example, researchers such as Seguino (2003) and Kaushal *et al.*, (2024) claim that because there is a relatively higher rate of female headed households in the Caribbean, the large majority of women who engage in entrepreneurial activities are driven more by necessity than opportunity (Pounder, 2015; Ramkisson-Babwah, 2015). Such simple dichotomous categorisation neglects the influence of socio-cultural and historical experiences, as well as the importance of the entrepreneurs’ agency in recognising opportunities as their context changes over time. It is unsurprising that gender-based challenges persist in entrepreneurship and female entrepreneurship (UNCTAD, 2022). Moreover, since in-depth analytical research on female entrepreneurship in the Caribbean region is a relatively new area of interest (Terjesen and Amorós, 2010; Alecchi, 2020), this study is expected to contribute to filling this research gap. In addition, as digital transformation is providing new avenues for entrepreneurship across the globe, digital technologies portend to offer great opportunities for female entrepreneurs (Angelovska, 2022).

Yet, although digitalisation continues to open innovative and transformational opportunities for female entrepreneurs, analyses on female digital entrepreneurship remain underexplored and there is lack of a comprehensive understanding of the phenomenon (Kelly and McAdam, 2022b). The reality is that the advent of technology and the digital revolution has changed the limited prospects of the region's service sector by having the capacity to generate economies of scales based on the close physical proximity of production and consumption (Salazar-Xirinachs and Llinas, 2023). Furthermore, in the Caribbean there now exist new categories of services (such as digital services and back-office services), as well as new modes of product and service delivery and business models that are highly tradeable across borders through the use of digital technologies (*ibid.*)

Similar to other contexts, the constraints faced by female entrepreneurs in the Caribbean include the lack of access to finance, networks, relevant and timely business-related information, appropriate business support services, and access to technology and equipment (Lashley and Smith, 2015). However, the distinct social, cultural, and economic contexts of Caribbean female entrepreneurs suggest that the intensity of these constraints differ (Pounder, 2015). The overall boom in e-commerce over the past decade and the recent increased use of digital technologies since the COVID-19 pandemic (Audretsch *et al.*, 2024) have raised new hope for business transformation that is more inclusive, sustainable and resilient (Angelovska, 2022). Yet, disparities remain in digital entrepreneurship in developing countries such as those of the Caribbean. Hence, the gender gap in the use of digital technologies can impinge on the capability of female entrepreneurs to unlock their full potential in the digital economy (Reyes and Neergaard, 2023). Therefore, it is important to note that this study resonates with the growing research interest among scholars whose focus is not so much about increasing the number of female digital entrepreneurs but about enhancing the understanding on the use of these technologies in improving gender equity in entrepreneurship and in improving the contribution of female entrepreneurship towards achieving the Sustainable Development Goals (SDGs) (Ughetto *et al.*, 2019; Angelovska, 2022; Gawel and Mińska-Struzik, 2023). Hence, for this empirical study, the ubiquitous use of digital technologies in the Caribbean context not only points to their relative affordability and accessibility (Sussan and Acs, 2017), but also begs the question whether their influence on female entrepreneurship is the dawn of a new movement or a defining moment in the field of entrepreneurship.

Underlying this research interest are issues related to the resilience and sustainability of business transformation caused by the disruptive forces of digitalisation (Roblek *et al.*, 2021). To critically assess the issues surrounding entrepreneurial resilience and sustainability in this research, it is worth exploring what is the role of digital technologies on the contextualised experiences of female entrepreneurs and their entrepreneurship activities. Evidence of this assessment is elaborated in Section 5.2, and Sub-sections 6.5.1 and 6.5.4 of this study. Therefore, to obtain an in-depth understanding of what entrepreneurship means in a developing country context, such as that of the Small Island States of the Caribbean, requires an understanding of the historical context of capitalism and imperialism (Minto-Coy, Lashley and Storey, 2018), as well as the social and cultural contexts of female digital entrepreneurs (Kelly and McAdam, 2022a). Embedded in these considerations is the need for seminal studies that are ‘context-focused’ and comprehensive (Welter and Baker, 2021), that render real and sustained benefits to female entrepreneurship and digital entrepreneurship instead of merely paying lip service to the promise of their offerings (Ughetto *et al.*, 2019; Ahl and Marlow, 2021).

4.3 Research Philosophy

The research philosophy which undergirds this thesis relates to the assumptions, nature (ontology), and the knowledge (epistemology) of the study (Collis, 2014). Among the plethora of research philosophies (Deetz, 1996; Bryman, 2015), the choice for this study reflects an awareness of traditional assumptions in the field of entrepreneurship and an attempt to explore the field more broadly to determine the sustainability of these assumptions, with a view to using relevant research strategies and methods to answer the research questions and create new knowledge (Cope, 2005). Having reviewed and acknowledged the paradigm debate in research philosophy (Deetz, 1996), this study is anchored in pluralism (Van Burg *et al.*, 2022) to “provide a more fully developed understanding of the complexities” (Cunliffe, 2011, p.666) of the practices and experiences of female entrepreneurs in digital environments. In further advancing this argument, the study provides narrative accounts of the lived experiences of the participants, who are the main actors in the business entities. The approach of highlighting the “stories” of different social practices is of significant importance, not only for bringing to light narratives that are seldom discussed in entrepreneurship literature but also for contributing to a change in dominant entrepreneurial discourses (Pecis and Berglund, 2021). Further, in

employing reflexivity, the researcher considers the local stories as worthwhile “little narratives” that can create a nuanced and a counter-narrative of the grand narrative on entrepreneurship in general and female entrepreneurship in particular (Cummings and Lopez, 2023).

It is interesting to note that while there is flourishing literature on entrepreneurship (Yadav and Unni, 2016), research has shown that there is no single theory of entrepreneurship that describes female entrepreneurship (Akter, Rahman and Radicic, 2019); inclusive of the sub-category of female digital entrepreneurship. Since research renders only partial viewpoints of a complex and messy world, then the selection of theoretical choices reflects value laden “facts” that are guided by methodological pluralism (Willmott, 2008). Moreover, the researcher is cognisant that good theory is inherently masculinised and hence privileges particular ways of theorising and knowing (Cunliffe, 2022). In view of this, consideration of feminist and digital perspectives of entrepreneurship suggests the need for some degree of reframing of the boundaries of entrepreneurial processes and outcomes (Calás, Smircich and Bourne, 2009). Therefore, for this study, the researcher considers entrepreneurship theories as the lens to develop the epistemology and feminist theories as an ontology for the proposed approach to investigate female entrepreneurs participating in digital entrepreneurship (Calás, Smircich and Bourne, 2009; Ahl and Marlow, 2012; Martinez Dy, Marlow and Martin, 2017). Specifically, feminist theory in the post-colonial context offers a coherent framework for conceptualising gender by paying attention to how the diverse historical, cultural, social and economic issues within the Caribbean context affect female entrepreneurs (Welter, 2020). These theories have been discussed in detail in Chapter 3 which outlines the theoretical underpinnings for the study. Invariably, the prospects of altering the boundaries of entrepreneurship provide scope for this study to contribute to the development of new theories which prioritise the technological perspective on female entrepreneurship (Nambisan, 2017; McAdam, Crowley and Harrison, 2020). The optics of constructing theoretical foundations for digital entrepreneurship produce perspectives of digital technologies offering emancipation and democratisation among entrepreneurs (Nambisan, 2017; Pergelova et al., 2018), as well as challenge the mapping of boundaries of business ventures which are operating in a dynamic environment (Ilias *et al.*, 2021). Hence, bringing the digital dimensions into female entrepreneurship offers new theoretical perspectives to critically assess and obtain deeper empirical understanding of how these technologies interact with female entrepreneurs. From these perspectives, arguments against normative notions of objectivity support the bid to adopt more interpretive paradigms

and more qualitative approaches and strategies with guiding explicit values to enhance the contribution of research to the field of entrepreneurship (Ahl, 2006).

While several literature reviews on the broader field of entrepreneurship and on female entrepreneurship reveal that research methodologies and methods are largely dominated by positivist perspective and a normative science, it is also noted that more and more contemporary studies are trending towards challenging these axiomatic positions (Jennings and Brush, 2013; Lee and Jones, 2015). The significance of adopting an interpretive epistemology is underscored in its alignment to explore in depth the influences of digital technologies on female entrepreneurship in terms of the opportunities offered to women in developing countries' contexts to overcome challenges and transform their business operations and processes (Trauth, 2017). Hence, as this research focusses on understanding how the interplay between female entrepreneurs and digital technologies affects their entrepreneurial experiences, and what opportunities are available for these women as a result of the integration of these technologies in the entrepreneurial environment, an interpretive approach seems more appropriate to address the research questions posed in this study. Such compatibility with the intent of the study in explaining the ways in which or in theorizing why the relationship between female entrepreneurs' and digital technologies has arisen, also supports an interpretivist approach (Burrell and Morgan, 2017). As such, the researcher is better able to gain in-depth insights into the views, perceptions and interpretations provided by the participants about the prospects of digital technologies as a vehicle for creating transformative business opportunities in terms of their capacities, employment, and market options. With an interest in illuminating and in gaining an understanding of the reality of the female entrepreneurs within the complex field of entrepreneurship and a dynamic digital environment (Beliaeva *et al.*, 2020), applying an interpretivist epistemology facilitates an elaboration of the lived experiences from the point of view of these said participants (Cope, 2005). Against this background, this study is interpretive in nature to reveal and give meaning to "collective frames of references or construed realities" (Jamali, 2009, p.239) on the issues surrounding female entrepreneurship and digital technologies in the Caribbean region.

Further, despite the dichotomous research traditions associated with Europe (qualitative) and the USA (quantitative), the researcher's emphasis on understanding the contextual perspectives (Welter and Baker, 2021) supports the selection of qualitative methods for this study which focuses on the Caribbean region. Qualitative methodologies are employed given that the

dynamics relating to socio-economic and cultural phenomena and the challenges of the Caribbean entrepreneurial ecosystem (Terjesen and Amorós, 2010) are not easily quantifiable. In this study, therefore, qualitative methods provide the scope for exploring the participants' interpretation of the opportunities and challenges they face and experience (Saunders, Lewis and Thornhill, 2019) in relation to the impact of digital technologies on their business endeavours. Similar to the interpretive nature of this study lending itself to explore in depth the experiences of the participants in the field, interviews with the participants portend a viable option to drive the data collection process and accurate analyses. This is not to implicate that the analyses of large samples are inappropriate, and that the exploratory qualitative enquiry are inherently superior. Rather, the emphasis is to capture the rich explanations of the “conscious intentions” and experiences of female entrepreneurs in their “context” which are in keeping with the philosophical assumptions of interpretivist theory (Packard, 2017).

Armed with the understanding that an interpretivist approach does not necessarily preclude the viability of empirical observation and large data samples can yield strong inferences, for this study the researcher favors its use towards more ideographic methods of research⁷ and collection of nuanced information (Packard, 2017). The researcher opines that a specific choice of research philosophy is significantly impacted by practical implications (Collis, 2014). Hence, given the Caribbean context, the data collected from the field are not self-explanatory as they require further enquiry based on the historical as well as the socio-cultural customs and expectations of the phenomenon. There is evidence that suggests the effects of the digital transformation on business processes have resulted in disruptive, unpredictable and fluid changes (Pantic-Popovic, Semencenko and Vasilic, 2019). Importantly, these processes are not stepwise in nature and are more aligned with interpretivism (Packard, 2017). Further, the philosophical orientation for the study is predicated on interwoven strands of hermeneutics and phenomenology.

Though nascent, there is already empirical evidence which shows that a combination of Artificial Intelligence (AI) and Big Data give rise to new ways of doing research (Lu *et al.*, 2020). Therefore, with the recent acceleration in the advancement in the use of digital technologies to facilitate collecting and analysing different types of data sets (Welter, 2019),

⁷ Ideographic research method is an approach in social research that focuses on specific elements, individuals, events, entities and situations, documents and works...and concentrates on what is particular to these Jupp, V. (2006) *The sage dictionary of social research methods*. London: Sage.

the methodological choices are open to considerations of applying multi-methods (e.g. purposive sampling, cross sectional surveys etc.) that are rooted in positivist and functionalist paradigms. Moreover, it has been shown by Baumol (1983) that even for relatively small businesses, it is possible to use critical realism in the complex and dynamic phenomenon of entrepreneurship (Bruyat and Julien, 2001). Although not applied in this study, the parallel drawn from this paradigm is in acknowledging the debate within the broader research community concerning the simplistic and consequential application of dichotomies of qualitative versus quantitative paradigms and the concomitant importance of adopting fit-for-purpose methods and methodological approaches with the philosophical assumption (Hughes and Cohen, 2010) for the selected research approach.

4.4 Research Approach

The literature has shown that the field of entrepreneurship is plagued by a lack of diversity in research approaches which are mostly dominated by deductive approaches and quantitative methods (McDonald *et al.*, 2015). Hence, the choice of adopting qualitative research approaches (Silverman, 2021) to investigate in-depth the lived experiences of female digital entrepreneurs within the wider entrepreneurial ecosystem, presents a shift from “methodological conservation” towards research that provides significant theoretical, practical and heuristic contributions to the entrepreneurial field (Tracy, 2010). This portends methodological significance that resonates with the application of new and insightful research methods in the entrepreneurship field (Tracy, 2010) and methodological innovations that are necessary to advance future scholarship (Henry, Foss and Ahl, 2016). Intrinsically, this reinforces calls for more deliberate research approaches to apply induction in order to remove tokenism in addressing substantive entrepreneurship issues (Rindova, Barry and Ketchen, 2009) such as the focus of this study which examines the effects of digital technologies on female entrepreneurship.

It is interesting to note that, apart from US exceptionalism, within the field of feminism there is a general resistance to quantitative methodological tools as these are seen as a “smokescreen for promoting male perspectives” (Hughes and Cohen, 2010, p.189). Moreover, the orthodoxy of using qualitative methods has been critiqued by some researchers who argue that there is no one best method to employ in feminist studies, since good quantitative analysis is not simply

about gathering numbers but intrinsically anchored in the theoretical understanding of gender (Hughes and Cohen, 2010). Therefore, by drawing on contemporary social concerns in analysing complexity and contexts in an era of interdisciplinary approaches and emerging digital technology developments, suggest the need to shift the focus of selection from simplistic dichotomies of qualitative and quantitative approaches towards the appropriateness or fitness for purpose of a methodological framework in terms of “timeliness, accuracy, relevance, clarity, accessibility, and coherence” (Hughes and Cohen, 2010, p193) in addressing the research questions of the study.

In employing qualitative research approaches and induction for this study, the researcher seeks to capture a fuller understanding of the impact of the integration of female entrepreneurship and digital entrepreneurship in the Caribbean region in the naturalistic setting (Gehman *et al.*, 2018). Again, this underscores the importance of spotlighting and embedding consideration of “the contexts” in the approach to investigate the phenomenon (Baker and Welter, 2020). Now, since it is not common practice for researchers of qualitative studies to remain as external observers but to generally engage from within the study (Morgan and Smircich, 1980), care is taken in this study to avoid “theoretical arrogance” (Gioia, 2021, p.22) in framing the research design. This is of particular relevance since the experiences of people are socially constructed by their interactions with others and such interactions are replete with meanings ascribed to the social world they live in (Gioia, 2021). By applying feminist theory in post-colonial contexts, the study draws on non-Western feminist philosophies to interrogate and seeks to advance the knowledge and understanding of the topic and the field of gender and entrepreneurship respectively.

While the discourse and limited research on digital entrepreneurship done so far highlight its significant radical and disruptive potential (McAdam, Crowley and Harrison, 2020), these seem to be imbued with an implicit rhetoric of meritocracy which is predicated on the belief that actors in the virtual space operate in a neutral online environment (Martinez Dy, Marlow and Martin, 2017). Hence, the researcher considers perspectives derived from cyber-feminist research (Ughetto *et al.*, 2019; McAdam, Crowley and Harrison, 2020) to support the broader theoretical lens for the study. Further, by adopting an inter-disciplinary perspective (Ilias *et al.*, 2021), together with “informed pluralism” and critical reflexivity (Willmott, 2008, p.83), the researcher defines a methodological framework that includes qualitative research methods, as well as approaches, tools and techniques, that captures context, nuances, richness and

diversity of information (Tracy, 2010) and supports advancing the understanding of the complex entrepreneurship phenomenon in general, and female digital entrepreneurship in particular (Henrik, 2007). With this inter-disciplinary perspective, there is an important need to not simply consider the broad perspectives of intersectionality in the theoretical framework (Martinez Dy, Marlow and Martin, 2017) so that gender can be adequately captured in the critical assessment (Ughetto *et al.*, 2019; Lassalle and Shaw, 2021) of the impact of digital technologies in the entrepreneurial contexts of women in the Caribbean region. Although the insights gleaned from Section 3.3 of this study have shown the complementarity between intersectionality and feminist theorising (Kerner, 2017) where the former is rooted in the latter, the preference of the researcher is to focus on post-colonial feminist theories given the relevance and importance of a post-colonial framing to the unique historical and socio-cultural Caribbean context, within which gender framing acquires a particular turn (inclusive of sensitivities to issues of power and inequality).

Framing Post-Colonial Feminism in the Caribbean Context

In line with the notion that feminism itself is not monolithic (Foss *et al.*, 2018) and the broader understanding that entrepreneurship is a gendered phenomenon (Ahl and Marlow, 2012), post-colonial feminism provides a critical lens to shape the analysis of female entrepreneurs in formerly colonised countries such as Caribbean island states. The theoretical utility and applicability of a post-colonial feminist approach allow the research agenda for Caribbean female entrepreneurship to be shaped by the combined perspectives of its colonial history, gender, race, class and culture (Freeman and Murdock, 2001; Esnard-Flavius, 2010) that is simultaneously operating within the context of islandness (Merouani *et al.*, 2023). With these key features, the relevance of adopting a post-colonial approach to Caribbean female entrepreneurship emphasises that the interlocking systems of power, that is shaped by gender, race, class and institutional structures (Esnard-Flavius, 2010) play an important role in understanding the entrepreneurial environment within which the female entrepreneurs operate. Another feature of the post-colonial feminist approach that is important to highlight is how the legacies of the plantation economies, racial hierarchies and dependency models continue to influence the experiences of female entrepreneurs in the Caribbean (Minto-Coy, Lashley and Storey, 2018). Hence, it is through the lens of the Caribbean's historical political economy that female entrepreneurship showcases Afro-Caribbean women as working in the fields side by side with men during slavery and being heads of households while also dominating the regional

higgler trade⁸, and the Indo-Asian-Euro Caribbean women characterised as wives and mothers during indentureship (Freeman and Murdock, 2001). Emphasis is placed on the lived experiences of Caribbean women using their agency to construct their entrepreneurial identities through their resilience and empowerment which challenge to dominant narratives. Moreover, the approach challenges conceptual gatekeepers of so-called “universal” Western-Euro centric entrepreneurship models which stereotype female entrepreneurs in the Global South as passive, lacking and oppressed (Slocum and Shields, 2008), while also ignoring and de-emphasizing the critical importance of these small-scale businesses (formal as well as informal), and other community traditions that are linked to their collective strategies to preserving culture, heritage and kinship (Sutton, 2011;Pounder, 2015).

Therefore, for the Caribbean context, post-colonial feminism provides a trajectory that allows for more in-depth investigation into the influence of historical colonial experiences and power structures, as well as local realities (inclusive of the digital environment) that affect opportunities and challenges of female entrepreneurs. Moreover, this approach acknowledges the need to avoid the unwitting importation of enduring “colonialist” Western theories not only through the deconstruction of dominant entrepreneurial narratives (Ahl and Marlow, 2012) and the questioning of traditional masculinisation of the entrepreneurship (Ahl and Marlow, 2021), but also in responding to calls for developing local or indigenous feminist theories anchored in the Caribbean contextual gendered reality (Mohammed, 1998;Freeman and Murdock, 2001).

Anchoring the Qualitative Research Approach

Further, it is important to highlight that although qualitative approaches are sensitive to the linkages between the theoretical underpinnings and the methods, the orientations of the principles and tools selected are customised (Gehman *et al.*, 2018) to support meaningful coherence for this study (Tracy, 2010). In this way, the choice of qualitative method is intended to reflect the interconnectedness with the research design, research strategy, data collection and analysis, as well as fit with the research objectives and theoretical framework for this research topic (Gehman *et al.*, 2018). Central to this thrust is the aim of expanding the research space for enhanced multivocality and reflexivity that would allow for more in-depth and better

⁸Higgler trade in the Caribbean is an informal, mostly female-led, small-scale trading system with deep historical roots, originating from slave provision markets and remains vital to the regional economy Freeman, C. (2000) *High tech and high heels in the global economy: women, work, and pink-collar identities in the Caribbean*. Durham: Duke University Press.

understanding of the complex topic of female entrepreneurship, instead of seeking to promote a more valid singular truth on the issue (Tracy, 2010).

The study consists of a qualitative interpretative research methodology that also adopts the contextual dimensions (Henry and Lewis, 2023) and gender-sensitive/aware perspectives (Brush *et al.*, 2018) that are intentional in providing opportunities to channel the voices of female entrepreneurs in spaces and to audience where they can share their lived experiences and be heard (Jennings and Brush, 2013). Intrinsically, therefore, the research design is aligned with calls for more context gendered research and feminist sensitive research in the field of entrepreneurship (Kelly and McAdam, 2022a; Henry and Lewis, 2023). Although Weick (2007) argues that for research such as this which examines the lived experiences of female digital entrepreneurs, a qualitative interpretivist approach is axiomatic, the conceptualisation of the research design and methodological approach for this study is also acutely guided by the researcher's reflexivity (Tracy, 2010; Jafari *et al.*, 2013; Creswell, 2018a). Armed with the knowledge of a socially constructed world, the research design for the study does not reinforce the traditional individualist focus in entrepreneurship research, but instead embraces the socio-cultural, institutional and other contextual aspects that affect conditions for female entrepreneurship without comparison to an inherent masculine template (Dy *et al.*, 2017). Moreover, given the practical training and experience of the researcher in undertaking development work in the Caribbean, the design is interpretive in nature as it seeks to reveal and give meaning to the unique experiences and nuances (Jamali, 2009, p.239) on issues which surround female entrepreneurship and digital technologies. Also, the constellation of concerns related to the social and structural mechanisms of entrepreneurship (Martinez Dy, Martin and Marlow, 2018) recognises the value of intersectionality of gender within the contexts of female entrepreneurship and digital entrepreneurship (McAdam, Crowley and Harrison, 2018) and supports a critical assessment of their qualitative impact. This perspective resonates with claims that neither digital entrepreneurs nor female entrepreneurs is a homogenous group, and the intent of this study is to focus on the particular experiences of female entrepreneurs negotiating intersecting discourses on gender, entrepreneurship and context in digital spaces (Kelly and McAdam, 2022b).

Since the dynamics of the entrepreneurial ecosystem in the Caribbean region is characterised by a relatively high level of informality, challenges of limited financial opportunities, weak regulatory environments, and other institutional and structural constraints (Alecchi, 2020), then

quantification of such data is not easy. Yet, these are critically important to finding robust and reliable answers to the research questions (Gehman *et al.*, 2018) which are best collected and analyzed using qualitative research methods (Campbell, 2014). Moreso, since statistical techniques are used to derive correlation between variables (Panke, 2018), and precise and objective measurements of data (Campbell, 2014), an attempt to investigate these environmental and contextual issues by using quantitative methods will not accurately capture the causal mechanisms between female entrepreneurship and digital technologies. Instead, the use of a qualitative research approach provides an understanding of the complex and multifaceted environmental conditions and social norms of the entrepreneurship ecosystem (Bruyat and Julien, 2001) and allows for more comprehensive assessment of the contextualised experiences (McAdam, Crowley and Harrison, 2018) of female digital entrepreneurs in the Caribbean region. So, within the natural setting, context is integrated in the data set rather than considered as a control variable (Martinez Dy, Martin and Marlow, 2018). The importance of qualitative research in providing substantial theoretical contributions has been explored by researchers such as Gioia *et al.* (2013). For instance, there is the known recognition of using qualitative research to focus on relatively unexplored phenomena, theory elaboration through variations in contextual perspectives, and theory development through the uncovering and interpretation of causal mechanisms (Van Burg *et al.*, 2022). Moreover, by using a qualitative approach, the researcher is better able to understand the experiences of female entrepreneurs as they participate in and shape the digital spaces they operate within, as well as navigate their new sense of self as digital entrepreneurs within the institutional structures (Kelly and McAdam, 2022a).

4.5 Research Strategy: Sample, Data Collection and Analysis Methods

4.5.1 Sample Characteristics and Selection

With a keen research interest in contributing to theory building (Eisenhardt, 1989; Gehman *et al.*, 2018), the context of the Caribbean provides an opportunity given that it is highly underexplored in management research (Aguinis *et al.*, 2020). This is deemed appropriate given the limited knowledge on the phenomena of the study, as well as the focus on the “how” and “why” questions being investigated (Yin, 2014) in relation to the Caribbean region. Therefore, in addition to the main research question, the following subordinate research questions of this research emphasise this in examining: How do contexts influence the

entrepreneurial activities of female entrepreneurs? How do digital technologies affect the way in which female entrepreneurs start, grow and sustain their businesses? How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?

Given that the central tenet of the research approach is to generate an in-depth, multi-faceted understanding of the complex phenomenon of female digital entrepreneurship in its real-life context, the different contextual dimensions within the Caribbean are being investigated. The study is also guided by the work of scholars who signpost toward the intrinsic context of the experiences and perspectives (Creswell, 2018a) of female digital entrepreneurs in the Caribbean region as a unique phenomenon in an integrated whole. Furthermore, cognisant of the complexities of business operations and the embeddedness of social perspectives within entities (Yin, 2014), the contextual approach complements the thrust toward an in-depth exploration of female entrepreneurial processes in digital spaces (Kelly and McAdam, 2022a). This approach follows an interpretivist stance, aligns with the subjective ontology of the study (Ketokivi and Choi, 2014), and allows for developing an understanding of appropriately contextualised experiences of female digital entrepreneurs in the Caribbean region. Hence, by adopting an inductive approach and reflexivity, the researcher seeks to make observations, to search for patterns from the observations and then to generate theory (Collis, 2014).

Given that scholars have emphasised the importance of adopting a clear process towards developing robust and reliable findings and realising robust theory building (Cunliffe, 2011; Creswell, 2018b; Makadok, Burton and Barney, 2018), three national contexts are selected, namely - Trinidad and Tobago, Barbados and Jamaica - each representing a sovereign country in the Caribbean region. (*Refer to **Figure 4.1** to view the countries selected in the Map of the Caribbean*). This selection is based on the principles of adequacy, saturation, and knowledge of the research topic (Guest, Bunce and Johnson, 2006) while also ensuring the achievement of the goals of robust and reliable findings and robust theory building (Gehman *et al.*, 2018). Therefore, the theoretical sampling strategy considers those Caribbean countries that have the most advanced and structured entrepreneurial ecosystems, the highest rates of entrepreneurial activity, and experience political stability (Terjesen and Amorós, 2010; Minto-Coy, Lashley and Storey, 2018). Based on this, women who own and manage businesses and use digital technologies in their operations or provide technological services and products in Trinidad and Tobago, Barbados, and Jamaica were selected for the research. Overall, the

inductive and exploratory nature of the research also provide a strong argument for the selection of small samples of the participants, rather than large datasets, to examine in-depth the dynamics (Panke, 2018) of the socio-cultural context in the Caribbean that can help develop theoretical frameworks for developing countries. The decision to employ a multiple country context over a single country context is anchored in the notion that the latter is more suitable for longitudinal studies (Creswell, 2018a) which runs counter to the 3-year duration for undertaking this study. Moreover, multiple country contexts tend to provide insights that are “more robust, trustworthy, convincing and comparable” (Hilbert, 2011).

The researcher paid particular attention in applying purposive sampling to directly target participants who are female digital entrepreneurs operating in the Caribbean region and who meet the following criteria:

- (a) The participant must hold and possess decision making positions and powers respectively within the business entity.
- (b) The participant must already own and manage a business venture which had started integrating and utilising digital technologies in the functioning of the business prior to the data collection phase of the study.
- (c) The participant manages a business entity which can be classified within one of the categories of light, moderate or extreme digital entrepreneurship.
- (d) The participant should have at least 2 years’ experience in planning and operating a business during her career.

Some additional characteristics of the selected sample of female digital entrepreneurs who own or managed businesses correspond to: (a) the size of the firm (1-19 employees for Caribbean SMEs as established by the World Bank, (b) stage of operations (start-up, early and established phases), and (c) represent diverse sectors (agro-processing, education, light manufacturing, events management, food and nutrition, health and fitness, retail and wholesale trade). These women are characterised as digital entrepreneurs by virtue of the fact that they use digital technologies (artifacts, platforms and infrastructures) as inputs to carry out their operations or pursue new business opportunities, as well as create services and products that are digitalised and technological in nature (Giones and Brem, 2017; Nambisan, 2017). In line with the three categories of digital entrepreneurs (Nambisan, 2017), the female digital entrepreneurs who participated in the study are characterised as light, moderate and extreme which is depicted in **Figure 4.2**.

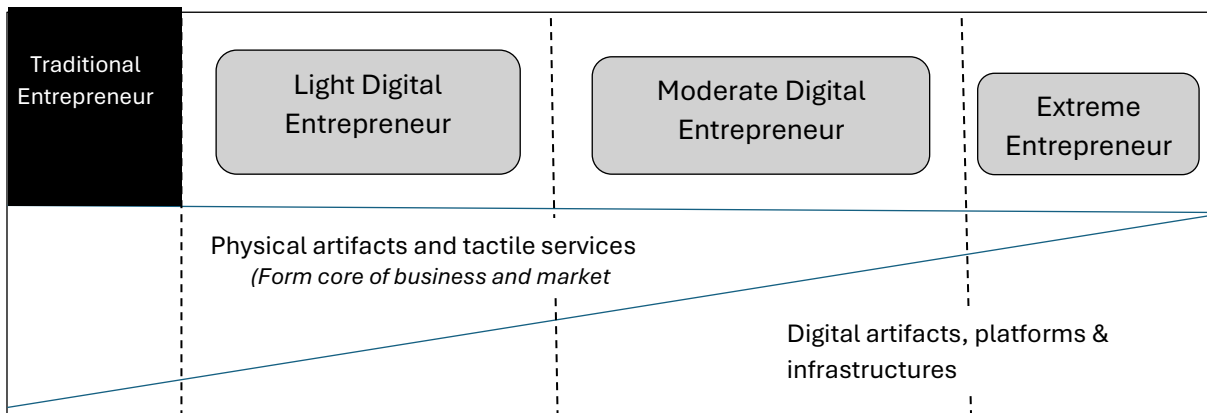


Figure 4. 2: Categories of Digital Entrepreneurs

Source: Adapted from Nzembayie & Buckley, 2023

In **Figure 4.2**, the researcher emphasises that the digital entrepreneur combines the use of digital technologies and non-digital resources in the business processes and outputs. However, the level of differentiation among the categories depends on the extent to which the digitalisation and physicality is core or peripheral to the business venture. For instance, for the extreme digital entrepreneur, the business is largely dependent on and driven by digital technologies; whereas for the light digital entrepreneur, the core business processes use limited digital technologies (1-2) and are largely dependent on physical artifacts. It is in keeping with the description of the different categories of digital entrepreneurs (Nambisan, 2017) that the researcher applies reflexivity to determine the categorization of the 30 selected participants in **Table 4.2**. Hence, from the selected sample, 11, 8 and 11 of the participants are classified as light, moderate and extreme female digital entrepreneurs respectively as shown in **Table 4.1**.

Table 4. 1: Distribution of the Types of Female Digital Entrepreneurs Interviewed

Type of Digital Entrepreneur	Quantity (#)	Percentage (%)
Light	11	37
Moderate	8	26
Extreme	11	37

In addition to fulfilling the criteria for selecting the sample for the study, the researcher determined that 30 participants were sufficient to provide depth, breadth, and saliency of the sample data for reporting and authentic analysis (Guest, Bunce and Johnson, 2006; Hagaman and Wutich, 2017). Notwithstanding the arguments put forward for adopting the common gold standard of saturation for justifying the sample size (Marshall and Rossman, 2016; Creswell, 2018a) and the lack of consensus among scholars on what is appropriate, the researcher drew on additional research strategies and rationale for selecting 30 participants for the study. Cognisant that the fieldwork was to be done online, the researcher relied on national affinity, knowledge and understanding of the socio-economic and cultural context of the Caribbean to focus on sectors such as agriculture, tourism, health and wellness, and retailing. Thus, the heterogeneity of the sectors contributed to an avoidance of chance association and differences in the types of business ventures managed by the female entrepreneurs; thereby reducing research bias and ensuring variability. **Table 4.2** provides an overview of the female digital entrepreneurs interviewed in the study.

In identifying the participants from diverse sectors, the focus was on female entrepreneurs between the age of 21 – 65 years old who owned or managed businesses with the use of digital technologies. The lower age of 21 years is selected since there is the likelihood of attaining a higher level of maturity to start a business entity, as well as a lower chance of early exit, having achieved the age to complete tertiary level education level and gained some experience in the labour market. Also at age 65 years, it is the time when the majority of business owners are ready to exit the labour market which is in keeping with the average retirement age.

The significant heterogeneity among these female digital entrepreneurs (McAdam, Crowley and Harrison, 2020) was further reflected in diverse demographic backgrounds (education and qualifications, age, marital status, years of operation, location, and employment status in the business), which was complemented by the participant's fluency in English language. It is noteworthy that all the participants were non-white (afro-descendants), were highly educated (at least undergraduate degrees or professional certificates) and belonged to the lower middle class of society. Such heterogeneity is reflective of the Caribbean's reality which can lead to theorisation and contribution to the body of knowledge in the entrepreneurship field (Pounder, 2015). The samples of the participants were selected in a non-probabilistic, purposive, and snowballing manner (Yin, 2014) based on consultations with officials from the public sector, private sector, and academia, as well as practitioners to propose names of female digital entrepreneurs in the respective countries who satisfied the selection criteria of multi-country studies. Drawing on the combined numerical guidance of experts such as Marshall (2016) and Creswell (2018), the researcher sought to ensure that the selected participants were representative of different sectors and socio-cultural context. Overall, on the basis of snowball sampling technique, 40 participants were identified to be included in the study. Therefore, the purposive nature of the sampling technique is considered apposite given the focus on theoretical development instead of generalisation of findings (Creswell, 2018a). Given that the validity of quality research is predicated on information-richness rather than sample size (Bryman, 2016), a sample size of 30 female digital entrepreneurs was deemed appropriate for the study.

Table 4. 2: Overview of Research Participants

Pseudonym	Age	Marital Status Children	Country	Education and Qualifications	Ownership & Employment Status	Business Sector	Type of Digital Entrepreneur	No. of Employees	Established: Year & Duration
FE#1: Rhiza	35	Married 1 child (baby)	Trinidad & Tobago	MSc. Business Management	Sole-Owner Full-time	Beauty & Cosmetics: Wholesale, Retail, Online	Light	2	2014 (9 years)
FE#2: Lovely	33	Single No children	Trinidad & Tobago	BSc Engineering	Co-Owner (1 shareholder)	Nutrition & Fitness Exercise, Yoga, Hikes, Diet, Book club, Camps	Light	4 (1 male)	2016 (7 years)
FE#3: Diana	40	Divorced “Single” Parent 2 children	Trinidad & Tobago	MSc. Economics and Management, MBA, Certified Financial Planner, Post Graduate Diploma in Education	Co-Owner (6 shareholders)	Food & Beverage, Manufacturing	Light	1	2014 (9 years)
FE#4: Kimberlee	44	Married 2 children	Trinidad & Tobago	Associate degree Project Management, MBA, BSc. Computer Info. Systems and Computer Engineering Technology	Sole-Owner	Education, Online Tutoring	Extreme	7 (1 male)	2020 (2 years)
FE#5: Rudelle	35	Single No children	Trinidad & Tobago	BSc Engineering	Sole-Owner Part-time	Beekeeping	Moderate	3 (2 males)	2018 (4 years)
FE#6: Arlene	32	Single No children	Trinidad & Tobago	MSc. Tourism	Sole-Owner Full-Time	IT and Tourism e-booking/e-commerce platform	Extreme	1	2016 (7 years)
FE#7: Linda	40	Married No children	Trinidad & Tobago	BA Business, MBA, Junior Scrum Master	Sole owner Part-time worker	Agri-processing Light manufacturing	Light	1	2020 (2 years)
FE#8: Raquel	39	Married No children	Trinidad & Tobago	BSc. International Relations	Co-Owner (husband)	Agriculture, Food, Online delivery of products	Moderate	16 (9 males)	2019 (15 years)
FE#9: Nisha	35	Single No children	Trinidad & Tobago	BA Process Engineering, MA Environmental Engineering	Sole owner	Agro-processing, Beekeeping, Honey	Light	1	2015 (8 years)
FE#10: Monica	40	Divorced 2 children Pregnant	Trinidad & Tobago	Certificates: Project Management, Hospitality, Marketing, Events Management BA - Law	Sole owner	Food & Nutrition	Light	5	2020 (3 years)
FE#11: Janet	44	Partner No children	Trinidad & Tobago	Diploma Culinary Arts, BA Human Resource Management, MBA Marketing	Sole owner Full-time	Food & Beverage, Agro-processing Granola, Sauces	Moderate	5	2019 (4 years)
FE#12: Lynn	40	Single No children	Trinidad & Tobago	BSc Business Management	Co-owner Part-time	Agro-processing, Wines, Blended Oils	Light	4 (2 males)	2016 (7 years)
FE#13: Susan	42	Married 2 children	Trinidad & Tobago	BSc. Process & Chemical Engineering	Sole owner Full-time	Education: Online classes and tutoring	Extreme	3 Full Time 12 Part Time	2015 (8 years)
FE#14: Astra	45	Married 2 children	Trinidad & Tobago	Certificate – Wedding Planning and Design	Sole owner Full-time	Tourism & Events	Moderate	6 (3 males)	2010 (13 years)

Pseudonym	Age	Marital Status Children	Country	Education and Qualifications	Ownership & Employment Status	Business Sector	Type of Digital Entrepreneur	No. of Employees	Established: Year & Duration
FE#15: Katie	36	Single No Children	Barbados	BA Law and LLBC	Sole-Owner Part-time	Food & Beverage; Cookies and Cakes Online Teaching	Moderate	2	2014 (9 years)
FE#16: Nicola	60	Married 2 children	Barbados + Caribbean	BSc. Economic & Development	Co-owner Part-time	Education; IT Skills training	Extreme	1	2018 (5 years)
FE#17: Henrietta	44	Married Care-giver for 2 nieces	Jamaica	BSc – Management & Sociology	Sole-Owner Full-Time	Media & Communication; Podcast; Writer Public Speaker	Extreme	1	2014 (9 years)
FE#18: Kandia	39	Single No children	Jamaica	Foundation Degree in Law, BA Law	Sole Owner Full Time -Then Part time - Now	Digital Training; Digital Programmes Digital Marketing	Extreme	1	2018
*FE#19: Nancy	54	Divorced 4 children	Caribbean	Certificate- Business Coach, Project Management	Sole-Owner Full-time	Media & Communication; Storyteller Tutor/lecturer	Extreme	1 (+ children assist)	2016 (7 years)
*FE#20: Anna	40	Married No children	Caribbean	MSc. IT Master of Business Administration	Founder and Co- owner Full-time	Tech Hub; ICT services; Training; Consulting in storytelling, animation, and game development	Extreme	1	2016 (7 years)
*FE#21: Nathalia	54	Married 2 Children	Caribbean	PhD. Marketing Lecturer in Entrepreneurship	Stakeholder Full time	Education and Training, Mentoring	Light	NA	
FE#22: Donna	37	Single No Children	Barbados	BA Tourism Management Certified Yoga Tutor	Sole Owner Full-time	Fitness, Wellness	Light	1	2016 (7 years)
FE#23: Jenny	51	Divorced No children	Barbados	BA Communication MSc Media Management	Sole Owner Full-Time	Counselling, Wellness	Extreme	2 (1 Male)	2021 (2 years)
FE#24: Sabby	33	Single No children (pregnant)	Barbados	BSc. Business and Marketing, Certificate in Aesthetics	Sole Owner Full-Time	Beauty and Cosmetics	Light	10 (5 Males)	2019 (4 years)
FE#25: Brandy	58	Widow 2 children	Barbados + Caribbean	PhD Christian Leadership	Co-Founder Full-Time	Education and Training: Business Leadership	Moderate	3	2013 (10 years)
FE#26: Sumitra	45	Single No Children	Jamaica + Caribbean	BSc Information technology	Part-Owner Full-Time	Data Management, Technology Consultant	Extreme	2	2010 (13 years)
FE#27: Eunice	35	Single No Children	Jamaica	BSc Biology & Chemistry; Post Doc. Research in Airborne Diseases	Sole Owner & Founder Full-Time	Healthcare	Extreme	6 (5 Males)	2019 (4 years)
FE#28: Kasha	58	Divorced 1 Child	Jamaica	BSc Economics & Accounts; MBA; (commenced PhD.)	Sole Owner & Founder Full-Time	Business Support Services	Moderate	2	2016 (7 years)
FE#29: Cherise	45- 50	Divorced 4 Children	Jamaica	BSc Medical Laboratory Technology	Sole Owner & Founder Full-Time	Health and Wellness	Moderate	2	2016 (7 years)
FE#30: Patricia	55- 60	Divorced 2 Children	Barbados	Secondary School Graduate; Certificates in Cosmetology, Secretarial and Office Management	Sole Owner & Founder Full-Time	Event Planning & Floral Decoration	Light	2-4 (Seasonal)	2007 (16 years)

Pseudonym	Age	Marital Status Children	Country	Education and Qualifications	Ownership & Employment Status	Business Sector	Type of Digital Entrepreneur	No. of Employees	Established: Year & Duration
*Notes	• FE = Female Entrepreneur • For the entities with one employee, this represents the owner • Employees where sex is not specified = females • Extreme Digital Entrepreneur: business is fully driven by digital technology • Moderate Digital Entrepreneur: business uses a combination of digital technologies with 1 or more non-digital resources • Light Digital Entrepreneur: business uses a combination of 1-2 digital technologies with core non-digital operation								

Source: Author's own

4.5.2 Data Collection

Cognisant of the dimensions of contextual sensitivity (Henry and Lewis, 2023), this study is based on multiple data sources (Gerring, 2004), and features the inclusion of three research instruments – an analysis of secondary data, semi-structured interview data and narrative inquiry - to facilitate triangulation (Eisenhardt & Graebner, 2007). This is aimed at adding to the richness and depth of the analysis (Panke, 2018), while simultaneously minimising risks related to selection bias which can affect the validity and reliability of the research findings (Gerring, 2004). Prior to the fieldwork, analysis of secondary data allowed for appraisal of recent descriptive data (such as GEM 2020/2021) on entrepreneurship and female entrepreneurial activity in Caribbean countries. This facilitated an initial refinement of the focus of the study from the start of the investigation. Information on the use of digital technologies among female entrepreneurs were also collected from other documents such as academic papers, and official data produced by international organisations (such as World Bank, ILO, UN-Women) since these are done according to international standards. Data from the Information, Communication and Technology (ICT) industry in the Caribbean region were also consulted to observe any general trends. Although these data sources are suitable for general information purposes (Voss, Tsikriktsis and Frohlich, 2002), they do not provide deep insights on the issues which are needed to examine in-depth the impact of digital technologies on the female entrepreneurs. Moreover, the scarcity of scholarly work and empirical studies on the phenomenon in the Caribbean region (Aguinis *et al.*, 2020), and the limited public records due to the high level of informality, emphasise the need for this investigation to utilise additional reliable qualitative data sources.

Although these were not included in the final sample size of 30, it is important to note that during the initial stages of the fieldwork, the researcher benefitted from consulting with officials who are actively involved in the entrepreneurial environment in terms of policy formulation, business development, and academic education and training in entrepreneurship. Their perceptions about the policy framework for entrepreneurship and female entrepreneurship, the challenges faced, the situation of digital technologies, and the key motivational factors for entrepreneurs were important for the researcher to gain clarity on the region's entrepreneurial landscape and the opportunities for business transformation that were created by digital technologies. Within this group, discussions held with staff of the University

of the West Indies⁹ (UWI) - the oldest and most highly respected and ranked in tertiary education in the region - were an important source given its role in entrepreneurial learning and its capacity for nurturing a broad knowledge of the regional entrepreneurial ecosystem. The researcher was privileged not only to receive useful background information on the regional entrepreneurial landscape but also profited immensely from this engagement since some staff members had prior entrepreneurial experiences as practitioners which aided conducting immersive discussions with the research participants in their environment. As deemed relevant, the main questions raised with this initial group of persons were framed along the lines of: (a) What are your views on female entrepreneurship in the Caribbean region? (b) Tell me about any specific programmes and policies for supporting female digital entrepreneurs. (c) How do government or academic programmes provide opportunities for training of women as entrepreneurs? (d) What is the plan of the government for developing and supporting female entrepreneurship? (e) Are there any issues relating to gender equality in entrepreneurship or regarding the use of digital technologies among female entrepreneurs?

Another matter that was of critical importance in engaging with this group was in obtaining their feedback on the Interview Discussion Guide included in **Appendix I (d)** to determine if the focus was clear and if there was a need for further refinement, as well as to obtain suggested names of potential research participants from the local business databases who may be aligned to the study. Of notable interest is that these referrals were mainly of well-established business entities which did not materialise into conducting actual interviews as the female entrepreneurs were either unavailable or were not keen to participate in the study. Coming on the heels of the COVID-19 pandemic, this reaction is also not surprising given the global drive towards “building back better”, including the business environment. Hence, after 3 – 4 weeks of emailing and making telephone calls to secure an appointment with the referred potential participants, the researcher agreed to and succeeded in undertaking interviews with those participants who were less prominent but nonetheless functioned as digital entrepreneurs. Anchored in the advice of the initial group and the researcher’s own knowledge of the region’s entrepreneurial environment, the fieldwork began with participants from Trinidad and Tobago and through the snowball technique, the other participants were selected from Jamaica and Barbados in a non-sequential manner. Among the participants, there is a small group

⁹ The UWI is a regional university in the Caribbean with its main campuses located in Trinidad and Tobago, Barbados and Jamaica and with other satellite open campuses across other islands.

comprising 3 participants classified as Caribbean since they operate businesses across the 3 selected countries (Trinidad & Tobago, Barbados and Jamaica) and within the wider shores of the region. Hence, these 3 participants are considered eligible to be involved in the research project and are justified in light of the scope for further enrichment of the data set.

The purposive selection of the sample for the study was predicated on the referrals meeting the established criteria and characteristics of the female digital entrepreneur as previously described in Sub-section 4.4.1. The researcher contacted each referral via email or WhatsApp (voice call or message) to make an introduction of self and the research project as well as to make an initial inquiry of their interest in participating as an interviewee. Once there was a confirmed expression of interest by the participant, the researcher sent via email the following documents: (a) Participant Information Sheet (PIS) and Consent Form (ethical requirement), (b) Privacy Notice (ethical requirement), (c) Research Brief (as background information), and (d) Discussion Guide (to assist with participants' preparations). Copies of these background interview documents are included in **Appendix I**. These documents were accompanied by a formal cover note in which participants were advised of the estimated duration of the discussion and asked to confirm the time and date they are available for the interview as shown in **Appendix II**.

Generally, the time taken from receipt of formal documents by the participants and undertaking the actual interview ranged between 7 – 14 days. In a few instances (approximately 7), the duration was longer (approximately 15 – 25 days) due to domestic commitments and personal constraints such as a death in the family, vacation with the children, differences in time zones, and the day-to-day exigencies of operating the business. In keeping with the snowball technique, the process was repeated up to 30 participants when it was considered adequate in light of the achieved representation and variability among the participants (Saunders, Lewis and Thornhill, 2019). In light of the foregoing, the fieldwork required a longer than anticipated investment of time that was required to build rapport, to send two to three reminders before (1 day before, on the day and at least within 1 hour) each interview session and to reschedule appointments in the event of any unanticipated changes occurring. Overall, the data collection process was straightforward with both the researcher and the participants exhibiting mutual respect, by engaging in fluid and open communication towards maintaining or amending agreed interview timetables, and by the researcher confirming to each participant prior to the actual interview that their information was confidential and would be kept secure.

Employing semi-structured interviews with the research participants provided the advantage of obtaining novel information from primary data sources that are not readily accessible from document sources and facilitated the capturing of patterns and nuances from real-life stories (Bryman, 2015) of how digital technologies are experienced by female entrepreneurs in the Caribbean and the attendant impact on their businesses. Moreover, the semi-structured interview method gave the researcher some degree of flexibility to explore the opinions and perspectives of the participants in greater depth and detail and to explore sensitive issues related to existing gender biases they experience in their entrepreneurial environment which is important to the study. With the freedom to ask flexible questions during the interview sessions, the researcher was able to encourage the participants to reveal their experiences by expressing their feelings and beliefs. Nevertheless, in keeping with the ethical standards of the study, the researcher tried to obtain as much detail as possible without making the participants uncomfortable and unwilling to provide information. In some instances, this was observed when a few participants provided relatively short responses on sensitive issues but, as the interview progressed, due to having a greater sense of trust and personal interest in the project, they would obsequiously revert to the issue and provide a response which included inputs to address the particular issues. Gathering a wealth of relevant information, involving different experiences from among the participants operating in the same country, is considered useful to contribute to the study. In particular, this assisted the researcher to better understand the participants' views and experiences regarding the relationship between female entrepreneurs of the Caribbean and digital technologies. Therefore, the researcher selected this research method due to the deliberate intent of ensuring that female digital entrepreneurs interviewed are able to express their ideas and thoughts in their own voice and in their own way (Bryman, 2016). Hence, the opportunity to explore female entrepreneurship within a digital technological context provided significant scope to critically assess stereotypical normativity which is embedded in masculinity and structural inequalities (Martinez Dy, Marlow and Martin, 2017).

As have noted previously, the imperative for obtaining a nuanced understanding of female digital entrepreneurship is critical because it contributes to revealing taken for granted and dominant norms related to samples and methods (Zahra, Wright and Abdelgawad, 2014). Since the research approach does not simply assume anything is a "given", some significance is also placed on the narratives of the participants, which in turn resonate with the interpretative nature of the study. In its broadest sense, a narrative is defined as anything told by an individual or groups of individuals or an organization (Verduyn and Essers, 2013). A narrative inquiry is a

means of collecting data on people's experiences that aligns with prioritizing a participant-centered approach to research (Gioia, 2021). Using this complementary method, the narrative inquiry facilitated the capturing and analysing the individual stories of the female digital entrepreneurs to arrive at themes that contributed to describing and further understanding the phenomenon under investigation (Kelly and McAdam, 2022a). Moreover, a methodological synthesis between the semi-structured interviews and the narratives enabled the production and examination of more text that will inform an interpretive assessment of the data.

By adopting a systematic approach, while also integrating flexibility so that the process is not too mechanistic (Eisenhardt, 1989), the semi-structured interviews and the narrative inquiry were guided by an interview schema comprising broad issues emanating from the documents - such as general question (Tell me about your business, why did you establish it?), participants use of digital technologies (Describe your experience in using digital technologies in your business), challenges (online and offline) impacting entrepreneurial processes and outcomes, and the impact of socio-cultural and structural processes on entrepreneurial intentions and experiences. The interview instrument for the study is included as **Appendix III**. This approach improved the scope to challenge conventions on female entrepreneurship in developing countries.

Data collection occurred over an 11-month period where, on average, interviews with each participant lasted between 45 and 120 minutes. On completion of each interview, the researcher sent a note of thanks to each participant, via email and a shorter informal note via WhatsApp, for supporting the research by sharing their lived experiences as empirical data for the study. These interviews were conducted by the researcher online via Zoom and included the 30 female digital entrepreneurs who operated in a range of sectors as shown in **Table 4.2**. The type of businesses owned and operated by the participants as shown in **Table 4.3**, feature a blend of product and service offerings (6), service offerings only (15), and product offerings only (9), which contradicts the notion that women owned businesses are mostly from the services sector (Angelovska, 2022). This further suggests that an in-depth understanding of entrepreneurial processes, experiences and outcomes of female digital entrepreneurs should also consider their contextualised attributes and capacities within dynamic settings (Tim and Leidner, 2023).

Table 4. 3: Distribution of Business Type Operated by the Participants

Business Type	Quantity (#)	Distribution by Category		
		Light	Medium	Extreme
Service Offerings	15	3	3	9
Product Offerings	9	5	3	1
Mix of Service & Product	6	3	2	1
	30	11	8	11

The online modality of Zoom represents the preference of the participants for more flexible engagements using digital technologies (in terms of their business schedules), and their own ease of and comfort in using digital tools for these types of engagements. Moreover, the researcher's decision to conduct the interviews via Zoom rather than face to face was two-fold: (a) to protect participants safety during the pandemic; albeit it was during the later stage of the pandemic when anxieties and apprehensions remained rife, and (b) the option was less intrusive and most feasible for female owners and managers of small and medium enterprises (SMEs) who also face the challenges of domestic and family commitments in a semi-post pandemic era of digitalisation. Even if conducted in person, the researcher's decision for using the online modality is further justified by the fact that the perceptions and feelings about the experiences which occurred prior to the study cannot be directly observed, as they preclude the presence of the researcher (Patton, 2002). In the circumstances, the researcher capitalised on the opportunity to ask the participants questions about these occurrences and their experiences. Further, the use of the Zoom platform provided the researcher with audio and video recordings and a copy of the voice notes for each interview undertaken. The overarching focus was to ensure the quality of the data in relation to the research objectives was adequate for exploratory analysis, instead of being constrained by instances where co-presence was neither preferred by the participants nor easy to sustain by both parties during the data-collection period.

Notwithstanding, it is important to highlight that this online modality via Zoom provided advantages and disadvantages for both the data collection and data analysis processes. For instance, on the one hand Zoom made it easier to arrange mutually convenient interview times with the participants who were working from home or were accessible regardless of physical location. On the other hand, it was somewhat challenging to build rapport with the interview

participants. Based on this, the researcher always used the video feature of Zoom and asked participants to do the same to be better able to see and understand any non-verbal cues that are characteristic of face to face interaction and ultimately to build trust (Janghorban, Roudsari and Taghipour, 2014). All the interview sessions were recorded using the Zoom feature with the consent of the participants and then transcribed by the researcher using Microsoft Word. The audio recorded interviews were transcribed and supplemented by notes to evoke a form of retrospective sensemaking (Gehman *et al.*, 2018). The researcher utilised the Zoom recordings (audio, video and voice notes), the transcriptions and the notes as important elements of the physical research audit trail to support the trustworthiness of the data collected (Carcary, 2009).

It is useful to emphasise that despite the fact the interviews were conducted using an interview guide, the sessions were mainly reflexive and conversational which is characteristic of an explorative approach that facilitated the participants to share openly on their lived experiences in the digital business environment. During the interviews, the researcher became more aware of the inextricable entanglements between the domestic and family issues and the operations of female-owned businesses when the women shared about their entrepreneurial context. Evidence of the complex social issues confirmed the researcher's decision to employ a qualitative approach and interpretivist position, and their importance in capturing the contextual depth of the data (Carcary, 2009). This approach facilitated active co-creation of information for the study (McAdam, Crowley and Harrison, 2020) and avoided criticisms of "ventriloquisation of conversations" (Martinez Dy, Marlow and Martin, 2017, p.293). On replaying the audio and video recordings, the researcher was also encouraged to have a more questioning and reflective attitude regarding the narrative. This also led to the preparation of more in-depth notes which formed the basis for discussions with the supervisors of the study on whether the inferences are grounded in the data. Cognisant that the primary data collected reflects the subjective realities expressed by the participants, the existence and use of the recordings by the researcher formed an integral part of the data validation strategy. With a qualitative approach, this is considered a particularly useful strategy to improve research transparency in the data collection process and accuracy in the interpretation. Additionally, in a few instances, follow up interviews were undertaken to corroborate and validate the accuracy of the interpretation of the data (Creswell, 2018a) .

As outlined in the foregoing, the research strategy applied Leitch *et al.* 's (2010) protocols to ensure validity and reliability of findings at the data collection phase by providing a traceable

chain of evidence of the methodological veracity of the research design (Pratt, 2009) and focusing on eliciting responses to the broad issues of the study (McAdam, Crowley and Harrison, 2020). Moreover, by obtaining the requisite approval from the Ethics Committee of Strathclyde Business School, the qualitative research approach and methods ensured integration of the principles and standards of the University's Ethical Policy and Guidelines. *Refer to Appendix 1 (d) for a copy of the approved Ethics Application Form.* Therefore, in collecting the data and undertaking the study in general, the key ethical issues focused on the principles of transparency, confidentiality, sensitivity, and accountability with a view to protecting the rights, dignity, and well-being of all research participants.

4.5.3 Data Analysis

The analysis of the data proceeded in two broad stages. The first stage included the preparation of the data for analysis, and the second stage included the implementation of the data analysis tools.

4.5.3.1 Preparation for Data Analysis

The preparatory stage for data analysis included recording, transcription, and validation of the data. In this study, the researcher had originally intended to use a voice recorder and a mobile telephone as back-up to undertake the interviews. However, with the pervasive use of Zoom during and in the aftermath of the COVID-19 pandemic, together with the participants' preferences for online interviews, the researcher only utilised the Zoom platform which provided audio and video recording, as well as voice notes of the interviews. The voice notes formed the basis for preparing the transcription and the audio/video recordings were replayed to revise and finalise the transcription of the interviews as accurately as possible. On average, the transcription of an interview lasted over two-three 24-hour days which included making corrections for spelling and grammatical errors, and accurate interpretation of the data. This was done on a continuous basis after the interview was completed throughout the duration of the fieldwork.

For this study, the recordings and voice notes automatically generated by the Zoom recording feature were downloaded, saved with anonymised file names and stored on the Strathclyde Business School's Share Point One Drive to ensure safety and protection of data. This proved

to be an important preparatory step for easy retrieval and analysis of the data. Further, it is critical to underscore the value placed on revising and validating the voice notes given the importance of ensuring that the automated text did not change the meaning of what was said by the participant. Once all the transcripts were completed, over a 3-week period, the researcher undertook a final review of all the word documents by replaying the audio and video recordings of each interviewee to ensure accuracy and the correct labelling of the files for anonymity and back-up purposes. Overall, the transcription of the data collected was time-consuming as it required dedicated time to focus on documenting the discussion as accurately as possible.

In addition to the transcription of the interviews done with the participants, the researcher's notes were useful for reflection on the data. In this regard, the preparatory process provided an opportunity to update and augment the researcher's notes towards interpretation of the primary narratives.

4.5.3.2 Implementation of Data Analysis

The decision to use researcher's notes to complement the interview transcripts was made at the start of the fieldwork to support the reflexive approach integrated into the research process (Nadin and Cassell, 2006). In applying reflexivity, the researcher was able to think critically and to write about the interview experience, as well as the practical contextual issues surrounding the research topic (Braun and Clarke, 2021). In the process, this included the researcher making notes based on the experiences shared and the sentiments expressed by the participants during the interviews with regards to the key takeaways from the narratives and on any dominant or contradictory themes that were emerging from the data. An example of the use of the notes is illustrated in the following comment written by the researcher after a participant shared her story on the challenges faced in operating a business with one additional employee while she is the head of a household of 4 children.

Today is a humbling encounter as the stories shared by [name of the participant] provide much scope for benefitting the study. Narratives about gender biases and inequality in society are so rife and embedded that [name of participant] exclaimed, "God must have a special place in heaven for women as a reward for all the hardships they continuously face." Indeed, the experiences shared by the female digital entrepreneurs highlighted

that valuable insights can be gained from considering and integrating the broader socio-cultural context of each participant. (Excerpt from Researcher's Notes)

The data analysis procedure was undertaken in a non-linear and iterative manner, characterised by familiarisation (through transcription and re-reading of transcripts), immersion, analysing, compiling, disassembling and reassembling of the data collected by the researcher (Yin, 2014), while also searching for meaning and patterns from the transcript (Braun and Clarke, 2021). In the first stage of the data analysis, the researcher adopted a technique based on matrix analysis as derived from the work of Miles and Huberman (1994). This allowed for the presentation of the data in a grid formation with rows and columns (Nadin and Cassell, 2004). Although the use of this technique can sometimes be seen as an oversimplification of data analysis, for this study it was useful for summarising and presenting data in a descriptive way (Nadin and Cassell, 2004). Essentially, the researcher used the matrix analysis to be able to manage the large volume of data by obtaining a broad overview in an exploratory way. In keeping with the technique, the visibility of the data displayed in rows and columns provided the researcher with the advantage of more easily accessing and extracting meaning from the large amount of data collected at various points in the data collection process. In so doing, in this first phase, the matrix analysis afforded the researcher flexibility to compare data across different participants. From the individually transcribed interview narrative of the participants, the researcher used a short phrase or a block of text to descriptively capture the essence of the respective experience (Nadin and Cassell, 2004). A “Master Matrix” was developed with information on all the participants so that each topic identified in the transcripts of each narrative, is stated in a row, and is linked to a related text or phrase from the participants. The participant who is associated with the respective topic is included in a column. It is important to highlight that the construction of the Master Matrix provided general descriptive information that laid the foundation for the identification of broad concepts and themes in the form of open coding. These broad themes are grounded in the participants’ language derived from their narratives. Hence, summarising data for each participant in such a Master Matrix enabled preliminary systematic analysis by themes and a broad understanding of the phenomena within themes and across wider contexts from which further analysis and interpretation were made. An excerpt from the Master Matrix is shown in the screen shot included in **Appendix IV**.

In recognition of the radical divergent conceptualisation of “themes”, for this study, a theme is conceptualised as a “central organising concept” with emphasis on a uniting idea (Braun and

Clarke, 2021, p.593). This approach is in keeping with the caution of Denny Gioia (2013) to researchers in the use of data structure in the work he pioneered, as a “formulaic presentational technique” (Gehman *et al.*, 2018, p.293). This technique is largely predicated on replication logic that focuses on the systematic assessment of the constructs and relationships across all participants (Gehman *et al.*, 2018). Hence, there are limits for the theory building aspect of this research, as it will necessitate a systematic grounding of each theme or construct to each participant (Gehman *et al.*, 2018), which also has the potential to stymie creativity in the data analysis process. Moreover, while clarity and transparency in the research process is generally derived from the data structure (Gioia, 2013), a key focus of this research is the unearthing of novel and interesting findings that may not necessarily emanate from looking at similarities and differences among emerging themes (Gehman *et al.*, 2018; Jarzabkowski, Langley and Nigam, 2021).

Although matrix analysis facilitated the development of themes, it was limited in highlighting the contrasts and any uniqueness among the participants, given the proclivity of creating common themes with this analytical tool (Nadin and Cassell, 2004). Hence, the researcher considered the strength of the technique in being able to dovetail into the development of codes derived from emerging insights and patterns. Therefore, in addition to establishing an audit trail of the data anchored in the participants’ narratives, the matrix analysis technique contributed to an adherence to Braun and Clarke’s steps to thematic analysis (Braun and Clarke, 2021). In keeping with the reflexive approach, the researcher reviewed and refined the initial descriptive categories or themes based on those which were redundant, were duplicative, needed to be amended for greater clarity, and new to separate distinctive issues. Importantly, the data analysis process was instrumental in enhancing qualitative rigour to the exploratory research design and the inductive research approach (Gioia, 2021). This code development stage involved the identification of dyadic relationships which can be combined into single codes, comparing broad themes across individual participants and developing a list of initial generic codes (Gioia, 2021) as outlined in **Appendix V**.

The researcher employed NVivo, which is a qualitative data analysis software tool, to support the analytical process. The use of NVivo facilitated the development and linking of data concepts/themes and enabled iterative cross tabulation of the main concepts and issues across all participants (O’neill, Booth and Lamb, 2018). Further, by applying reflexive approaches to the amplitude of in-depth data collected from using these qualitative data tools, the use of

NVivo facilitated the management and analyses of the “critical mess” of the details (Gartner, 2010) within the limited research period. Notwithstanding, the researcher took into account the need to ensure that the use of this software tool did not pose challenges of stifling nuanced interpretations and deny the unearthing of contextual meanings (Ash, Kitchin and Leszczynski, 2018) in the study.

Through a “recursive, process-oriented and analytical procedure” (Locke, 1996, p.240), internal validity of the findings at the data analysis phase included the development of provisional categories from the data, identification of axial codes, and the development of aggregate dimensions (Gioia, 2021). Notably, this aligns with cross-case and within-case analyses of qualitative data for better theory building (Eisenhardt, 1989)¹⁰. Moreover, for the data analysis process, enfolding literature (contrasting and similar) was also utilised to strengthen the theoretical scope and the validity by linking the results of the findings to the emergent theory (Eisenhardt, 1989).

Of particular importance is that the researcher used the “words”, “phrases” and narratives of the participants to anchor the first order codes themes and categories (Campbell, 2014) which provides a layer of validation for the qualitative research method. Based on the iterative process involved and the interpretivist stance of the researcher, the second order codes developed were as follows: (a) information for efficacy, critical thinking and decision making; (b) affordances, resourcefulness, capacity building; (c) diversification and representation; (d) entrepreneurial spirit and passion, (e) making a difference, (f) emic and etic leadership practices; (g) agency and management style; (h) gender equality perspectives; (i) business performance and boundaries; (j) temporal context; (k) market and industry context; and (l) spatial and social context. **Figure 4.3** depicts the data analysis process and structure leading to the emerging aggregate themes of entrepreneurial resilience, entrepreneurial leadership, entrepreneurial empowerment, and entrepreneurial context.

¹⁰ It is important to indicate that although the Eisenhardt’s approach is derived from an objective ontology, this study is anchored in this approach in keeping with the goal of theory building.

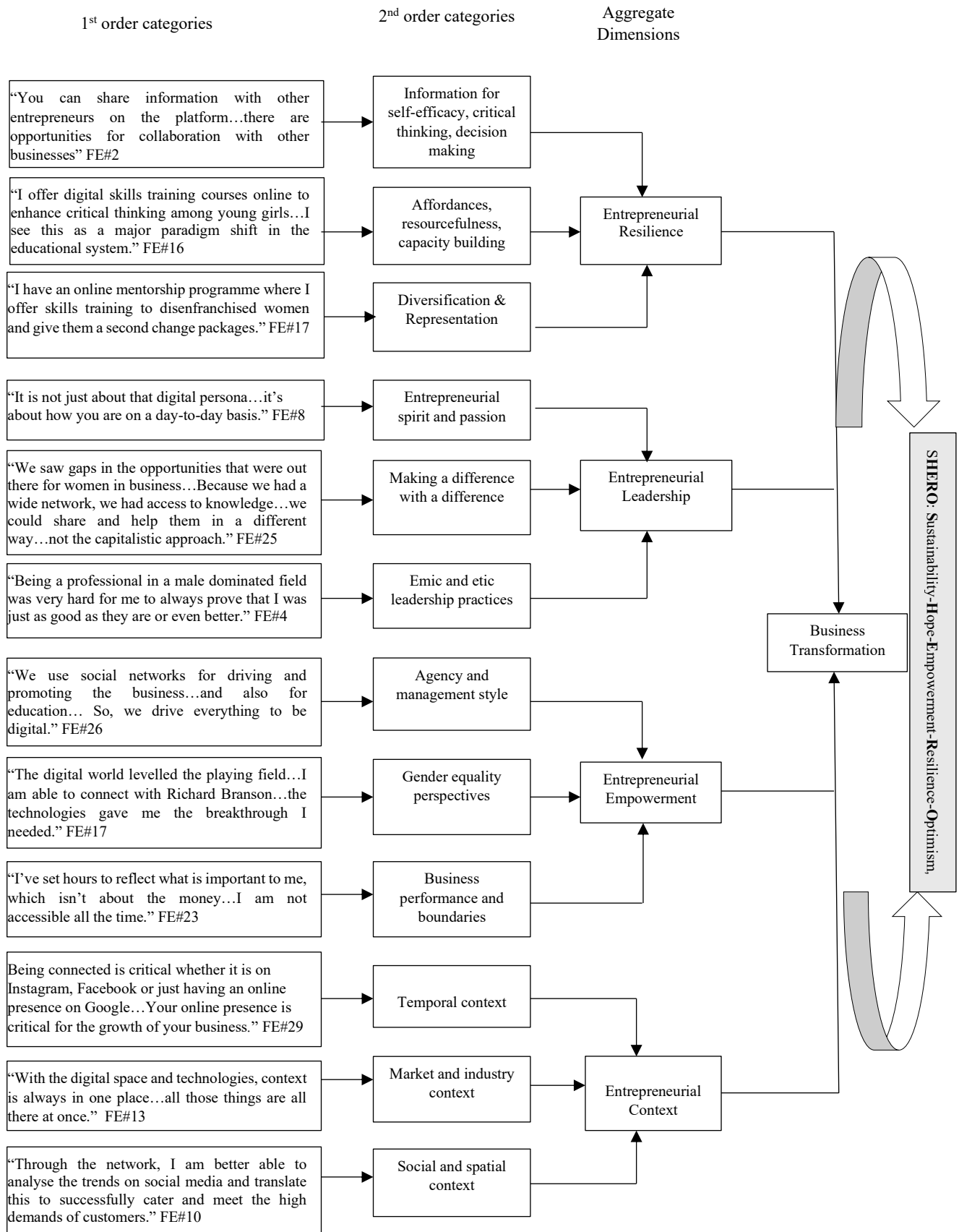


Figure 4. 3: Structure of Data on Female Digital Entrepreneurs

Source: Author's own

Considering the graphical representation depicted in **Figure 4.4**, it is important to reiterate that this is not to infer that the analysis followed a linear process. Instead, the researcher utilised reflexivity to gain insights into novel themes that have not been adequately covered in the literature, or novel insights on exiting themes that stand out due to their relevance to the phenomena (Braun and Clarke, 2019; Gioia, 2021). Further, there is a need to highlight that the categorisation of the concepts was informed by the literature, in conjunction with other works done by scholars such as Martinez Dy *et al.* (2018), Crittenden *et al.* (2019), and McAdam *et al.* (2020, 2022) on female digital entrepreneurship and then by developing aggregate dimensions from the findings. A central underpinning of this approach and process is that these aggregate dimensions did not emerge passively (Braun and Clarke, 2021). Instead, the researcher applied reflexivity in constructing them through active and significant engagement with and analysis of the data, as well as the interpretation of the participants' stories of their lived experiences (*ibid*). Interestingly, in analysing the data, the researcher observes that a symbiotic relationship is rapidly developing between the participants and the technologies, and that this interaction challenges the traditional stereotypical masculine hero entrepreneur. Not only does it have implications for the (s)hero conceptualisation of female entrepreneurship but also points to a more nuanced and broader SHERO model which encapsulates dimensions of “Sustainability, Hope, Empowerment, Resilience and Hope”.

It is important to note that although the responses for the interviews and the narratives are layered, patterns have emerged to shed some light on the holistic contextual reality of the phenomena (O' Grady, Clandinin and O' Toole, 2018). Consequently, emphasis was placed on deciphering emerging patterns from overlapping data collection and analysis to trigger any need to adjust the research design, data collection instruments and methods (Eisenhardt, 1989). Intrinsically, the themes emanate from the responses that the participants gave during the semi-structured interviews (Bryman, 2016) related to the following areas of enquiry: “What are some of the main challenges faced in establishing and operating your business?” “Describe your experience in using digital technologies in your business operations.” and “Explain how the use of these technologies has impacted the challenges you faced in the business.” The aggregate dimensions are explored and illustrated with relevant fragments of narrative or “power quotes” gleaned from the participants (Pratt, 2009) to further highlight how the subjectivities and objectivities of the perspectives and

experiences of the female digital entrepreneurs challenge patriarchal ideologies in entrepreneurship, as well as demonstrate the potential for rethinking female entrepreneurship. To better understand the complex dynamics of digital technologies (Beliaeva *et al.*, 2020) and their effects on the changes affecting female entrepreneurship in the Global South in an era of rapid digitalisation, each of the themes is presented in the various sub-sections of Chapter 5. It should be noted that while the contexts and experiences have differed among the individual participants, these themes re-emerged in their narratives as they traced their trajectory as digital entrepreneurs in keeping with the ascribed categories depicted in **Figure 4.2**. Moreover, the analysis has shown that these themes are intertwined and sometimes occur concurrently, even though they are presented and can be interpreted as discrete.

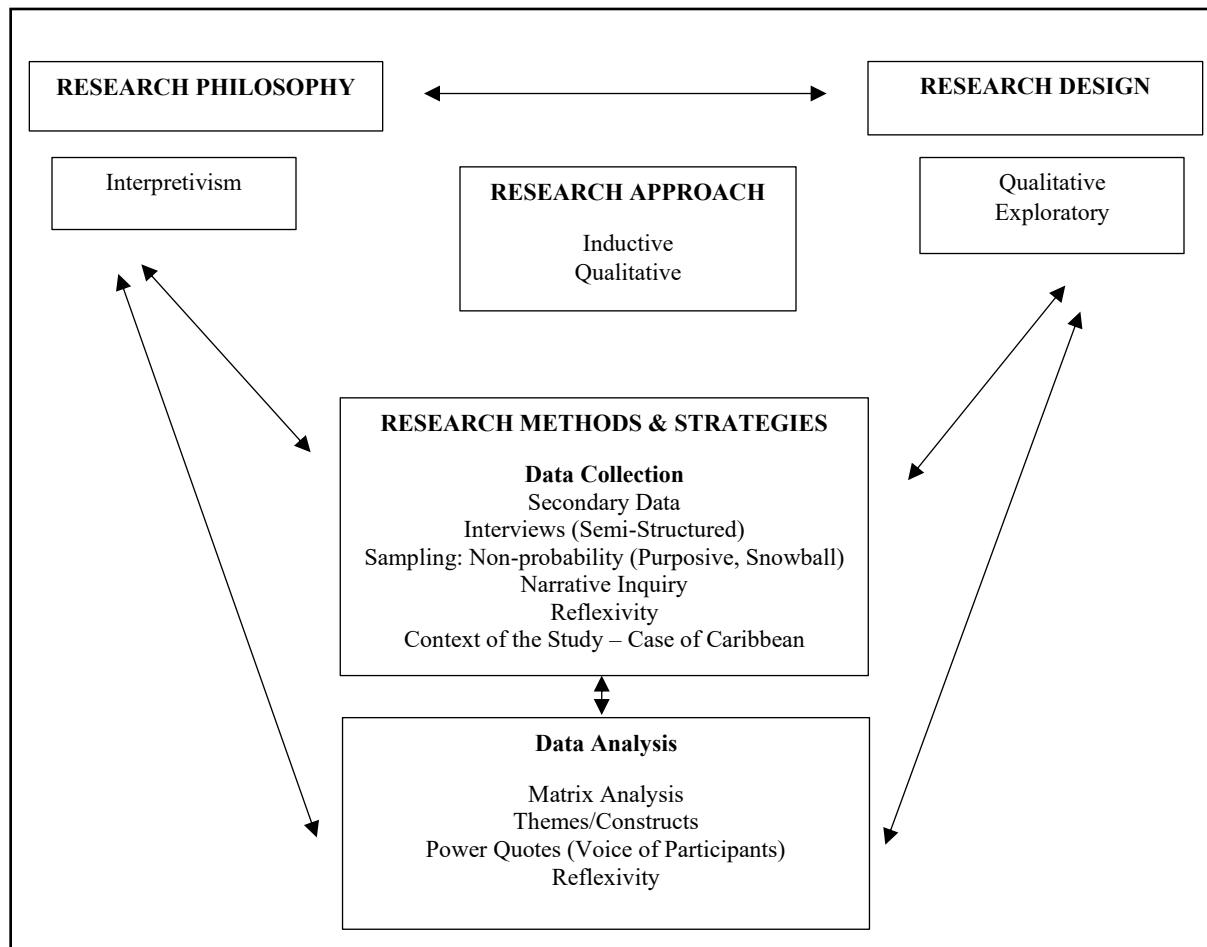


Figure 4. 4: Research Methodological Framework

Source: Author's own

4.6 Summary

A summary of the overarching methodological framework selected for this study is depicted in **Figure 4.4**. Notwithstanding the dominant functionalist approach towards research in the field of entrepreneurship (Calás, Smircich and Bourne, 2009), the selection of qualitative methodologies is considered more appropriate for this study. In keeping with the subjective ontology and interpretivist epistemology of the researcher, a context-focused approach is selected to guide the methodological framework and the selection of data collection tools and processes. Hence, the systematic yet flexible and creative space for developing theory from the unearthing of novel and nuanced information (Jarzabkowski, Langley and Nigam, 2021) is deemed apposite for investigating the impact of digital technologies on female entrepreneurship in the Caribbean region, for which there is a dearth of extant research. With the context-focused approach, the prospects are rife for pushing historical methodological boundaries in an accountable, coherent and professional manner (Ketokivi and Choi, 2014; Jarzabkowski, Langley and Nigam, 2021), while bringing fresh perspectives to the contemporary phenomenon of female digital entrepreneurs. In effect, by incorporating gender lens in the research methods, female entrepreneurs are “given an authentic voice” through non-traditional channels; particularly in view of the inattention to embedded gendered assumptions (Ahl, 2006) and the contextualised digital perspectives (Martinez Dy, Marlow and Martin, 2017) in the research streams of female entrepreneurship and digital entrepreneurship.

In keeping with the methodological approach, the main findings which emanated from the study are nuances and novelties relating to entrepreneurial resilience, entrepreneurial leadership, entrepreneurial empowerment and entrepreneurial contexts. Additionally, by using post-colonial feminist lens and drawing from the TACT, the results of the data collected culminate into a reconceptualised (s)hero model towards a SHERO theorisation. This was exemplified in the fact that the female digital entrepreneurs were able to scale at least one business venture, and in a few instances scale multiple businesses across the Caribbean. These are described in the following Chapter 5 which provides detailed description of the lived experiences of the research participants, together with the reflexive ideas of both the researcher and the participants themselves who are

co-creators of the research given the richness and depth of the information provided in support of the study.

It is important to emphasise that the use of reflexivity in this study demonstrates a full consciousness of the researcher in acknowledging and giving focussed attention to the complexities of the social positionality and power dynamics within the research process (Cunliffe, 2004). Further, in recognition of the importance of reflexivity within feminist scholarship which has shown how implicit biases have historically underpinned the production of knowledge and theoretical positions, this study is not just a simple or transparent reflexive account of the research, but a critical reflexivity of the research process (ibid), which also includes an awareness of the researcher's own history and situatedness as a female Caribbean citizen.

CHAPTER 5: FINDINGS

5.1 Introduction

This chapter presents and analyses the findings obtained from the semi-structured interviews which were conducted for the research. The research participants comprised 30 female digital entrepreneurs from three countries in the Caribbean region: namely Barbados, Trinidad and Tobago, and Jamaica and from a range of sectors focused on providing services only, products only or a mix of products and services including educational services, agro-products, business development services, retail services, and manufactured goods. The rationale for selecting the countries and the approach for selecting the participants are explained in detail in Chapter 4 – Methodological Framework.

The findings indicate how digital technologies influenced the orientation and endeavours of female entrepreneurs and the ways in which these technologies are used as a source of opportunities to overcome challenges in the entrepreneurial and digital environment. The challenges experienced by the female entrepreneurs are encapsulated in topics related to the limitations or lack of information, capacity, institutional support, financial resources, supply chain management, and competitiveness in their business enterprises. It was also noticeable from the responses of the 30 participants that, in the face of post COVID-19 pandemic and the concatenated effects of other current global polycrises, there is a proclivity towards adopting digital technologies and improving capabilities to drive and sustain business operations. By incorporating critical reflexivity, the researcher focused on existential, relational and praxis (Cunliffe, 2004) of the gendered contextual issues surrounding the interplay between digital technologies and female entrepreneurship in a non-Western digital environment. Based on the reflections and interpretations of the explicit narratives and emic meanings of the participants' lived experiences and perceptions in using digital technologies to address challenges and enhance opportunities in their various contexts, four aggregate dimensions have emerged from the interviews with the female digital entrepreneurs. Guided by the objectives of the study and the theoretical lens applied to draw out a deeper understanding, the most crucial emerging findings related to the impact of digital technologies on

female entrepreneurship are entrepreneurial resilience, empowerment, leadership and context as shown in **Figure 4.3**.

Descriptions of these findings are organised and presented thematically in accordance with the aggregate dimensions. In an effort to unpack the dynamics of the multiplexity of the impact of the changes affecting female entrepreneurship in the Global South in an era of digitalisation, each of the themes is presented in the sub-sections of the chapter. It should be noted that while the contexts and experiences have differed among the individual participants, these themes re-emerged in their narratives as they traced their trajectory as digital entrepreneurs. From the analysis, the themes have evolved as intertwining and in some instances occurring concurrently, even though they are presented as discrete aspects of the research findings.

As previously detailed in Section 4.5, intrinsically, the themes of entrepreneurial resilience, empowerment, leadership and context emanate from the responses that the participants gave to semi-structured interview questions (Bryman, 2016) related to the following three main areas of enquiry: “What are some of the main challenges faced in establishing and operating your business?” “Describe your experience in using digital technologies in your business operations.” and “Explain how the use of these technologies has impacted the challenges you faced in the business.” By using relevant fragments of the narrative or “power quotes” gleaned from the participants’ responses (Pratt, 2009), the aggregate dimensions are explored and illustrated more in-depth. Further, this approach is instrumental in highlighting how the subjectivities and objectivities of the perspectives and experiences of the female digital entrepreneurs challenge patriarchal ideologies in entrepreneurship, as well as demonstrate the potential for rethinking female entrepreneurship.

5.2 Entrepreneurial Resilience

The findings from the data collection provided insights on the contemporary business landscape in the Caribbean, where digital technologies used by female entrepreneurs have become integral in building resilience in the various aspects of their business operations. In considering the scope and nature of the participants, who are all characterised as SMEs, the findings revealed a

heightened significance of promoting resilience given the linkages between individual and organisational resilience (Branicki, Sullivan-Taylor and Livschitz, 2018). The findings of the analysis illustrate that in the practices and processes of female entrepreneurship, the role of digital technologies is not merely auxiliary but rather is central towards effecting entrepreneurial resilience through their functioning both as a necessity in this digital era and as a trigger for creating new opportunities, in response to or in anticipation of business recovery or transformation as a result of crises. In summary, the participants emphasised three main areas of entrepreneurial resilience in the Caribbean context, namely: (a) information for self-efficacy, critical thinking, decision making and productivity; (b) resourcefulness and capacity building; and (c) diversifying and sustaining representation.

5.2.1 Information for Self-efficacy, Critical Thinking, Decision Making and Productivity

During their business operations, the women relied on digital technologies to access information. The participants utilised a wide range of digital technologies such as social media, mobile devices (including smart phones, kindles, iPads, laptops), computers, software, data analytics, and artificial intelligence applications (such as ChatGPT) to obtain information for promoting their services and products, broadening their customer base (locally and internationally), engaging with potential customers, and networking within the entrepreneurial ecosystem. Access to information was portrayed as pervasive and frequently linked to breaking down barriers and overcoming challenges in their business operations. The participants provided insights on their entrepreneurial journey to fulfil their personal and professional aspirations. Consistent with these aspirations were the entrepreneurial experiences the female entrepreneurs derived from the use of digital technologies in enabling access and even control of information, thereby resulting in expanded networks, as well as enhancing self-esteem, self-confidence and visibility in public spaces. The participants shared the importance of the technologies in providing information to foster communication and business support. Nisha (FE#9) who operates an agro-processing company depicted the role played by the technologies in challenging cultural barriers and improving her business operations through close engagements with customers:

For sure social media has helped me to connect with my customers and connect with a broader audience... With online payment options, I am able to reach a different type of clientele. This gives the business a bit more legitimacy (FE#9 – Light¹¹).

In entrepreneurship, self-efficacy plays a crucial role in adapting to new situations (Ahl and Marlow, 2012). Across the three countries, many of the participants reported on their investments in the digital tools to take advantage of market opportunities. The narratives show that in their business practices, the female entrepreneurs utilised digital technologies during challenging periods of their business start-up and operation for idea inspiration and a source of validation of new business ideas. Within the range of sectors they operate, the female digital entrepreneurs were able to scale at least one business venture, and in a few instances scale multiple businesses across the Caribbean. In such situations, the participants noted that through the technologies, several opportunities are not necessarily restricted to their localities. Hence, in the face of challenging times, such as the COVID-19 pandemic, the participants realised the critical importance of expanding their business landscape which the technology facilitated. Moreover, regardless of their readiness and experience, the prevalent use of digital technologies in entrepreneurial endeavours helped the participants to improve their self-confidence, which in turn prompted their attitudes and beliefs about their personal capabilities. Indeed, such experiences are important in evoking self-efficacy in the entrepreneurial environment. The researcher also observed that the female digital entrepreneurs referred to meaningful positive reinforcements of their business endeavours that were derived as they gained self-confidence through bonds of trust which developed in their respective online communities and spaces. This notion is aptly captured by Henrietta (FE#17) who owns and operates a Podcast, Cherise (FE#29) who owns and operates a health and wellness business venture, and Arlene (FE#6) who owns an e-commerce platform, as they reflected on their experiences and recounted the following:

Actually, there is a perception through socialisation that men are more “techie”. I believe I have had this perception as well and shied away from it [digital technology]. However, my business experience is that the digital world offers a level playing field. Over the years, I have gotten so much more comfortable with technologies, although there is still a lot for me to learn. I am into social media advertising and promotion and use various communication channels for setting up and distributing my podcasts....When COVID struck in 2020, I was

¹¹ In keeping with the categorisation of digital entrepreneurs in Sub-section 4.5.1, “Light” refers to a participant who uses digital technologies as a complement to the more traditional processes. Hence the ensuing labels of “Moderate” and “Extreme” that are ascribed to the participants are as per the definitions of the categories in the said Sub-section.

way ahead of the game. In the last year or so, ChatGPT is my latest assistant (FE#17 – Extreme).

Before COVID, I was toying with the idea of setting up a website and using social media for marketing. But when faced with serious financial problems during the pandemic, I decided to get the business online in 24 hours. Hence, I was able to make in excess of [large sum in US\$]...That could have only happened because I was able to pivot using the same technologies that I didn't really want to use [previously] (FE#29 – Moderate).

The journey with digital technologies is a positive one in the end because I am in a better place than when I started off in terms of the mentality and culture...Seeing that everybody loves technology, I said I'm going to give them technology. This is my time to shine. And the craving need to adapt very fast has helped me as an entrepreneur (FE#6 - Extreme).

In addition, as the participants relied immensely on social media (including YouTube, WhatsApp, TikTok, Instagram, Facebook, LinkedIn and Twitter) to connect beyond their usual business environment, they enhanced their self-confidence in marketing their products and services and in feeling a greater sense of achievement with their entrepreneurial abilities. By creating new marketing opportunities, the use of these digital platforms evoked a greater sense of support and achievement at the micro and meso-levels of the entrepreneurial contexts. The findings showed that approximately 90% of the business entities were solely owned by the participants themselves and as such, much of the decision-making linked to the business operations rests with the female digital entrepreneurs. This situation suggests there is a high level of self-efficacy among the participants, which when complemented by digital technologies significantly impacts their entrepreneurial intentions and actions. Therefore, although the benefits were manifested in varying degrees across the sectors and countries, the findings show that the technologies were instrumental in helping female entrepreneurs to improve their business processes and be better able to navigate and cope within the digital space. The account of the experience of Rudelle (FE#5) and Lovely (FE#2), summarises their perspectives on the role of the technologies in their operations in obtaining information that influences critical thinking:

Digitalisation helps and assists in terms of critical thinking of how to solve problems in the midst of your physical limitations....I am just saying that technology assist in one aspect as I think we still need each other at the end of the day...How we can work with each other: our strengths and weaknesses come together to get the job done (FE#5 - Moderate).

I recently joined an entrepreneurial platform for the first time. It is like an entrepreneurial hub that works like Facebook. You can share information with other entrepreneurs on the platform...there are opportunities for collaboration with other businesses and sharing information (FE#2 - Light).

To the extent that technologies have become an integral part of their business operations to adapt to challenges, the female entrepreneurs described their continued efforts at using the technologies in creative ways to attract new customers and to keep the existing ones interested and engaged over time. The participants shared the need to have the digital tools to access valuable information and knowledge sources that are important to maintaining and managing their operations. Further, through the digital platforms, the female entrepreneurs also took the initiative to create more business opportunities by adopting new business approaches in light of changing operations to meet new product demands, as well as new categories of online clients and their attendant online products. The experiences of participants Nancy, (FE#19) and Astra (FE#14), as shared in their narratives, underscored this:

My new business is a learning and communication platform...it does not keep me up at nights but fills my waking hours...by living on an island, digital technologies enable me to be more agile in seeing business opportunities and to leverage the digital world (FE#19 - Extreme).

I always had a website but after two years in business, I realised the local market is not sustainable. But with these technologies, efficiencies stand out....So, with social media (particularly, Facebook, Instagram and TikTok), I am now able to rebrand, blog and be creative in my marketing...It gives me a competitive edge...The testimonies of clients showcase my work to the global market (FE#14 - Moderate).

Since addressing recurrent challenges and prolonged constraints demand proactive and strategic approaches, the findings reveal that among the participants, the technologies were instrumental in obtaining information for improved decision-making processes and business operations - inclusive of planning, supply chain management, time management and coordinating multiple distribution channels. The participants noted these improvements which have implications for gender normative issues related to access to information for business-related decision making. Importantly during the interviews, it was apparent that while digital technologies are useful communications tools, the persistence of the female entrepreneurs in the entrepreneurial processes was emphasised. Additionally, for the shocks and disruptions experienced during the COVID-19 pandemic, the use

of digital technologies was a key mechanism which enabled the female entrepreneurs to either pivot or expand their business model and maintain virtual presence, as well as effectuate continued engagement with their customers in providing products and services. As commonly expressed during the interviews, Brandy (FE#25) who owns and operates a business development enterprise, summarised her experience as follows:

During the pandemic, we did a lot of sessions with our entrepreneurs via Zoom. It really has been a powerful tool for us. Zoom has just been a charm. It has improved communication, connectivity, and our global reach. [However], the downside is that because there are so many social media tools...it is almost as if you can't unwind (FE#25 - Moderate).

Indeed, such heterogenous findings from the data, highlight the nuanced diversity in the context of the digital sphere for female entrepreneurs. Further, the technologies not only played a role that afforded opportunities to recover and reinvent their business processes and activities during this disruptive period but also provided additional opportunities to innovate and apply significant changes in marketing practices (using social media) and to access new networking experiences. Participants Katie (FE#15), Raquel (FE#8) and Donna (FE#22) respectively explained how the use of the technologies impacted their business venture through the following accounts:

I see the effect on productivity and critical thinking. Now I have records and information on each process on my computer and mobile phone. With the different issues recorded, I can keep an eye and be able to track the status of orders... In digitalising the process, I enhance my accuracy in decision making (FE#15 - Moderate).

We use a lot of digital technologies which are integrated into our systems to help with business efficiencies. We have a system on the platform where we buffer alerts for if a product is going below the average quantity that we usually use per week or per day where some of our suppliers are linked to that system and are then notified that they need to restock us with whatever the standard delivery amount we usually take from them (FE#8 - Moderate).

Digitalisation saw the evolution of my business, as without technology there would be no business because this is what I mainly use for running the business. I truly don't know how I would have managed, as traditional Ads are now so expensive for small businesses and even obsolete (FE#22 - Light).

Across the dataset, the participants identified the technologies as contributing to access to markets, facilitating SMEs to reach new customers (including global customers) and enabling more

competitive operations. The sharing of their experiences on the use of social media and artificial intelligence underscored that the participants are embracing new business models which have scope for further changing their approaches and even their mindsets in relation to businesses that can be operated in countries and across regions. In the context of digital technologies, the participants apply their analytical skills to solve increasingly complex business problems.

5.2.2 Affordances, Resourcefulness and Capacity Building

The use of digital technologies by the female entrepreneurs plays a role in impacting their processes and strategies for creating and securing resources. As SMEs that are faced with resource constraints, the researcher gained insights into the dynamics of resource development by integrating considerations of entrepreneurial bricolage¹², with digital technologies contributing to increases in efficiency and addressing limitations to their resourcefulness in the business environments. Indeed, by “making do” with the resources of digital technologies at hand to address problems and embrace opportunities, the female entrepreneurs mobilised resources (financial and non-financial) mainly through deliberate repurposing of these technologies. Further, the participants referred to the use of their personal digital artifacts to access and expand their use of available digital platforms and architecture in the digital space to successfully redesign their business models and processes. For instance, the female digital entrepreneurs explained how they used personal digital tools such as mobile phones and social media accounts (such as WhatsApp, Facebook, Instagram, TikTok) for their business operations. The female digital entrepreneurs revealed that digital technologies were used as practical tools to drive and carry out their business activities and processes more effectively. Participants Rudelle (FE#5), Linda (FE#7), and Katie (FE#15) summarised their experiences in the following accounts:

When I realised that I can't meet the demand, I curtailed my advertising campaign via social media. So, I used WhatsApp on my personal mobile to refocus operations and to maintain a niche market (FE#5 - Moderate).

¹² Entrepreneurial bricolage is a concept coined by Baker and Nelson (2005) to describe the actions of entrepreneurs who make do with what is available or to create something from nothing. Baker, T. and Nelson, R.E. (2005) 'Creating something from nothing: resource construction through entrepreneurial bricolage'. *Administrative Science Quarterly*, 50 (3), pp. 329-366. <https://doi.org/10.2189/asqu.2005.50.3.329>.

It [the business] is a lot to manage. Since my laptop is heavy and cumbersome, I do not walk around with it. So, it is helpful that I can access google drive for the business through my personal mobile phone. I could go online to track prices of [name of products] and to determine how I price them on the market and share this information with other businesses....If the internet access is poor, I usually turn on my mobile phone as a hotspot to `be able to use internet on the computer (FE#7 - Light).

I use Instagram, Facebook, and TikTok to advertise. I use my smartphone to take videos of the business processes that I am doing or take photos of the finished products...If I am going live, I use Instagram and go live. So, I use my smartphone for that (FE#15 - Moderate).

Indeed, the narratives of FE#5, FE#7 and FE#15 highlight the use of digital technologies in inspiring and emboldening the female entrepreneurs to more effectively participate in their dynamic entrepreneurial spaces. This further resonates with the concept of bricolage where the female entrepreneurs use their personal digital technologies as tools to bolster their resourcefulness and expand their capacities and capabilities in their business endeavours. This is demonstrated by Kasha (FE#28) who owns and operates a Business Support enterprise, Nisha (FE#9), who owns and operates an agro-processing business, and Monica (FE#10) who owns and operates a retail store in their respective account:

Mine is a virtual business.... A lot of these technologies I learnt are at the “University of YouTube” or “YouTube University”. There’s a lot of stuff I learned online. Also, I subscribe to a lot of other persons [experts] who are in the digital space who’ve helped me (FE#28 - Moderate).

When you do not have a lot of money, you use Google and YouTube and figure out how to do these things. Through these, I was able to set up the website for myself, as well as set up and manage the Facebook pages for myself (FE#9 - Light).

CANVA is pretty easy to use...it is affordable for any small business that does not have the spend to hire a Graphic Artist or Marketing Company to do content, Ads, Flyers etc.....For any small business that wants to get its brand out there, it is a huge Savior (FE#10 - Light).

The active collaboration of the participants through e-groups, virtual discussions, attendance at online events (shows and exhibitions), formal and informal associations with other entrepreneurs (including male and female), firms, professionals, and organisations were very instrumental in helping them as female digital entrepreneurs to keep abreast of the changes in the business environment. In light of the heightened dynamic features of the environment, currency and

accuracy on business trends and status are of primary importance. Therefore, participants displayed the value of their social capital, as shown through the power of personal networks and relationships created through the use of the technologies. Interesting insights were gleaned from the experiences of the participants in being able to capitalise on additional social and human capital that were at their disposal through new supportive relationships which are facilitated by the use of digital technologies. In consonance with these findings, the narratives of Kimberlee (FE#4), Donna (FE#22), and Brandy (FE#25) emphasise the importance of the connections derived from digital technologies which in turn produced “informal” support mechanisms:

Through my involvement in online conferences, I met other female entrepreneurs, and we have stayed in touch thereafter via WhatsApp groups.... The technologies facilitate networking as we have each other's numbers. If support or a favour (personal or business) is needed, we tend to go to members of the group first. Hence, through these groups, networking is done and when we see business opportunities, we share the information and collaborate easily (FE#4 - Extreme).

Through the use of digital technologies, there are community spaces created which enable the female entrepreneurs to find other business owners and experts who can act as substitutes in their absence (FE#22 - Light).

There are some female entrepreneurs who still don't know how to use Zoom. There are some who cannot and don't have access to a proper digital device....Because we have “gotten it”, we support these entrepreneurs to address their digital poverty (FE#25 - Moderate).

The female entrepreneurs often used the technologies to build stronger capacities so that they can take advantage of new and expanded opportunities in the business environment. Through such practices they were able to harness effective strategies in order to navigate the entrepreneurial ecosystem and improve their experiences as entrepreneurs in general, and in the digital space, in particular. In effect, the participants used the technologies to capitalise on meso-level opportunities for value creation. Empirically, Kandia (FE#18) and Kimberlee (FE#4) underscored this in their statements:

By not having a physical store front, digital technologies help with visibility, cost is low for payroll, and I am able to manage the business more efficiently (FE#18 - Extreme).

From start-up to present, digital technologies have been enablers...I am able to cut cost. I do not have to hire someone as I am able to do the maintenance. As I am able to train staff

to use the platform, I am able to cut down on my hours of work. I am able to help them [staff] to grow professionally...they can utilise this training even when they leave my business (FE#4 - Extreme).

Further, the findings suggest that the capacity building efforts of the female digital entrepreneurs signaled a critical turning point in their entrepreneurial journeys. In their quest to influence SME resilience, the participants were deliberate in utilising digital technologies to share lessons learned and to provide opportunities to solve problems or challenges faced such as limited finances, environmental hazards, crises, and limited scope for internationalisation. For instance, the participants explained that in sharing their expertise and knowledge online, other less endowed female entrepreneurs were able to enhance their resilience by accessing materials for free or at largely reduced costs (if it is done through an organised training modules or sessions). Within the digital space, the participants explained how they were able to engage in training and knowledge exchange sessions via online platforms (such as Zoom, WebEx, Teams, WhatsApp) either as participants or hosts to provide information on what works and what does not work within their given entrepreneurial context. This is an important perspective as the participants are keen on illuminating nuanced issues in the digital entrepreneurial space that could be easily missed by their female counterparts. The narratives of Arlene (FE#6) and Nicola (FE#16) underscored such experiences:

Providing information to people by means of these technologies, even if I do not make money off it, is more important than anything else. Keeping people happy by being able to answer and give them answers when they want it...for me that is success (FE#6 - Extreme).

I offer digital skills training courses online to enhance critical thinking among young girls...I see this as a major paradigm shift in the educational system (FE#16 - Extreme).

Notwithstanding, the researcher noted the critical reflexivity of the participants in avoiding romanticism of the digitisation phenomenon in building their capacity, particularly in light of the perceived flexible and intuitive nature of social media and other mobile tools. The female digital entrepreneurs across all age groups, marital status, educational backgrounds, sectors, and countries were not reticent in sharing their perspectives on some of the pitfalls or drawbacks from the integration of digital technologies in their business operations. In this regard, their focus was not so much on the structures and mechanisms within the business environment which reinforced the

constraints they faced, but moreso on those intangible aspects or invisible adjustments they had to make in the current digital era. Based on their experiences, what seemed to have evolve is a sense of “muddling through” or grappling with the novel circumstances and situations, instead of having a planned strategic response to the changing conditions. Patricia (FE#30), Nancy (FE#19) and Loverly (FE#2) highlighted their own experiences which challenged the impact on their entrepreneurial and individual resilience as they indicated:

The technology pretty much helps up to a certain extent...However, it changes all the time. So, you might get accustomed to doing something one way and then you have to learn a new way to do it, because it is upgraded. That is one of my challenges (FE#30 - Light).

The digital technologies keep evolving...so we have to learn to forgive ourselves for not knowing everything, because its literally having to learn as we're learning... It's about being agile and digital allows for agility and hence agility is a skill that everybody must have (FE#19 - Extreme).

Sometimes I have to barter to build my digital skills... I would offer my services free or at a subsidised fee to customers (irrespective of gender) in exchange for their digital skills and expertise (FE#2 - Light).

Among the participants, digital technologies were mobilised and complemented with other non-digital resources to drive and innovate the business operations. In this way, the practices of the female digital entrepreneurs through various permutations and substitution of combined resources reflected the concept of entrepreneurial bricolage where the approaches and strategies employed by the participants resulted in resource savings and value added for bolstering diverse human capacities and achieving more efficient entrepreneurial operation and business processes. The participants likened the use of digital technologies to supporting their ability to better assess the complexity of their business environment. In turn, they are able to develop appropriate responses to increase their chances of survival through business adaptation.

5.2.3 Diversifying and Expanding Representation

Building on the enhanced resourcefulness of the participants, the findings reveal that, through the use of these technologies, the female entrepreneurs displayed their capacities and capabilities by providing support to other entrepreneurs (mostly women) through knowledge and skills

development. Insights were gleaned from the narratives given by the participants of how they employed digital technologies to improve and to bolster the ability of other female entrepreneurs to access funding and to obtain adequate business support. Influenced mostly by the effects of the COVID-19 pandemic, the heightened focus on technological innovation by the participants to overcome challenges was also a prominent feature which in turn signaled new opportunities for digital entrepreneurship in the region.

From the findings, the participants used digital technologies to directly mentor other women and girls with the expressed motivation to effect change (inclusive of those from vulnerable groups and located in remote areas) and ultimately to positively influence the diversity of female entrepreneurs. From the feedback of the female digital entrepreneurs, they took actions to increase awareness of the role of these technologies in impacting business innovation and the expected emergence of a new business culture. According to the participants' experiences, other female entrepreneurs and girls were more inclined and encouraged to embrace the use of the technologies for business endeavours when they saw tangible proofs among them. Notwithstanding their heterogeneity, as female digital entrepreneurs originating from a similar background (geographically with tertiary education) which is situated within the wider entrepreneurial and digital environments, the participants emphasised the importance of transferring relevant knowledge on the market situation and fostering cultural values for digital entrepreneurship among the women. Hence, in some cases, these technologies facilitated the participants being recipients or beneficiaries of mentorship. Importantly, the female entrepreneurs are focused on improving their effective participation and representation within the entrepreneurial ecosystem in the region and globally. Further, the findings suggest there is a recognition and a deliberate mindset among the participants to use the technologies as tools to focus on transformative actions within the new entrepreneurial digital conditions. As part of the process of developing and maintaining appropriate cultural values in such a disruptive and innovative environment, the participants engaged in or shared knowledge and experiences on areas related to continuous learning, agility, customer orientation, cooperation, communication and among others. The narratives shared by Henrietta (FE#17), Sumitra (FE#26) and Astra FE#14 recounted their respective experiences:

Through digital technologies I have an online mentorship programme where I offer skills training to disenfranchised women and give them a second chance...the participants of the programme are global (FE#17 - Extreme).

The landscape has changed and made it easier to drive mentorship programmes. There is a need for it...with digital technologies, students and other young entrepreneurs can be mentored more broadly ...For the Caribbean programme, the focus is not just one island but all islands and the idea is to help the female entrepreneurs that are really shy and those that do not have support and not getting enough money....In general, digital technologies bridge spatial and social gaps (FE#26 - Extreme).

Digital technologies provide an amazing service...I am now able to participate in online coaching sessions and benefit from a Business Mentor who has helped me overcome significant challenges faced during the early stages of my operations (FE#14 - Moderate).

Interestingly, some of the female entrepreneurs involved in online mentorship or capacity building programmes demonstrated awareness of gendered issues within the digital entrepreneurship environment. This was particularly evident among those who transitioned to digital and replaced aspects of their face-to-face business operations with online operations and activities. Occasionally, evidence of divergent perceptions came to the fore during the interviews with the participants. From the perspectives of the participants, the dynamics of stereotyped behavioural social configurations of women transcended boundaries and evoked an acute awareness of their nuanced differences or “otherness” which is reflected in the digital entrepreneurial space. With an understanding of their reality, which can be easily masked in the disruptive digital space, the female digital entrepreneurs sought to avoid masking their challenging conditions (subjective and objective) into the future by naming and bringing attention to the issues. For example, the accounts of participants Donna (FE#22), Loverly (FE#2) and Patricia (FE#30) showcased this:

One on one provision of training is facilitated online which is deemed a safe space as some services such as fitness or yoga can be easily sexualised (FE#22 - Light).

I guess for your business to grow online, there is a heavy emphasis on sexual appeal for marketing which is not a requirement for males. Women are often criticised and chastised to have perfect figures on social media (FE#2 - Light).

There are a few young ladies that I kind of took under my wings. So, it is pretty much mentoring.... We communicate via my mobile phone...mostly via WhatsApp. However, it's still a small business and I find sometimes I have to put in a lot of long hours. And it can be overwhelming sometimes, to be honest (FE#30 - Light).

Another interesting result from the study is that the female entrepreneurs embraced opportunities to effectively use the technologies to be more creative in their entrepreneurial ventures in the face of the disruptions caused by the COVID-19 pandemic. Notwithstanding the dark shadow cast over the region's business environment by this pandemic, the findings reveal that, in general, this crisis facilitated and enabled businesses and communities to rethink their interaction with digital technologies to overcome this adverse situation and in turn how to leverage these to survive and thrive in the post-pandemic era. The analysis showed that the participants became more stimulated to integrate and increase digital solutions to improve their participation in the business environment. For instance, the participants shared their experiences of the interesting dynamics of the merging of the two different relationships in competition and cooperation in the digital entrepreneurial space. Indeed, the effects of the pandemic bore marks of a watershed moment for the business landscape where the interplay between the participants and digital technologies illuminated new opportunities for digital entrepreneurship in the Caribbean. For example, Arlene (FE#6), Patricia (FE#30), and Janet (FE#11) recounted:

Yes, I think the pandemic really changed a lot for me. First negatively, but then in a positive way....through the darkness, an opportunity was born for me personally. During that challenging period, I was able to come up with two ideas which was a redirection of my business operations... In this period was born my two tech start-ups which are now an [integral] part of my overall operations (FE#6 - Extreme).

When I started, most of my work was marketed by "word of mouth". But as time went by, my kids helped me to initiate the set-up of Facebook and Instagram. I also did a computer course. But with the pandemic, I had no choice...technology was it. I decided I couldn't go back then. With the type of work I do, I would say technology visual is more important than talking about effective marketing. With technology this is a click away...And in a few seconds the visuals can be shared with people all over the world (FE#30 - Light).

Having technology really helped me because of what I was able to do when I couldn't see people face to face... In hosting Focus Groups, I was able to invest my time to get feedback from people and also better able to invest the little savings into the business... That was the type of market research I needed to survive and grow (FE#11 - Moderate).

Similarly, even in instances when there was a need for agility in digitalisation to restructure business processes and there was limited technical knowledge and cognitive skills in the use of digital technologies among the female entrepreneurs, the response of the female entrepreneurs

focused on maximising their capacities to meet the demands of their customers. While with the pandemic some entities were able to affect their readiness for the digitalisation shift by equipping their staff and operations with the required digital technologies, others were open to obtaining external support through the outsourcing of digital experts. From the participants' points of view, surviving in such a dynamic and sometimes uncertain environment requires outsourcing services to external business entities as the innovation cycle for the technologies are relatively short which can make it difficult for SMEs to be able to afford or undertake all the tasks in their operations by themselves. This heightened orientation of the participants towards integrating technological solutions to transform their business challenges into opportunities suggests an increasing demand for digital entrepreneurship among the female entrepreneurs. This is emphasised by the narratives of Brandy (FE#25), Rhiza (FE#1) and Arlene (#6) who explained their experiences:

I like to say that I am the least techie person around...but I cannot be bothered with the configurations of trying all things and remembering how to do stuff. So, when possible, I prefer a technical person to do it for me (FE#25 - Moderate).

My country has more of a cash culture, where people like to see, touch and feel products. But when everything was under lockdown, they were forced to shop online since they could not go outside...I had previously taken a website design class so when COVID struck, I did a quick design and launched it. And in just over a year, I have made [large amount] in online sales when before nobody would do it (FE#1 - Light).

COVID was a turning point...I saw the cultural shift from the anti-tech attitude of customers in doing business...While I am a tech founder who does not know how to code and how to create an App, I was able to survive because I have Advisors and then I outsourced the advice to Developers to get the job done (FE#6 - Extreme).

Additional opportunities for driving digital entrepreneurship were highlighted in the changes in work settings to include remote working mode for female entrepreneurs. The participants explained that the nature of the flexibility occasioned by remote working lent itself not only to working from home, but also from a wider scope of geographic locations which can be supported by the necessary digital technologies. On the one hand, some of the female entrepreneurs, such as those involved in retail sales or services, explained how they had to learn new digital skills to be innovative and creative to keep their business operational during the pandemic. On the other hand, the participants welcomed the accessibility, and the appeal of the entrepreneurial opportunities afforded by these technologies in enabling them to invent new modalities of remote work, to

rearrange the space and schedule at home for work, and a change of mind set of the spatial context of work which is discussed in further detail in Section 5.4. The data analysis highlighted that access to and affordance of innovative communication technologies and other innovative digital tools (such as Zoom and social media) during the pandemic facilitated the integration of technologies to support online business operations and business continuity in general. Invariably, such changes suggest a reshaping of the entrepreneurial environment in this digital era. For example, Kasha (FE#28) and Arlene (FE#6) narrated:

Because I work from home, I can focus on meeting deadlines without having to worry about the time I have to leave office.... With the crime situation, I am safer at home. So having all of the tools means I can work safer, I can work smarter, and I can get more done without all the other costs and challenges (FE#28 - Moderate).

From a business perspective, we now get to use digital tools and people are more receptive to the notion of working from home (FE#6 - Extreme)

Providing evidence of diversification and expansion with regards to female entrepreneurship, digital technologies provided the women with the opportunities for boosting human capital development and entrepreneurial/business skills. The enhanced human capital influences the thrust of the participants to embrace change with a view to making a difference within the entrepreneurial environment and the wider community, thereby revealing the nexus with their entrepreneurial leadership which is further elaborated in Sub-section 5.4.2. Amidst patriarchal systems and practices, the technologies compensated for the lack of physical assets and allowed them to accumulate and share the necessary capital to stimulate innovations, launch socio-economic activities, improve production, and contribute to the growth of female entrepreneurship. This experience also shows a link to a heightened hope and optimism among the participants as they reflected on their current and future business outlook (*Refer to Sub-section 6.5.2*). Moreover, the aspirational hope developed by the participants to narrow the gender gap and the gap between their current and desired entrepreneurial situation highlights entrepreneurial empowerment not so much as a measurable individual outcome, but rather as a relational and processual phenomenon with an implicit aim to raise awareness for collective action in building capacity to effect change.

5.3 Entrepreneurial Empowerment

Although in many developing countries, there is evidence of a broken virtuous spiral of entrepreneurship and empowerment (Al-Dajani *et al.*, 2015), the findings of the study captured changes associated with the empowerment of female entrepreneurs who employ digital technologies. The analysis pointed to the notion of empowerment not only from the standpoint of the economic aspects of their business endeavours, but also captured facets related to the socio-cultural, family, and personal spheres of the female digital entrepreneurs. The enterprises of the participants were registered and therefore formed part of the formal sector, and none of the women started their business due to a lack of employment and 27% of them are current employees of the public sector. In this regard, the results of empowerment are closely related to issues of agency, resources, and achievements. Therefore, the following categorised results indicate an approach to entrepreneurial empowerment through digital technologies as the participants became digital entrepreneurs and functioned as such in the entrepreneurial environment.

5.3.1 Agency and Changing Management Styles

The analysis of the data indicates that the increased use of digital technologies (such as mobile phones, internet, WhatsApp, social media platforms, and emails) in everyday entrepreneurship lowered the barriers to sell products and services directly to consumers, provided a route to even develop and participate in more than one business venture, and generally enhanced opportunities to participate in eBusiness. Considering that empowerment has intrinsic and extrinsic features, the agency of the female entrepreneurs is shown in operating and expanding the business ventures. The narratives of Astra (FE#14) and Sumitra (FE#26) underscored the processes employed to change their business operations:

A lot of people say you get into business to have freedom and do whatever you want and to work whenever you want...At the start, I worked extremely long hours because I had a lot of stuff to do...Now, from using the technologies I am more efficient, and I have a competitive edge. I do not work long hours anymore. For instance, with my website, Instagram and Facebook, I do a lot of search engine optimisation. These have helped me to expand my operations as I can connect with potential clients and obtain a large number of clients overseas (FE#14 - Moderate).

We use social networks for driving and promoting the business...and also for the education of others. We push digital because we work with clients all over the world - from London to South Korea and Qatar. Our students are from all over the world too - Taiwan, China, Australia, Africa. So, we drive everything to be digital (FE#26 - Extreme).

Additionally, for the female entrepreneurs, especially those who own businesses over a longer period of 5 years and more, digital technologies provided expanded opportunities in respect of their personal growth and development through e-learning. With better information sourcing and use at their fingertips, there are more opportunities for the participants to improve their investment decision making capacities, and to navigate the labour market. In comparison to traditional means, this finding resonates with the empowerment dimension of financial independence and economic security, which in turn generates impacts of empowering others for improved income generation and higher self-confidence. Most of the female digital entrepreneurs indicated how the technologies bolstered them to use their talents and skills to transform their hobbies into a business venture. By taking advantage of opportunities to pursue their dreams, the participants' improved sense of agency was drawn not only from undertaking a remunerative activity, but also by the desire to make an impact on the lives of others. This higher level of empowerment among the female digital entrepreneurs is characterised in their perception of the broader set of options from which to choose in operating their business ventures and contributing to improving the quality of life for themselves and others. For instance, Kasha (FE#28) who provides Business Support services and Anna (FE#20) who operates a Tech Hub recounted:

On an island, remoteness affects your business. The infrastructure is a challenge...If you want to engage with people physically, the roads are not good. So, you have to go virtually...My success is just being able to see somebody who is a first-generation businessperson and help him/her to navigate the challenges associated with being a first generation entrepreneur...Seeing growth from less than \$100 to over \$100,000 in the bank in a year, was just one of the high points of my business (FE#28 - Moderate).

Based on the information I obtained from interviews with digital entrepreneurs, I developed a 6-pronged model of the digital entrepreneurship ecosystem of the Caribbean including policy, market, culture, finance, infrastructure and people...So I have developed a comprehensive training programme curriculum for someone to learn to become either an associate social media editor, a cloud engineer, a software engineer, a web developer... and

in end there are options for internship and for employment as staff or Consultant (FE#20 - Extreme).

Although digital technologies (particularly Artificial Intelligence tools for marketing and business development) afford agility and creativity, the findings revealed that the female entrepreneurs are deliberate in exercising their agency. In post-colonial societies like those of the Caribbean region, it is likely that the female digital entrepreneurs would be heavily influenced by what others in the Global North are doing, given their strong entrepreneurial culture. Also, through social media, customers can easily influence the decision-making power of the entrepreneurs. However, the participants indicated they were able to exercise decision making powers in keeping with the purpose of establishing their businesses and therefore exercise their independence to be held accountable for the outcomes of their said decisions. Indeed, this demonstrates their empowerment through agency. Hence, they seem to maintain and reclaim their agency by negotiating their contexts and facilitating their empowerment to “do context” as they seek to maintain control in decision making processes. This is demonstrated from the narratives of Nisha (FE#9), Henrietta (FE#17), Nancy (FE#19), and Cherise (FE#29):

Technology is one of the ways we communicate with people...I have a Facebook page and a website...I don't want to necessarily go after every single tool at every point. I do not want to have all this technology and then the technology is much bigger than the actual production...it is a lot more than I need (FE#9 - Light).

As a Podcaster, I am big into writing. So ChatGPT is my latest assistance...I just tell ChatGPT what I want to do, and it does it for me. But I need to look it over, edit it to suit my reality...It is really a journey. I use the digital aspects to fit into whatever I do in the business (FE#17 - Extreme).

I know it's a dance because some things are seasonal. Digital allows us to be agile...My platform is an asset that I use to support my clients. That's one of the beauty of why technology was created and why so much of it is open source. But when you use it, you have to figure out how to add your creativity on top of it. This literally changes your life in the business arena (FE#19 - Extreme).

ChatGPT is a great tool, but also a dangerous tool. You have to be careful. It is a very specific tool. You have to tell ChatGPT exactly what you want in order to get proper information. You can take the suggestions and then build out your post from them (FE#29 - Moderate).

Notwithstanding, it is important to highlight that the data analysed revealed some contradiction in how the agency dimension of empowerment is perceived by others including family members. The findings show that while the digital entrepreneurship experience gave the female entrepreneurs the possibility of more options to choose their entrepreneurship pathway, to control their economic resources and their visibility in the public sphere, and to improve their self-confidence, some traditional assumptions of agency persist. For example, Raquel (FE#8) and Donna (FE#22) shared their experiences when they stated:

I literally heard my mother on the phone telling my aunt that I am unemployed...all because I am working for myself and there is no physical place to meet customers face to face (FE#8 - Moderate).

Prior to having the website, everybody would call me or message me and I would literally have to be checking on available space [for appointments from clients] even if I am driving at the same time...The website has an integrated booking aspect. So, converting people from messaging me to booking online was like hell for people to understand. But it is more efficient for everyone (FE#22 - Light).

The findings showed that the link between the agency of the participants and digital entrepreneurship is not unidirectional. While on one hand the use of the technologies is regarded as an effective strategy to drive agency and achieve empowerment, on the other hand the agency is shown as an antecedent where the ability of the female entrepreneurs to use the technologies affects the business processes and outcomes. Additionally, the use of digital technologies highlighted that normative assumptions reproduce gender inequalities across entrepreneurship and the social spheres of the participants.

5.3.2 Unravelling Diverse Perspectives on Gender Equality

The findings indicate improvements among female entrepreneurs interviewed in penetrating social class of the upper working class by being able to connect and network directly and easily with influential business professionals in the entrepreneurial ecosystem. In using various social media sites (Twitter, YouTube, LinkedIn, Facebook, Instagram) as business platforms to engage and interact with business professionals (women and men), the participants were able to engage directly with persons with high influence in international business environment who would have

been otherwise difficult to reach. Such connections were mostly done via LinkedIn, Twitter, Instagram, and Facebook. This is summed up in the narratives given by Henrietta (FE#17) and Sumitra (FE#26)

The digital world levelled the playing field for me as I am able to connect and engage with persons like Richard Branson and Seth Golding of this world.... there is no need to waste time and try to hang out together. Once mutual value-added business interest is established online, the use of these technologies gave me the access and breakthrough that I needed (FE#17 - Extreme).

As a female entrepreneur who owns and operates a SME, I have done business with Lays, Grace Kennedy, Digicel etc. [large regional and international business]. Although it's hard, with the online bidding system, we are able to bid successfully for projects (FE#26 - Extreme).

The participants had mixed perspectives on work-life balance through digital entrepreneurship. For instance, some participants point to improved work-life balance and offerings of flexibility to work remotely; inclusive of working from home. Those female entrepreneurs without children, spoke of their use of digital technologies in allowing them greater freedom and flexibility to work from anywhere at any time. Even for the female entrepreneurs with children, the absence of temporal-spatial constraints, as afforded through digital technologies, enabled them to have more time to engage in other activities which they characterised as family and childcare responsibilities, self-care (health and wellness), community projects for women and girls, mentoring online, and “me time”. Given that digital technologies reduce the need for “brick and mortar” establishments, most of the businesses operate entirely or a segment thereof from the home setting. Hence, the exercise of agency has an added layer of flexibility characterised by a higher degree of personal autonomy in the operations. Extreme positions are captured by a married participant, Henrietta (FE#17) who provides care for two young family members (under 5 years old), and a married entrepreneur without children, Raquel (FE#8) when they shared on their experiences of a typical workday in the digital entrepreneurial space:

Through the use of these technologies, I am able to connect with a group of women from across the globe early in the morning to pray online, ...because I have flexible work hours, I am also able to fit in going to the gym, able to drop off and pick up my nieces from kindergarten school, put in hours of work...and sometimes I even have time to go to the

beach in the evening...This also allows me to have a no-work/day off during the week where I disconnect from everything digital (FE#17 – Extreme).

There is no way I can do this business being a mother. The business is the kids...even with the technology, I simply respect all “mom-preneurs” (FE#8 - Moderate).

Further, the findings showed that all of the participants with childcare responsibilities (regardless of their marital status) faced some challenges of reconciling the tension of having the workspace for their businesses at home. Contradictions caused by an intensification of responsibilities emerge rather than a confluence of rhythm intelligence which synchronises business and household rhythms. Invariably, the context of the domestic setting provides evidence that the female digital entrepreneurs who do not have family support, opted to scale back or temporarily halt their business operations to ensure they spend quality time with their family members, especially their children. The following narrative from Diana (FE#3) is an example of this tension:

I therefore conclude that whether it is a single parent home or not, as long as the mother owns or runs a business, she is sacrificing time that the children need...Even though I operate my business at home, I am not at home as I am busy working. So, while my business blossomed with the use of digital technologies during COVID, it is now on pause.... Believe it or not, I think my children are happier that I am more present (FE#3 - Light).

As the female entrepreneurs carried out their operations with the integration of digital technologies, they shared experiences of being under scrutiny in the online space as instances of normativity appeared to supersede nature in some of the implicit signposts. Even in the face of experiencing backlash with opinions on social media because they are women, some of the female entrepreneurs strive for authenticity in their embodiment and shared on the importance of their positioning and how they are able to maintain eclectic dress-codes, carry natural hair styles, wear no make-up, and are not pressured even if from their physical appearance, they “bulged in the middle”. In this regard, the accounts of participants Loverly (FE#2) and Nancy (FE#19) are captured in the following narratives:

“[Online], women are criticised and are required to have perfect figures in my field of health and fitness. Whereas there are several male fitness instructors and football coaches who do not have a six-pack. They are not judged the same way. Subjective norms from society are used as the yardstick for us female entrepreneurs (FE#2 - Light).

Online, I am fully who I need to be... I'm not trying to pretend to be younger. It's just about presenting myself in a way that I feel more comfortable, and that, I think, is going to be supportive of the message rather than distracting from it (FE#1 - Light).

Hence, while the access to digital technologies and the improved technical skills appear to translate to improved empowerment for the female entrepreneurs, they were able to exercise their agency to forge meaningful relationships with the tools by their efforts to ensure alignment with business purpose, performance and achievement. Notwithstanding this enhanced empowerment, the participants highlighted gender biases within the online entrepreneurial environment which they counteract with a combination of innate self-confidence and self-efficacy garnered from the use of the technology in bolstering their business ventures.

5.3.3 Business Performance Beyond Financial Benefits

In considering that the digital space is generally portrayed as requiring a low level of resources for the creation and expansion of businesses and thereby resonates with the concept of digital affordances, the findings on the lived experiences of the participants also highlighted the existence of digital poverty among themselves and other female entrepreneurs. Notwithstanding, the tacit aspects of the entrepreneurial resources (business experience and industry contacts) provide the means for the female entrepreneurs to realise new experiences and opportunities.

Yet, the empirical evidence signals that the relative importance of acquiring such resources through the use of digital technologies varied mostly according to the types of business/sector, and lesser according to the social class of the female entrepreneurs. This is underscored by the fact that all the female digital entrepreneurs interviewed have a tertiary education - at least a diploma or first degree and at most a Doctorate degree - but they all face the challenge of having limited financial capital to expand their businesses. The findings showed that over time the female digital entrepreneurs were intentional, without being apologetic, in setting boundaries to balance their daily work-life schedules as well as their physical embodiment. From the narratives, the participants showed overt and active attempts to resolve their identities and boundaries while also

maintaining their agency and demonstrating their empowerment. The accounts of Henrietta (FE#17), Jenny (FE#23), and Sabby (FE#24) underscored this:

I learnt as I went along...I have invested in learning to listen to my body. So now, I have a day off for myself every week with no work, no technological gadgets and I just do what I want (FE#17 - Extreme).

I've set hours to reflect on what is important to me, which isn't just about money...I am not accessible all the time (FE#23 - Extreme).

The technology itself works very well because it brings connectivity without you having to physically go out and put your energy out there. In terms of always having to be connected, I think there's a choice. I set boundaries for myself. So, like on my days off, I don't really do anything associated with work anymore...I don't go on social media unless it's about work. Because I feel like sometimes social media can have a negative impact on your mental health if it's not used correctly (FE#24 - Light).

Further, the fact that some of the female digital entrepreneurs work part-time in their businesses, seems to resonate with the notion that the desire for a fixed income in another entity can be perceived as a deficiency in the level of their empowerment. Yet, the findings reveal that digital entrepreneurship is characteristic of a lack of formal structures in place to guide working in such spaces that facilitates and impacts this new and emerging feature of female entrepreneurship. In this context, the participants expressed “feelings of being overwhelmed, being exhausted and even burnt-out, wearing different hats to perform different multiple functions, and being intimidated” (FE#2, 6, 15, 16, 17, 18, 22, 23) as a result of their seeking to be available to respond and to meet the needs of customers and other business partners in the digital space. Examples of the narratives shared by the participants are depicted by the statements of Nicola (FE#16) and Henrietta (FE#17):

My work-life boundary skills are deplorable...a 12–15-hour workday is a regular thing, which is bad for your health, bad for your mental health...At the end of the day, there is definitely that FOMO (Fear of Missing Out) factor in the digital space (FE#16 - Extreme).

I was so accessible, I never shut down. I just kept going continuously until I burnt out...I've had to learn to set boundaries, to define eating time, exercise time, and make time for family, myself, which before was all a blur. Because it is so easy to do when you work from home, and worse yet when you work digitally/virtually (FE#17 - Extreme).

In summary, the findings point to a paradox whereby the offerings and promises of digital entrepreneurship to female entrepreneurs are numerous in the opportunities for enhanced empowerment, while at the same time they are faced with constraints of digital poverty in having to negotiate their time and boundaries in carrying out their business operations. Hence, the experiences reflect abundance and poverty being juxtaposed within the digital entrepreneurial environment.

5.4 Entrepreneurial Leadership and Symbolic Management

Considering the heterogeneity of female entrepreneurial leadership experiences which range from undertaking tasks that are transactional to transformational, emerging from the analysis of the accounts of the participants there are paradoxes and nuances in relation to normative orientations of leadership that are mostly skewed towards masculine images of control, objectivity, competitiveness and rationality (Dean and Ford, 2017). Invariably, rather than emphasising the economic growth aspects as the *raison d'être* for integrating digital technologies in their business operations, the female entrepreneurs focused on other embedded non-monetary aspects such as their commitment to driving creativity, innovation and sustainability. Therefore, beyond an exploration of the individual entrepreneurial dynamics, together with the traditional tendency of focusing on a hegemonic masculine leadership model, the findings captured the voices and insights of the meanings from the female digital entrepreneurs in relation to their: (a) entrepreneurial spirit to drive the passion for the business endeavour, (b) proclivity to embrace change in order to make a difference in the lives of others, and (c) awareness of behaviours in valorising masculine practices.

5.4.1 Entrepreneurial Spirit and Passion

Several participants exude characteristics of what is considered an entrepreneurial spirit through their narratives. They gave accounts of their curiosity and their willingness to explore and try new things in their business ventures within the digital entrepreneurial space. The narrative accounts of the participants reveal how their passion influences and shapes the processes and outcomes of their

entrepreneurial leadership. The passion of Henrietta (FE#17) and Sumitra (FE#26) is a key source of their enthusiasm and self-confidence of their creativity which is translated into their leadership achievements with their product and services. For instance, Henrietta's passion for continuous creativity in her production of successful podcasts, which is evident in her confidence and pride in her accomplishments, particularly when she had little support or encouragement from traditional entrepreneurs. Likewise, Sumitra described how her passion has been the cornerstone of her energy and confidence which in turn enabled her to succeed despite the plethora of challenges in establishing her digital business venture. The following statements capture and exemplify this when they stated:

I dub myself and I claim the crown of “the [national] Podcast Queen” as I see myself in this space as a “trend setter”.... So many people are after me now and other people are doing Podcast simply because I was an Evangelist for it. Even if COVID-19 hastened it a little, I have set the trend for this (FE#17 - Extreme).

We tried a lot of tools in the marketing space and having a tech background helped me because I'm able to adapt and learn tools very quickly without a steep learning curve....But having a business or being an entrepreneur is not an easy thing. It's not! It's definitely not for the weak at heart. You have to have a lot of perseverance. You have to have a certain amount of drive (FE#26 - Extreme).

Further, the findings indicate that the participants' passions were key to advancing their business ventures and was a principal driver of their entrepreneurial leadership. Invariably, the passion of the participants mushroomed with digital technologies and equipped the female entrepreneurs to broaden and bolster their entrepreneurial leadership to go beyond the self. The use of digital technologies supported the ability of the participants to communicate effectively, which is important for sharing their passion with collaborators and other stakeholders while listening to their feedback in what they have to say. Loverly (FE#2) who owns and operates a fitness and nutrition enterprise and Raquel (FE#8) who owns and runs an online retail market enterprise commented on this in their narratives:

I am passionate and interested in nutrition and fitness. I am also passionate about helping others get results....My passion focuses mainly on helping other women....I always had an interest in entrepreneurship from a small child...More than when we started, I now do classes and advertise through social media (FE#2 - Light).

We are passionate about local food, local agriculture, as well as the health and convenience of our customers. So basically, once the products are healthy and convenient to access, that's what we focus on (FE#8 - Moderate).

Moreover, as the female entrepreneurs were afforded new opportunities through digital technologies, the findings show that they utilised their passion positively to balance the focus on making a profit and addressing a societal problem or challenge. For instance, Kasha (FE#28) showed how she is innovative in the way she provided business support services to a wide cross-section of clients with emerging SMEs by making sacrifices. This is captured in her statement:

My business is focused on those whom I know don't have a lot of money...I figured if I worked virtually and I didn't have a physical office; I could save on costs. This meant I could offer a lower price point – not necessarily to make more money but to make the services affordable. I believe everybody should have access to quality, affordable business support services if they want to grow a strong business. So for me, technology was always a big deal for my business model. Of course, post COVID things blew up [mushroomed]. Now we have a lot more ways of how we can do things (FE#28 - Moderate).

Evidence of applying their passion to influence their entrepreneurial leadership, was demonstrated in the efforts of the participants in integrating innovation and decisiveness in their business endeavours. In this regard, Susan (FE#13) shared this story of her business experience which transitioned from the provision of only face to face training for Science, Technology, Engineering and Mathematics (STEM) and digital skills to now offer online training programmes, while Eunice (FE#27) explained her approach to using a mix of technologies in her operations.

You know when I started off as a business owner, because of my passion to help improve STEM skills especially for girls in my country, my first thought was not to run down the money. Although literally this is what I need to do...that's the only way the business could sustain itself. I now seek to develop the right model so that I can offer sustainable STEM packages (FE#13 - Extreme).

I always had that entrepreneurship spirit and drive to do something different because of what happened to [names of family members]...now I use nanotechnology to create my product.... and use digital technologies for the business processes and operations (FE#27 - Extreme).

During the interviews, the female entrepreneurs placed emphasis on the issue of gender when they considered the combined impact with their use of these technologies. That is, as female digital entrepreneurs, they are mindful that the barriers and challenges they confront highlight the existing

gender gaps (off/online) in entrepreneurship and the digital environment respectively. Moreover, the relational and collaborative principles applied by the participants signal a nuanced entrepreneurial leadership that is echoed by participants Arlene (FE#6) and Raquel (FE#8) whose businesses are completely driven by technology when they commented:

I always strive to use the technologies without losing my humanity, I remain connected to self....as a woman I am not keen on competition as I am on learning to improve my business and purpose (FE#6 - Extreme).

Anybody who engages with our brand has to have an understanding of what we stand for...And it is not just about that digital persona; it's about how you are on a day-to-day basis (FE#8) – Moderate).

It is important to highlight that the influence of passion among the participants does not always project positively for the entrepreneurial leadership of the women. For instance, they explained that passion can sometimes stymie openness to feedback and ideas, as well as encourage an inclination towards individualism and profit maximization in relation to entrepreneurial leadership. This is emphasised by Nicola (FE#16) who surmised that the ultimate goal of her business venture is to achieve entrepreneurial growth *as an end* rather than *as a means to an end*.

Economic empowerment is a critical game changer for women. I specify economic empowerment because that's what I'm about...not social empowerment, not reproductive health empowerment...I'm not saying these are not important but with the recognition that economic empowerment is about positioning yourself...in terms of your economic independence....I strongly believe that technology and the application of technology is the second part of the equation (FE#16 - Extreme).

In reflecting on this example, it seems that while financial success is emphasised as playing the role of an enabler to further innovate and grow the entrepreneurial activities, the findings also show that passion can be an impediment that negatively impacts the growth of digital business ventures. This was described by some of the participants who were particularly affected by criticisms or negative feedback online. In hindsight, they surmised that the online modality does not always augur well for dialogue, as opposing opinions can be interpreted as a personal attack or an attack on the business. Moreover, the influence of passion is found to be controversial as participants expressed concerns that it could also essentialise the leadership aspects of female entrepreneurship. In this regard, the accounts of Raquel (FE#8) and Kandia (FE#18) underscored their experience

towards transforming their respective business endeavours through the adoption and use of digital technologies.

In the earlies, I think my challenge as an entrepreneur was criticism. I held this business so dear that if someone said something negative, I took it personally. And then I realised this is just customer feedback, and it is a way to improve. I tell people, to love your business but do not fall in love with it, because when you're in love, you don't always see the flaws (FE#8 - Moderate).

For me, passion is not enough when you're an entrepreneur. And that's something that nobody teaches you. Passion is not enough because you have to have the structure and a lot of things have to be in place for that dream to stay alive (FE#18 – Extreme).

As shown in the foregoing, in this section, the participants revealed that being driven by entrepreneurial passion and spirit, digital technologies yet provide another layer to either complement or negatively impact on the leadership of female entrepreneurs in transforming their business endeavors. The gendered aspects of entrepreneurial leadership are characterised by their efforts in shaping their business processes instead of being focused on the personal traits of the participants.

5.4.2 Making a Difference with a Difference: Embracing Change

The findings from the participants reveal that the thrust of their business venture is to make a difference for their communities, their customers, and their staff - for those who had employees. This is interesting, as despite the fact that entrepreneurship in general demands balancing personal and career time and goals, they were keen and seemed impelled to respond to collective sentiments and sensibilities.

The reference to their communities includes the local entrepreneurial communities and the societies in general. The participants highlighted the impetus afforded by the use of technology to exploit their desires and natural caring tendencies to provide learning opportunities through e-mentoring programmes for women and girls, online skills training for disenfranchised women and for sharing their stories (successes and failures) to inspire others. Some even explained that their entrepreneurial ventures are not just utilising digital Apps and Platforms but involved in training

women and girls in coding, cyber security to expand the digital footprint of female entrepreneurs in the Caribbean region. The findings also indicate that the advancement in digital technologies – particularly infrastructure and tools – provides an opportunity for the female entrepreneurs to access alternative funding and ideations through crowdfunding and crowd-sourcing platforms to support such venture aimed at community groups. This suggest that with the use of technologies, challenges faced in accessing traditional funding sources can be overcome to give women an opportunity to exercise their entrepreneurial leadership. Of significance is the fact that the onset of increased opportunities for formal and informal engagement among female entrepreneurs positively influences the development of female entrepreneurial leadership. The following narratives from Janet (FE#11) and Brandy (FE#25) are some examples which portray the nature of the leadership harnessed within the communities:

In the midst of me thinking of myself as jobless and what am I going to do during the pandemic...there was a group who was also jobless because they could not sell their produce, they could not do anything...So, I decided to dust off my recipe books and create unique value-added products for sale online using the [said] local agriculture products. I was thinking I could use the technology for marketing and sales. Also, I thought of creating jobs not just for myself but for the individuals within the community. Now, the technology and my brand go hand in hand....it is really instrumental in getting the product to where it is. I have customers in Florida ordering my stuff (FE#11 - Moderate).

We saw gaps in the opportunities that were out there for women in business, not just young women but mature women. Because we had a wide network, we had access to some knowledge and good practices that we could share and help them [female entrepreneurs] to learn in a different way. We focused on some areas that not many tend to focus on...We wanted them to understand they could work together and complement each other without animosity in the competition...not the capitalistic approach. We wanted to set up a mindset legacy (FE#25 - Moderate).

Aspects of entrepreneurial leadership which demonstrated making a difference for customers were evident in participants being attuned to their demands and anticipating their needs for new services and products. Based on the data analytics captured by the female entrepreneurs, through the use of digital technologies, the participants spoke of being able to more accurately customise their services and products to their customers (including those with special needs), as well as provide delivery services at home or work. Some of the participants engaged in continuous Research and Development (R&D), obtained data from online algorithms, online databases, Google searches

among others. The thrust towards making a difference in the communities is expressed in the following example of the narrative of Eunice (FE#27):

For the business to succeed, you have to have a good [product]. Most customers also want to know your story. To be honest, at first, I was not so much into the different technologies. With a website, online platforms such as Zoom, and Applications such as TikTok, Instagram, Facebook, I can do a demo of my product and also share my story and those of other customers using the product to incentivise other people who face similar health issues. Many of my customers are overseas...even if you are an introvert like me, through these technologies you can easily grow your business organically (FE#27 - Extreme).

Interestingly, there were mixed sentiments among the participants towards the use of social media to review trends from consumer databases and other digital records. In this regard, they noted that the dynamics of the new business environment require behaviours and actions of entrepreneurs that are in keeping with learning organisations which feature a culture of knowledge creation and continuous learning. In the same vein, the participants signaled their awareness of the growth and influence of social media in necessitating alertness related to the counter-intuitive aspects where the “control of power” can be easily relinquished to the power of the consumer’s feedback based on trends which can be transient and risky. Semblance of entrepreneurial leadership in this regard was highlighted by Raquel (FE#8), Nancy (FE#19) and Sabby (FE#24) as they recounted their experiences.

People are not loyal to a thing if they do not feel connected to it, or if they do not feel they can grow with the business...So, it is not just the offering, it is the service. I continuously strive to improve my online service to sell my product (FE#8 - Moderate).

Our media platforms are assets we leverage to support whatever our customers want...Yet one of the biggest challenges we face to leverage this is mindset...This is because in the Caribbean we grew up being told to keep family affairs at home and keep personal stuff to yourself. Since I do storytelling, this mindset is a major barrier I face....So I help women work through what in their story is valid...I act as a facilitator to support them in finding solutions during the entrepreneurial journey (FE#19 - Extreme).

Your clients are the ones who help you pay your bills and help you to survive. So, their opinions matter. You basically work for them....But I set boundaries because we like to say that the customer is always right. But that is not always true. Of course, you want to respond to the needs of your clients but that doesn’t mean that you should go against what you

believe....I always like to keep my reputation and dignity intact....it's not about doing things just to make money (FE#24 - Light).

For making a difference for the staff, the research participants provided information on the online training opportunities for staff, options for remote working, and more regular online connection to give support and share information on a timely basis. An indicator of this is translated in the experience shared by Nicola (FE#16) in her account:

This is really my constant messaging to the team. This [training] is not only an investment in you as we are investing in you so you can in turn invest in others. It's about paying forward, otherwise we're not going to make this change alone (FE#16 - Extreme).

Additionally, the findings also point to an emerging or existing female entrepreneurship management style of hiring other women. This has implications for challenging traditional gendered norms for working hours and family and care responsibilities, particularly for the female employees. For instance, the positive effects of the entrepreneurial leadership in creating employment are not automatic, as negative effects can be easily propagated through systemic gendered socio-cultural conditions in the local context. Hence, this suggests the leadership roles of these female digital entrepreneurs need to be bolstered by additional catalytic interventions to avoid cumulative societal challenges.

5.4.3 Emic and Etic Perspectives of Leadership Styles

Even while being founders, owners and managers of their business entities, the narratives of the participants shed light on their interpretations of their lived experiences as well as the perceptions of other stakeholders in the digital business environment. Loverly (FE#2), Kimberlee (FE#4) and Rudelle (FE#5) emphasised this when they stated:

People don't take you seriously as a female; especially in fitness....That perception comes from other males and other businesses that are predominantly led or owned by other males. Hence, I have capitalised on this and focus on women only (FE#2 - Light).

Being a professional in a male dominated field was very hard for me to always prove that I was just as good as they are or even better (FE#4 - Extreme).

As an entrepreneur, it takes a lot to perform your duties as a woman....For instance, with my monthly menstrual cycle, I just can't go to the business as I am exhausted...I think women have to be aware and organise our work around cycles each month (FE#5 - Moderate).

Further, the narratives of the participants suggested they gave critical reflection to some of the dominant entrepreneurial leadership styles that exist overtly or subliminally in their countries in the Caribbean and globally. In response to the promotion of digital entrepreneurship among women to effect gender equality through improved entrepreneurial leadership, the perspectives of Kimberlee (FE#4) and Susan (FE#13) are instructive:

It is really difficult to get funding here. I am still having a lot of challenges in this area even though I have proven myself financially....Sadly, I had to utilise my husband's credit-worthiness to get a loan as he is fully employed thankfully (FE#4 - Extreme).

I would not say we need more [female] entrepreneurs. Instead, I would say we need better entrepreneurs...What we need is a few really good entrepreneurs in an ecosystem that has really strong research and development. They [Female entrepreneurs] need to be given the skills that they need and the ecosystem that they need to survive (FE#13 - Extreme).

Hence, as the participants described their lived experiences in how the technologies seemed to offer opportunities for gender equality in the entrepreneurial space, they were also mindful to temper these accounts with practical challenges of sexism in the online space, while performing multiple roles (in terms of work, wife, and mother) within the domestic realm, and other structural conditions that are rife with gender stereotyping and discrimination. The sensibilities of participants Cherise (FE#29) and Susan (FE#13) help to shed light on the nuances of how their entrepreneurial leadership should be problematised more broadly and analysed within the socio-cultural environment in their statements.

I think we've underestimated females for a long time. We've left females to think that if they're in the office, they're fine, and if they're at home, they're okay. But when we take up the mantel and we are out there doing it [entrepreneurship], there are times when I feel like superwomen. And then I have to stop and come off the imposter roller coaster (FE#29 - Moderate)

To obtain information on upcoming opportunities, people think of the male entrepreneurs as "the Boy's Club". But I just want people to understand that the Boy's Club is not formed out

of malicious needs. It just happens naturally. Because this happens naturally, I think what women need to recognise is that we need to artificially make stuff happened for us (FE#13 - Extreme)

Further, the accounts of the participants suggest further contradictions with perspectives that are aligned to the economic high-growth discourse that is generally linked to glass ceiling characteristics of entrepreneurial leadership. In some instances, the findings of the lived experiences of the participants revealed the “dark side” of digital technologies given ambiguities and tensions related to entrepreneurial leadership. For instance, the participants expressed concerns about their safety (physical and online) as business managers, given the real and growing threats of cybersecurity risks and protection of personal data. Further, the perceptions shared by the participants on their identities as female digital entrepreneurs reflected a trivialisaton and obfuscation of their leadership role as women. The following statements from Linda (FE#7), Susan (FE#13), and Nancy (FE#19) are expressive of the entanglement of female entrepreneurship and associated hegemonic masculinity:

Something they don't talk about is how among female digital entrepreneurs you pick up stalkers online....I use social media (such as Facebook marketplace) to advertise and to find restaurants and caterers to sell my products to. For my personal safety with one-on-one follow-up consultations and negotiations, I would give them my husband's mobile number rather than mine...My husband's number is registered in my name. But let them talk to him. If they're serious about the product, they'll still buy it (FE#7 - Light).

We use that word “entrepreneur” lightly. I say entrepreneur, because it sounds cool to say but I am a small business owner. If you look at what the definition of an entrepreneur is, I will tell you I'm a small business and I think that is what it should be (FE#13 - Extreme).

I think that there is a war that women have - especially in the digital space – that is, how do I show up so that I look successful, but I do not alienate others [customers and other female entrepreneurs]...Telling me you're a successful entrepreneur and wearing jeans and sneakers does not make sense. You don't look it. It doesn't matter that Mark Zuckerberg and Steve Jobs showed up in the same white T-Shirt every day. However, in our culture you don't do that. You have to look like success. I suppose creating our own authentic self is saying [to society] “I am a genius and not a T-Shirt girl” (FE#19 - Extreme).

In summary, the narratives describe the way in which digital technologies affect the leadership of the female entrepreneurs and vice-versa. In some instances, the notions of entrepreneurial leadership of the participants were aligned with prevailing masculine perceptions, and in other

instances there were contradictory viewpoints. The application of gendered lens, therefore, shed light on how entrepreneurial leaderships of female digital entrepreneurs are understood. Moreover, the advent of digitisation has also impacted how the digital entrepreneurs navigate the entrepreneurial landscape as women, leading to emerging nuances in their entrepreneurial context and dynamic digital environment.

5.5 Entrepreneurial Context: Nuances

The insights and perspectives drawn from the participants have not only highlighted the richness derived from diverse perspectives, but also the scope for better understanding the complexity of context in entrepreneurship (Baker and Welter, 2020; McAdam and Cunningham, 2021; Welter and Baker, 2021; Henry and Lewis, 2023). By applying the dimensions of context as elaborated by Zahra, Wright and Abdelgawad (2014), the analysis of the findings focuses on how the interplay between female entrepreneurship and digital technologies impacted the temporal, industry and market, spatial and social contexts, (Zahra, Wright and Abdelgawad, 2014) and the integration of the institutional and entrepreneurial behaviour aspects of contexts of the female digital entrepreneurs in the Caribbean.

5.5.1 Temporal Context

The findings encapsulated the temporal dimensions of the participants' contexts as described by Albert Einstein and Henri Bergson in 1922 who posited there are two aspects of time - clock time and lived time (Tsoukas and Chia, 2002). In paying attention to narratives to understand issues surrounding the point at which they decided to become an entrepreneur, the participants' described scenarios that were based primarily on opportunity and a few are based on necessity. For instance, except for one participant who was frustrated in a routine job in the public service, the participants of the study explained that the timing of the launch of their business ventures coincided with the following reasons: realisation of a childhood dream, seizing an opportunity where there was a demand gap, maintaining a family business tradition, and being encouraged by family and friends.

Similarly, the participants explained that the significant global digital disruptions and transformation, had varying influences on their pace and strategic actions of the female entrepreneurs inclusive of starting, expanding, adapting, and repositioning, and protecting their businesses and operations. Therefore, the changes in the industry clock time for businesses across the globe, had a ripple effect on the dynamics of their local contexts. Although the participants commented on the COVID-19 pandemic as a point of inflection for the acceleration and integration of the use digital technologies in their business processes, the results revealed that the clock time influenced the nature and scope of the digital transformation, while aspects of the technologies affected the organisational structure, operations, and learning of their business ventures. The accounts of Katie (FE#15) and Lovely (FE#2) provide some interesting insights:

Having started in 2014, it was only in 2020 I developed a website ...this has definitely expanded my reach and brought more visibility. It has also enabled me to change the business focus from just a baking and catering business to now focus more on online tutoring in baking (FE#15 -Moderate).

When I started my fitness business in 2016, all of my services were done in person, but since COVID, I had to offer online training through Zoom and videos on social media. Also with the online training, my customers have expanded to also include men (FE#2 - Light).

It is important to highlight that in the case of Lovely (FE#2), this experience seemed to challenge the cultural norm of men being characterised as strong compared to women. Hence, she surmised that the decision by men to be trained on their physical health and wellness by a woman – who is dubbed by society as “the weaker sex” – is considered to be incongruent with socio-cultural norms of masculine heroism. Moreover, Lovely (FE#2) explained that with the technologies, she now has the option of offering training sessions online which is opening avenues and breaking down socio-cultural barriers as she recently enrolled more male trainees, notwithstanding their preferences and desires to attend one-on-one online sessions. Evidence of the introduction and use of technologies resulting in innovative strategic choices that ultimately led to the evolution of the businesses owned and managed by the female entrepreneurs was also manifested in the two temporal dimensions of context. This is portrayed by Cherise (FE#29) in her statement:

As an entrepreneur, being connected is critical whether it is on Instagram, Facebook or just having an online presence on Google...Your online presence is critical for the growth of your business (FE#29 - Moderate).

Further, the findings revealed that the different levels of government interests and the socio-economic importance placed on the different sectors associated with their business, gave rise to diverse behaviours in the entrepreneurial orientation of the participants in terms of their degree of proactiveness and the scope of the futurity of their decisions on the use of technologies in their business endeavours. Another important temporal dimension highlighted by the participants was that of the different perspectives held on the learnings derived from their previous successes and failures, their knowledge sharing, and their decision-making styles (cognitive and emotional attachments). Recognition is also given to what seemed to be the deliberate efforts of the participants to make sense of their experiences and to distil and to integrate the insights into new programmes and businesses or even change aspirations. For instance, Jenny (FE#23), who operates fully online described her experience in managing her business operations in the digital environment:

On the business social media pages, I've had to overcome fears based on all my cybersecurity training...I've had to overcome my fear of unknown people wanting to be my friend. Now on the business pages you accept people because obviously the more people who are in front of the content, the better the "clickability" through the website....Strangely enough I get more spam on the business arena that I do on my personal account (FE#23 - Extreme).

Hence, in the context of temporal time, the technologies facilitate improvements in general entrepreneurship factors while also highlight inherent gender ideologies in the business environment. The next sub-theme examines the influence of the market and industry context on the female digital entrepreneurs.

5.5.2 Market and Industry Context

The dynamics of the different elements of the market and industry contexts in this digital era, differentially influenced the female digital entrepreneurs in relation to changes in resources and skills needed for their operations. This is recounted in their various postures adopted towards the technologies in reshaping their marketing strategies and branding through the creative use of social media, instant and direct messaging, videos and podcasts, and flyers. Further, depending on the type of the product or service, the potential customers being targeted and the timing, the results

show that the participants used different digital tools to optimise their benefits. The narratives of Diana (FE#3) and Sumitra (FE#26) provide some useful insights into their experience in navigating the dynamics of the market context:

I actually did some training and I did a number of social media and online courses, learning how to hashtag for Facebook and Instagram because they are now two different markets. Facebook is for the older audience where people would read more things, and Instagram is for the younger audience where they are just looking at the photos (FE#3 - Light).

The digital tools may not necessarily work the way they're supposed to. So that's where the aggregation of frustration comes in. You spend a lot of time trying to set up tools and then later realising it's not working. You have to learn to set up and then test them in your business to make sure that they are the best tools for what you need...What I strive on is finding better ways to make our business run smoother, whether it's getting a tool or tools that can be integrated and help to automate the business better (FE#26 - Extreme).

The narratives of the female digital entrepreneurs point to a persistent, but sometimes hidden, digital gender divide within the context of the digital space. This is demonstrated by the nuanced entrepreneurial context of the female entrepreneurs in their transitioning to take advantage of new opportunities presented by digital technologies. In some instances, the female entrepreneurs hire technical specialists to pioneer and bolster online marketing, pursue online training via YouTube or simply learn by trial and error. This is important for this study, given that discourses on digital entrepreneurship are mostly saturated with meritocratic and gender-neutral perspectives. Yet, in their deliberations, the participants employed gendered lens. Hence, the dynamism of the market context for female digital entrepreneurship is aptly highlighted by participants Loverly (FE#2) and Cherise (FE#29) who explained the implications of the changing demands in the resource and skills requirements towards the business operations.

I did some short courses online...but I feel like sometimes those platforms change so much that they are like a full study in themselves....For instance when I started with Instagram it was only pictures, but now if I don't put videos, I do not get many views (FE#2 - Light).

Instagram requires you to be cute. You have to do my hair for a particular look every single time you open Instagram. Then you have to sit and edit a video....I do not have time for those kinds of things...but that is how businesses are growing these days (FE#29 - Moderate).

Others shared on the blend of organisational learnings with outsourcing (particularly through the hiring of persons, especially younger persons or others from countries with low-cost labour) to be able to apply the digital tools to engage, attract and maintain their customers who display changing demands for new products and services. In this regard, the context of the strategy of Janet (FE#11) towards acquiring and sustaining the required technical digital skills for her business is summed up in her reflection:

Well, I have learned over the years that you go hard on your strengths, and you hire your weaknesses. I subscribe to that big time (FE#11 - Moderate).

Moreover, the actions of the female digital entrepreneurs are important in influencing how context is constructed. The participants contributed to the reconstruction of their business sectors and how they made decisions to internationalise some aspects of their business operations. In terms of internationalisation, the feedback from the participants indicated that despite the relatively low cost of entering external markets through the use of digital resources, they had varying views on exporting. Their actions of integrating digital technologies in their business ventures showed that not only the nature of the market and industry contexts matters, but also the sectoral differences of the business ventures, and the aspirations and integration of the female entrepreneurs in the digital space context matter. Considering the various dimensions of entrepreneurial context and the gendered perspectives of female entrepreneurship and digital entrepreneurship, it was interesting to hear the comment of Susan (FE#13) who commented that:

With the digital space and digital technologies, context always is in one place. All those things and all aspects are all there at once. There is the objectification of women and so on (FE#13 - Extreme).

In such cases, the participants commented on the objectification of women who own businesses where everything about the business venture as well as her social and personal life are interlinked and borderless. Indeed, this experience resonates with the question raised by Welter and Baker (2021) of whether changes in digital technology will add to the complexity of the concept and lead to significant changes of how researchers and entrepreneurs view context. Therefore, the narratives on the experiences of the participants provided new insights and promising new research lens to better understand how the interplay between these technologies and the agency of female

entrepreneurship is leading to a novel perspective of entrepreneurial context. The perspective of Nicola (FE#16) provides such an example:

Through calendar invitation is how I know what is happening in my day...Remember your work-world now as a businessperson is both virtually and physically. You can connect from wherever you are in the world with partners. It's definitely a juggle for a woman who is starting her own business and growing her business in the absence of investments in the care economy in our context (FE#16 - Extreme).

Therefore, the market and industry contexts of the participants seem to suggest there are both dynamics of convergence and expansion of contexts that are necessary and complementary for female digital entrepreneurship.

5.5.3 Social and Spatial Contexts

It is of note that the interrelatedness of the social and spatial aspects of the contexts of the participants reflects the constellation of relationships that affect the processes and activities of the participants in the digital space. These contexts capture the complexities of the interplay between the social, personal, relational, and historical conditions which impact the opportunities, the access, and the choices of the female digital entrepreneurs. Based on the data collected, the participants frequently expressed the socially oriented context of their enterprises in terms of their homes, households, and families, as well as their networks. They also shared their experiences of continuously navigating maternal and gendered ideologies within a space that also expects them to respond and perform with the prioritisation of maternal roles and family care and responsibilities. The narratives of Raquel (FE#8) and Janet (FE#11) capture the lived experiences in navigating gendered ideologies when they explained that:

As a female entrepreneur it took a while for me to come into my own...everyone assumed that I was the Secretary or Assistant of my husband and that I would take the notes and send out the emails. Although I may probably be the most responsible for taking the notes, it shouldn't be because I am a woman that I have to do it (FE#8 - Moderate).

I think the tech world is different. I think the space is a safer space, because most times the people do not know who I am...nobody knows whether the business is mine. Even if I post a photo, I will refer to myself as the Chef of the business entity (FE#11 - Moderate)

Indeed, narratives such as these shed light on the nature and impact of the socio-cultural context of entrepreneurship when dubbed as “(un)freedoms” (Esnard-Flavius, 2010) that affect women within the digital entrepreneurial ecosystem. Moreover, the researcher notes the reflexivity of the participants in questioning the social hierarchies and normative behaviours that affect the experiences of female entrepreneurs in general. Further, in my own reflection as researcher, this seems to mirror sentiments associated with the historicity of Caribbean people who have been able to progress from slavery by challenging the status quo. Moreover this is in consonance with other social science findings which state that “Caribbean women challenge the limits placed upon them” (Slocum and Shields, 2008, p.62).

Within the social context of the Caribbean, the discussions with the participants captured results that relate to their individual agency, as well as their familial and market/industry relationships. Invariably, the participants described their entrepreneurial practices with insights of being inextricably linked to family history, family support and family care. Given that in the three Caribbean countries, there is relatively limited structured institutional support for childcare, family relationships play a significant role in providing the emotional, psychological and physical support needed by the female entrepreneurs in the digital environment. For the married and divorced participants, the extended family (mainly grandparents and aunts and uncles, and in-laws) plays a significant role in raising the children; while the unmarried and single participants performed parenting roles to younger siblings, nieces, nephews and cousins. The participants showed how their expanded network and social capital derived from the use of digital technologies emerged as creating changes in the social context of the entrepreneurs. The narratives of Rhiza (FE#1) and Susan (FE#13) underscored this issue:

I link my website to my social media. I link my Instagram, my Facebook, and my website all in one. So, everything is linked and that is the biggest thing about my success...because I have about 60,000 – 70,000 followers. I offer incentives through coupon codes to purchase products (FE#1 - Light).

Networking is everything! Your networking is really, really, really important to your survival....It makes sense to have allies....that understanding of my network has literally translated into my motto “my network is my net worth” (FE#13 - Extreme).

Additionally, the narratives demonstrate that the participants took actions to connect online with a wider entrepreneurial community comprising persons across other sectors and geographic space. The vivid reality of Rhiza's (FE#1) experience in the online community captures a scathing picture of her social context derived in describing her business network as such: *"It is not a sisterhood; it is a rivalry"*. This comment emanates from her experience in the health and beauty sector, which is hypercompetitive in the physical embodiment of the person. This example was given of the action of another female entrepreneur from another Caribbean island who removed her business logo and replicated her content, including her online photographs to market her products online. Yet, within the same country, but operating in different sectors, the female digital entrepreneurs such as Kimberlee (FE#4) recounted incidents of reciprocity among the members of a digital entrepreneurial network she belongs to.

I saw an opportunity which I shared with her as I thought it was ideal for her (and in her favour). And then she pulled me on board as a partner for the project. So, there is reciprocity (FE#4 - Extreme).

With the novelties associated with female digital entrepreneurship, the information gleaned from the participants reveal an interesting nexus between the social context and the temporal context of the digital entrepreneurial environment for women in the Caribbean. For instance, over time, the digital space provided the female entrepreneurs with the opportunity to share transparently on their experiences via social media which helped them to gain clarity in their efforts to address or resolve the tensions they face, to reinforce their business strategies and decisions, and even to navigate the digital space beyond their business endeavours. The results also highlighted that over time, the participants developed stronger bonds of trust and confidence in their social contexts; albeit within different business operations that were conducted in different community-based settings of the networks. The example of a young man who affirmed the efforts of his pregnant mother in her association with the virtual business network as recounted by Monica (FE#10) gives some insight on the effects of the transformed social context:

Through the network, I am better able to analyse the trends on social media and translate this to successfully cater and meet the high demands of customers during one of the busiest time of the year (November and December), so much so that my son said to me "mommy you are the GOAT – the Greatest of All Times" (FE#10 - Light).

Also, another female digital entrepreneur – Katie (FE#15) – shared her experience of being part of a network through a WhatsApp group which enabled her to transform and expand her business operations to include online teaching. The following account highlights this experience:

My online students come from different career backgrounds such as banking, tourism, and medicine. Over time, we formed a WhatsApp group and are comfortable to have conversations which are related to everyday life instead of just [name of class subject] (FE#15 - Moderate).

In addition to the demonstrative results of the diversity in sectoral and temporal experiences of the participants, a striking trend that emerged from the findings is that of the women “doing context”. In this regard, the findings demonstrate that the participants play an active role in reconstructing the social dimensions of their contexts within their digital entrepreneurial environment. Their use of digital technologies in entrepreneurial activities has shown the effects of reducing the spatial divide of geography and physical distance which in turn could suggest a lessening of the variations in the factors of production across regions. While an explanation of the variations in the Caribbean region with that of other developing countries or regions across the globe falls outside the scope of this study, the researcher noted the efforts of the participants in leveraging “the power” of the technologies. This is shown in the role of the female entrepreneurs in utilising the technologies for the outsourcing of services at affordable prices to persons in countries such as India and China; the forging of collaborative ventures with persons and entities in other countries for trade; and cross-learning through crowd sourcing to gain ideas and knowledge, and funding from a global audience. Further, the researcher also noted how the participants have been able to overcome the limitations of their spatial location and social context through their agency to protect and promote the region’s rich cultural heritage amidst the potent influence of distance cultures. For instance, Raquel (FE#8) who exports products and Nicola (FE#16) who offers skills training for young female entrepreneurs stated:

I hate the phrase ‘look international’. That is something I am very passionate about, and I have always held true to...With technology I want to make sure my product still has that local Caribbean feel. I always wanted it to be a strong Caribbean brand (FE#8 - Moderate).

This points to a need for an opportunity in shaping and creating AI products from out of the Caribbean for us. I want to see how I can use some of the AI products for data generation

and data analysis because we definitely have not grasped that data is the “new oil” in the Caribbean (FE#16 - Extreme).

Moreover, another difference in the spatial context of a business which operates fully online is underscored in the narrative of Kimberlee (FE#4) who owns an online tutoring service and shared about her efforts to deal with the lingering effects of social and cultural norms on her operations when she explained that:

Some parents call and still ask for face-to-face engagements for their children...because they believe that the technology is not as effective. So, I have to keep reminding them that the online space is very safe...this is mostly based on previous experiences they themselves had elsewhere with online courses that turned them off. So, I try to show them that this is a controlled environment, and the children would not be distracted (FE#4 - Extreme).

The spatial context of the female digital entrepreneurs also revealed elements of the institutional context as it relates to their experiences of the entrepreneurial ecosystem in general and the nuances embedded in some areas. The participants commented on their experiences of emerging changes in an institutional structure that is historically characteristic of (a) favouring entrepreneurs who offer tangible products instead of services propelled by technologies although more than 60% of government revenue is derived from services, (b) developing programmes that are geared towards attracting more female entrepreneurs instead of developing better female entrepreneurs with the necessary financial and other support, and (c) paying little attention and providing limited investment support to research and development in strengthening the environment for digital entrepreneurship and to STEM education for girls and women in the education system. Further, it is interesting to note that despite the tertiary level of education attained by the participants and the various networks established for sharing information, they exhibited limited awareness about the policy environment for enabling entrepreneurship even to the extent where the lack of knowledge of the actual existence of the national policies seemed to be dominant. The low level of knowledge and recognition of the entrepreneurial policy environment is depicted in the following narratives from Janet (FE#11), Henrietta (FE#17), Sabby (FE#24), Sumitra (FE#26) and Kasha (FE#28).

I'm honestly not aware of any policies, but I know for the national budgets over the last 3 years, they allocated certain amounts of money towards female entrepreneurship (FE#11 Moderate).

Beverly, let me tell you something. A lot of times I don't know what is going on. So there possibly could be policies and stuff but I don't know. I'm not aware...I almost want to say I don't know and don't care ...not because I'm selfish, but because I realise that I have to exert my energy where I think I'll get the most results...so I am picking my battles (FE#17 - Extreme).

I don't know about policies, but I feel they could implement a lot more programmes with learning tools (FE#24 - Light).

I don't know if there are policies. But I think for the Caribbean countries, the governments should put in place funding that helps female entrepreneurs get started...for training on work-life balance. We don't have enough support (FE#26 - Extreme).

Okay. I am going to be honest...I've not paid that much attention as I should have to them [policies]....One of the main things I'd like to see is continuity and synergies among the programmes (FE#28 - Moderate).

Therefore, the insights gained from the lived experiences of the participants seemed to suggest that the online space, together with the agentic influence of the female digital entrepreneurs within their social and cultural landscapes equilibrate and disequilibrate their performance in their spatial contexts.

5.6 Summary

Against the backdrop of a dynamic global entrepreneurial environment, digitalisation is persistently altering the business landscape (Roblek *et al.*, 2021). Female entrepreneurs of the Caribbean, who are mostly small and medium business owners, form part of this global digital entrepreneurial environment and operate in a geographically dispersed space in their island states. Although the intersection of their contextual issues remains underexplored in research on digital business transformation, the research findings have filled some of the gaps of the critical puzzle in exploring how female entrepreneurs can leverage digital technologies to effectively enable innovation and transformation of female entrepreneurship. In the Caribbean, the female entrepreneurs' dual role in both being impacted by and influencing the current and future role of digital technologies in their business operations is affecting the impact and scalability of their product and service offerings to foster sustainable innovation that transcends their limited

geographic boundaries. Based on the findings, digital technologies enable female entrepreneurs in the Caribbean to improve how they overcome and navigate the challenges faced within the geographic space characterised as sovereign island states; enhance the power of networks to reach new markets and customers and the unique socio-cultural values of matriarchy; create “safe spaces” for socio-economic impact; and simultaneously challenge gender norms in entrepreneurial leadership, resilience and context. Therefore, while these digital technologies are not a panacea for the challenges and biases women in business face, they are catalytic in offering various opportunities to be leveraged by female entrepreneurs in their bid towards improved empowerment and ultimately business transformation.

CHAPTER 6: DISCUSSION

6.1 Introduction

The previous chapter described the findings from the data collected from participants who are female digital entrepreneurs who own and operate their business enterprises in three Caribbean islands of Barbados, Trinidad and Tobago and Jamaica. Four major themes emanated from the data collection and analysis, and these were presented in Chapter 5. These are entrepreneurial resilience, entrepreneurial empowerment, entrepreneurial leadership and entrepreneurial context. As the accounts of the participants highlight a myriad of issues surrounding business transformation through the use of digital technologies and the phenomenon of digital entrepreneurship, this chapter draws on contextual gendered lens, as well as TACT and post-colonial feminist theory to focus on those issues which are considered as most relevant to the research objectives, while also highlighting some of the key insights gleaned from the results. These research objectives, as outlined in Section 1.4 of Chapter 1, include improving the understanding of the impact of digital technologies on female entrepreneurship in developing countries' context, providing a deeper understanding of the role of digital technologies on female entrepreneurs' motivations in developing countries with a special focus on the Caribbean region, and uncovering female entrepreneurs' experiences with digital technologies and the implications for addressing societal challenges in developing countries – particularly, SIDS.

In this chapter, the discussion is centred around the four themes in the light of existing literature and is interspersed by the researcher's reflexivity. This chapter is divided into seven main sections. Section 6.2 underscores the growing importance in emphasising the conceptualisation of digital entrepreneurship in the context of the Caribbean. Section 6.3 discusses the issues in charting and translating resilience dimensions offered by digital technologies. Section 6.4 gives attention to the dynamics of entrepreneurial agency in relation to empowerment and leadership. Section 6.5 presents and discusses SHERO as a novel conceptual lens of the findings which encapsulates and integrates dimensions of Sustainability, Hope, Empowerment, Resilience and Optimism. Section 6.6 discusses the main insights emanating from the findings which point to advancements in female digital entrepreneurship, and Section 6.7 provides a summary of the chapter.

6.2 Conceptualising Digital Entrepreneurship in Caribbean SIDS Context

Considering that research on digital entrepreneurship is largely focused on high-tech environments (Nambisan, 2017) in the Westernised or Global North context, this study, which is situated in the Caribbean context, provides several important findings that fill this research gap and adds to the body of knowledge, while also challenging the status quo that is currently emerging globally. Even as rapid digitalisation raises questions about several traditional assumptions of entrepreneurship (Nzembayie and Buckley, 2022) and female entrepreneurship (Martinez Dy, Marlow and Martin, 2017), there are opportunities to shape their evolutionary contours in this digital era. The ongoing debates regarding the impact of digitalisation on female entrepreneurship (Martin and Wright, 2005; Salamzadeh *et al.*, 2024), underscore the importance of additional research to illuminate the dynamics of the relationship in different regions and contexts, particularly in developing countries. This is of importance given the heightened interests in gaining a deeper understanding of this relationship, the key issues related to the new types of opportunities, as well as challenges which emerge from digital entrepreneurship (Kraus *et al.*, 2019), particularly in light of its promises for innovation and widespread business transformation (García-Morales *et al.*, 2021; Gawel and Mińska-Struzik, 2023) in developing countries (Salamzadeh *et al.*, 2024).

Unlocking Potentials: Networking, Collaboration, Innovation

It is interesting to highlight that regardless of the category of the digital entrepreneur (light, moderate and extreme), the female digital entrepreneurs reported how they made use of digital technologies for networking with stakeholders at all levels (micro-, meso- and macro-levels). Through digital technologies (particularly digital platforms and digital infrastructures), the participants are better able to acquire, store and utilise information to innovate their business processes and outcomes (Kraus *et al.*, 2019). Insights from the findings reveal increased dynamism and agility of the entrepreneurs to innovate through enhanced benefits of networking and expanded human and social capital. In the entrepreneurial environment of the Caribbean, access to a large amount of information by both entrepreneurs and customers is shown to be the source and a continuous driver of digital entrepreneurship (Nambisan, Wright and Feldman, 2019). The findings indicate that online platforms, blogs, and various other forms of social media are used by the participants to facilitate the creation and distribution of digital and physical goods and services.

In the face of financial constraints among these female entrepreneurs, digitalisation makes it feasible to produce infinite copies of digital products (such as podcasts and online training modules) and digital information at little or low material cost without compromising the quality. Through such reproduction and preservation of good and services, digital technologies provide opportunities for the female entrepreneurs to derive economies of scale, despite their small sizes and inherent resource constraints. Moreover, the agency of the participants is significantly augmented in being able to reach larger and wider customer base nationally, regionally and internationally without having to “go through” the traditional gatekeepers in entrepreneurship and in the digital space. This is not to negate there still exist challenges of limited entrepreneurial infrastructure, legal and regulatory framework to support the business endeavours. Yet, considerations of being able to achieve product (goods and services) durability and replicability without access to significant financial resources and without having to exert too much influence to overcome traditional market entry hurdles, point to the concept of business sustainability (Guttermann, 2018; Johnson and Schaltegger, 2020).

In keeping with the broad issue of business sustainability, the researcher notes that with the technologies all three aspects are considered relevant (that is, economic, social and environmental). While the networking and the sharing of information can be arguably seen as a natural outcome of the digital disruption in the business landscape (Foss, 2010; El-Fiky, 2023), in the context of the Caribbean culture this holds particular significance in complementing social norms towards strengthened collaboration among the female entrepreneurs. The positive mindset of Caribbean women towards their involvement and contribution to community and society, which traces back to the region’s colonial legacy where cooperation and collaboration was instrumental for dealing with the scourge of slavery, lends itself to having a more communal mindset in their business approach (Slocum and Shields, 2008). After emancipation, this was more endemic among the women than the men who focused intently on their ability to create wealth to support their families which by extension was symbolic of their masculinity and economic prowess (Esnard-Flavius, 2010; Freeman, 2014). In this regard, a post-colonial feminist perspective underscores the importance of having a more engaged focus on the socio-cultural context of the Caribbean to have a more critical understanding of the fluidities and complexities of Caribbean women (Freeman and Murdock, 2001). Further, the researcher is reminded of how the historical contexts provide useful

insights for connecting the socio-cultural construction of gender and the development issues which influence the patterns of networking among female digital entrepreneurs in the region.

Interlocking Dynamics: Communal Culture, Business Resilience and Sustainability

Another important insight is the openness and flexibility of the participants to adopting and using digital technologies in their operations (Olan *et al.*, 2024). This is uniquely interesting, as the technologies enabled a triple impact on the participants as entrepreneurs, as customers and as part of the wider community simultaneously. For instance, with online mentorship or online training, as Mentors, the female entrepreneurs were able to share their experiences and knowledge, while at the same time as Mentees, they were able to gain useful information and other support services through the use of the digital platforms and infrastructures. Further, during and on the aftermath of the COVID-19 pandemic, the accelerated and increased use of these technologies was paramount to ensuring business continuity; thereby emphasising the relevance towards entrepreneurial resilience and ultimately economic sustainability that benefits the society as a whole. Although this type of resilience can be interpreted as indirectly reinforcing patterns of structural inequality in the entrepreneurial environment rather than dismantling systems of traditional constraints, attention to the Caribbean culture reveals that the actions of the female entrepreneurs are driven by diverse national and regional concerns (Freeman and Murdock, 2001). Hence, post-colonial feminist lens propounds the importance of giving local meanings to illuminate the intricate relationship between digital technologies and female entrepreneurship in the given context (Salamzadeh *et al.*, 2024).

More specifically, for the island states of the Caribbean, an added and more nuanced value of digital technologies emanates from the possibility and power to effectively connect the entrepreneurs who operate in fragmented and remote spaces with other stakeholders nationally, regionally, and internationally. The context of the archipelago of the Caribbean region's small-island states encompasses and is characteristic of different institutional and geographic proximities as well as different localised entrepreneurial capabilities to deal with the dynamics and conditions for regional innovation and development (Yamamura and Lassalle, 2022). Therefore, digital technologies function as “the glue” that enables the sharing of information and knowledge diversity and the functioning of knowledge networks, which ultimately contributes to minimising

the challenges of less stable markets in the different spatial and temporal contexts of the islands. This reality brings to bear how the technologies contribute to dealing with issues related to the relatively high transportation costs (people and goods) among these islands and increasing geopolitical tensions which further threaten fragmentation of trade and marketing links across the region (Economic Commission for Latin America and the Caribbean, 2024). While overcoming these challenges require much more than digital technologies, their catalytic impact cannot be discounted (Beliaeva *et al.*, 2020). The catalytic impact is further exemplified in recent efforts by regional institutions, such as the Caribbean Development Bank (CDB), to establish and launch innovative collaborative mechanisms and systems for Micro Small and Medium Enterprises (MSMEs) of female entrepreneurs aimed at facilitating market access, mentorship, networking and capacity building through the e-commerce platforms of SheTrades Caribbean Hub and Caribshopper (The Caribbean Development Bank, 2025). Indeed, the emergence of such digital solutions provide new opportunities and new contexts for these women-owned MSMEs to reshape and redefine entrepreneurship strategies, structures, and processes (Olan *et al.*, 2024). Inarguably, in a competitive global business environment, the provision of such centralised technological support for female-owned businesses not only enables multi-layered solutions but also complements the critical importance of interconnectedness in navigating the emerging turbulent and uncertain digital entrepreneurial environments (Nambisan, 2017). These results are aligned with recent studies which focus on the importance of proximity to support entrepreneurship in peripheral regions such as islands (Merouani *et al.*, 2023) and the practical relevance of the digital context, notwithstanding the continuous and rapid upgrading of the technologies (Olan *et al.*, 2024). Thus, an emphasis on taking a context-centric approach is important to comprehend the influence of digital entrepreneurship on female entrepreneurs (Salamzadeh *et al.*, 2024) in the Caribbean.

Invariably, the digital context is conceptualised from global neo-liberal economic perspectives that are biased against the developing countries of the Caribbean (Thakur, 2012). Critical stances which link digital technologies to SIDS as a new form of dependency (albeit technological) on the Global North, evoke generic colonial ideologies of development that are focused mostly on basic survival (Freeman, 2000;Thakur, 2012). Yet, the results reveal that the female entrepreneurs in the Caribbean, who owned MSMEs, utilise digital technologies to connect to other sectors in their

respective value chains, to emphasise niche markets, and to drive long term business development. Notwithstanding, in so doing there is the risk of being encumbered by the depersonalisation aspects of digital entrepreneurship and the potential for misunderstanding, misinformation, and other challenges related to data protection and copyright (Kraus *et al.*, 2019; Nzembayie and Buckley, 2022). However, in the island context, the issue of connectivity and the forging of deeper and more personalised relationships in business is further nuanced and realised by the fragmented characteristics of the different geographic and political sovereign states. Reflecting on the participants' experiences, brought to the fore the governance and policy arrangements for the respective geographic countries as a related constraint or disadvantage faced by the female entrepreneurs in the business environment of the Caribbean. Note is taken of the fact that the technologies afford enhanced opportunities for expanding their businesses regionally and internationally, and by extension improve the effectiveness of the CARICOM Single Market and Economy and the OECS Economic Union in coordinating regional integration and development. This finding resonates with the notion that increasing digitalisation in entrepreneurship provides an avenue for breaking down barriers that constrain female entrepreneurs by facilitating market expansion both locally and internationally (McAdam, Crowley and Harrison, 2020). Therefore, this situation underscores the significant role of digital technologies in confronting and overcoming disadvantages related to their particular context (Jones, Martinez Dy and Vershinina, 2019) which is characterised by Caribbean islandness.

In particular, the nature of the connectivity serves to bridge the geographic divide emanating from the large ocean spaces between the islands, whereby the female entrepreneurs are able to build closer and even deeper relationships with customers and other entrepreneurs in their networks. Insights from the findings showed how reduced costs for transportation, marketing and communication, coupled with increased trade through an enlarged target market, impact positively on reducing carbon footprint required for doing business in the region. Hence, by considering the notion of externalities (Acs, 2010), there is scope for having an indirect positive impact on the environmental sustainability through the use of digital technologies in female entrepreneurship. Considering also the generic care and other family responsibilities of the female entrepreneurs in the domestic sphere, with the technologies, the women are not required to always physically travel far distances to conduct their business transactions. Therefore, while the study demonstrates that

the use of the technologies mitigates the challenges of distance to market for island enterprises, the existence of other contextual factors suggest that entrepreneurship is significantly enabled and constrained by the interdependency of the actors and factors within the particular context of the Caribbean (Merouani *et al.*, 2023). With development models that are built largely on small monocrop economies, the effect of seasonality is an eminent feature of the Caribbean business context. Moreover, within the islands, the nature of the infrastructural (such as fibre broadband) and institutional (such as business services) contexts impact on the effectiveness of digital technologies in mitigating drawbacks caused by proximity. In a similar vein, the role of the female entrepreneurs, as the main actor, is pivotal in being able to navigate their everyday business environment that is characteristic of remote and fragmented island contexts. Overall, the contextual lenses (Welter *et al.*, 2017) indicate that the context - female entrepreneurship relation in the Caribbean islands - is dynamic. The use of TACT has shown to be important (Majchrzak and Markus, 2012) in understanding the scope of such dynamism which is impacted by the continuous rapid disruptions in the business environment caused by digital transformation (Roblek *et al.*, 2021; Olan *et al.*, 2024). For instance, with the principal premise of TACT being the conceptual relations between people and technology, it provides important insights on how the female entrepreneurs adapt their business practices and processes (e.g. training, outsourcing of services and agency) to improve their alignment to the changing digital environment. In this regard, the nuances of the digital context within the island setting constitute a different type of digital entrepreneurship with a forward-looking orientation that is aligned to connectivity and offerings of significant potential for expanding an understanding of the impact on the endeavours of female entrepreneurs in various sectors and across diverse contexts.

Challenging Traditional Assumptions

Notwithstanding the positive effects that are enabled by digital technologies on the remoteness and fragmentation of the island context, past research has highlighted the proximity paradox, whereby proximity can equally exude negative effects to the entrepreneurial environment, such as significant dependency leading to inertia and lock-ins (Yamamura and Lassalle, 2022) caused by “learned helplessness”, limited openness and stymied creativity. In relation to the Caribbean, such observations need to be tempered by acknowledging the region’s Marxist intellectual tradition that is mostly anchored in economic development and dependency on the metropole (Freeman, 2014).

The wholesale importation and application of such colonial Western perspectives of “dependency theorisation” tend to reinforce an enduring misalignment of the local agency and diversity of Caribbean women, given the heavy focus on their access (lack of) to economic resources (Freeman and Murdock, 2001). Furthermore, the region’s prominent matriarchal family structure characterised by a high level of female headed household and a tradition of women working outside the home to support their families, give additional insights on the nature of their agency in integrating their business entities (Slocum and Shields, 2008). Rather than being the epitome of passive victims of development in this digital era, the female entrepreneurs tend to utilise the digital tools as active agents who possess increased “power to” do something for their business, self, family or community, instead of “power over” others or things (Freeman and Murdock, 2001)¹³. Hence, with digital entrepreneurship, the agency of Caribbean female entrepreneurs should not simply be described with binary options of either direct adopters or resistance of a colonial legacy but should integrate the local cultural dynamics and context.

The socio-cultural context of the Caribbean, which is largely influenced by its colonial past, provides more scope for a nuanced model of digital entrepreneurship that is differentiated by small remote communal entrepreneurial spaces that are functionally enlarged by the connectivity facilitated by digital technologies and enriched by functional familiarity. By nature, this evolving reality is anchored in the harnessing and building of trust among entrepreneurs, customers and other stakeholders in the environment. With deeper and closer relationships between the participants and their customers, as well as among the participants and their networks, there is scope to solidify the foundations laid for a more trustworthy and by extension a more reliable operating business environment and landscape among the female entrepreneurs (Richter *et al.*, 2017). Evidently, the intermingling of human, cultural, social and historical issues across multiple levels (micro-individual, meso-institutional, macro-national levels) offers deeper insights on how processes that are digitally fuelled unfold and how the interplay between the entrepreneurs and the technologies are shaped by both (Sussan and Acs, 2017). Hence, to understand the complex and dynamic phenomenon of digital entrepreneurship necessitates that empirical work integrates the

¹³ With an understanding that the concept of “power” must be understood in the specific context at hand, the researcher translates it as notions about the participant and capacity rather than physical force. In Caribbean context, this illuminates the distinction between “power to” versus “power over” in the practice of female digital entrepreneurship.

underlying contextual socio-cultural and historical issues (Nambisan, 2017). Although the Caribbean is portrayed as having a homogenous entrepreneurial environment, there are diversities embedded in its island context.

Propelling Female Digital Entrepreneurship

From the findings, there are various indications of the role of digital technologies in influencing entrepreneurial activities. For instance, the incursion of digital technologies in all aspects of people's lives and business endeavours (Jawad, Naz and Maroof, 2021; Roblek *et al.*, 2021) increased the need among the participants for technological solutions to support the digital transition and their business transformation. Moreover, the heightened orientation of business enterprises in the Caribbean towards using digital technologies opens the path towards driving digital entrepreneurship in the region. From the narratives of the participants, opportunities for digital entrepreneurship are detected both in the local and regional contexts as some entrepreneurs are involved in exploring and capturing business opportunities in other Caribbean countries by their physical relocation or by setting up additional business ventures in other Caribbean countries, as well as through the use of the technologies to penetrate the regional market. In other words, while digital technologies are global, the agency of the female entrepreneurs is localised (Sussan and Acs, 2017). The researcher also gained insights from the experiences of the participants who are involved in digital entrepreneurship by performing business activities that utilise these technologies but may not in themselves be tech savvy. In all instances, through their agency, the participants leveraged digital technologies to explore opportunities within the business environment towards increasing efficiency (Richter *et al.*, 2017). To a large extent this digital orientation of the participants presents knowledge spillover which purports that persons within a given context with new knowledge assets tend to use these to generate additional entrepreneurial opportunities (Sussan and Acs, 2017). Intrinsically, the generative nature of digital entrepreneurship facilitates the female entrepreneurs' abilities to develop new products and services or to scale up an innovative endeavour (Olan *et al.*, 2024). However, the results from the study reveal that the nexus between the use of digital technologies and the knowledge to derive consumer goods or services is not automatic, thereby pointing to the relevance of the agency of the participants.

Moreover, from the perspectives and experiences of the participants, they seek and act on the new knowledge assets to create new opportunities which transcended their own business enterprises. Several participants, through their entrepreneurial passion, utilised their new knowledge assets to support other entrepreneurs, inclusive of other female entrepreneurs (current and potential) who are more marginalised and vulnerable. Hence, this research shows how and emphasises the critical role of female digital entrepreneurship in creating channels for the dissemination of new knowledge and ultimately in driving socio-economic dynamics and development (Acs, 2010). From the analyses of the empirical evidence, the researcher gained insights on how the socio-cultural and industry/organisational factors also influenced strategic business decisions to operate locally, regionally or internationally, as well as to pursue either a light, moderate or extreme digital business model (Kraus *et al.*, 2019). In the adoption of digital entrepreneurship across the three countries, an understanding of the unique cultural differences by the entrepreneurs is useful as it is interesting to learn of the varied and seemingly contradictory experiences of the participants when they accounted for challenges and barriers to their business ventures. For example, some of the entrepreneurs operating only in their domestic spaces in their own countries generally criticised the lack of enabling structural conditions and business environments to support their digital business ventures, compared to other regional entrepreneurs operating in the same space, but whose business orientation is regional or international in scope, recounted opposite experiences. In this regard, the primacy of analysing the lived experiences of the entrepreneurs from their narratives, also emphasises the significance of understanding the different dimensions of context at the individual level (such as psychological characteristics, expertise, entrepreneurial education and industry knowledge and networks); therefore adding to the corresponding complexity of entrepreneurship context in a dynamic digital era (Zahra, Wright and Abdelgawad, 2014; Nambisan, 2017).

Recalibrating Caribbean Entrepreneurial Context

The findings of this study also bring into sharp focus and reinforce the perspective that context in entrepreneurship matters (Guelich *et al.*, 2021). Further, the notion of context should not be treated as static (Baker and Welter, 2020). While there is an aura of universalism and essentialism encapsulated in female digital entrepreneurship, the intensity of how digital technologies are perceived by the participants depends on the socio-cultural context of their countries (Dy *et al.*,

2017). By bringing novel evidence from a non-Western context, this study emphasises the defining role of Caribbean Island nations and of their contextual historical and socio-economic dimensions on the business transformation for female entrepreneurs in their interactions with digital technologies. Specifically, the colonial and post-colonial history of these small island nations has impacted the construction of specific socio-cultural norms and gender expectations, including in the economic sphere (Minto-Coy, Lashley and Storey, 2018). Therefore, by recognising and analysing the post-colonial contextual conditions in which female digital entrepreneurs operate, the study shows that the Caribbean context, together with its socio-cultural arrangements and gendered normative expectations, influence the lived experiences of the female digital entrepreneurs. With their small domestic markets and limited abilities to exploit economies of scale, the legacy of colonialism is reflected in the post-independence policies which predominate notions of economic dependency and the political economy in the Caribbean (Rivera-Quñones, 2022).

Furthermore, the current high levels of female autonomy amidst local forms of patriarchy illuminates a nuanced challenge to western formulation of public/private spheres in the Caribbean labour market (Freeman, 2014) where the link between structure and agency becomes even more pronounced in the digital entrepreneurial environment. The perspectives of the participants reflect how they function as creators of alternative and transformative strategies. In this regard, post-colonial feminist theories provide insights on “the politics of location” as described by Adrienne Rich in Piedalue and Rishi (2017). This is evidenced by the participants as they showed how they interpreted and assessed their lived experiences and knowledge as situated and embodied, and their identities as relationally produced in the Caribbean context, based on their understanding of the influence of imperial power and a recognition of resistance practices in their operations. Hence, such understanding is crucial for theorising digital entrepreneurship from a post-colonial feminist perspective (Ozkazanc-Pan, 2012) given the potential to recognise, validate and learn from a non-European or non-Western perspective. Such insights are not simply meant to add variation to ongoing debates by drawing on the empirical uniqueness of the Caribbean, but rather to view theorising from the developing world as critical to understanding the contemporary phenomenon of digital entrepreneurship across the globe from new lenses. Moreover, post-colonial feminist theory illuminates the linkage and relationality of power between the Global South and the Global

North through paradigms rooted in colonialism, past and present and with gendered characterisations (Piedalue and Rishi, 2017). Thus, given the significance of the local contextual factors of the female entrepreneurs in the Caribbean, the temporal dimensions (that is, the lived and clock times), as described in sub-section 5.5.1 of the main findings should also be taken into account in tandem to amplify the contextual lenses in female digital entrepreneurship. In the Caribbean context, the range of influences emanating from the use of digital technologies has a rippling effect on new entrepreneurial opportunities for the participants such as their access to markets, networking, and an intertwining home-work space.

Female Entrepreneurship and Digital Technologies: Movement & Moment

Cognisant of the significant opportunities offered by digitalisation, the experiences shared by the participants helped to fill the research gaps linked to the incomplete picture and the lack of a full understanding of the effects of the interaction between the phenomena of fostering digital transformation and the persistence of the gender gap in entrepreneurship (McAdam, Crowley and Harrison, 2020; Gawel and Mińska-Struzik, 2023). This is important as the research reveals that digital entrepreneurship occurs as a process (a movement) and in the moment, as the female entrepreneurs learn by doing (Dodd *et al.*, 2022) in their geographic and social locations. With existing gender-related inequalities in the entrepreneurial environment, it is logical to speculate whether the use of digital technologies can realistically lead to a virtuous circle which enables female entrepreneurs to circumvent existing challenges of inequalities. Or whether the impact will instead maintain the status quo along the path of a vicious circle characterised by a digital gender divide. This dilemma is predicated on the understanding that inequalities within entrepreneurship is complex due to the situatedness of experiences within their specific contexts (inclusive of gender, class, geography, among others), as well as the broader social relations and structures (Hussain, Vershinina and Carey, 2024). Similar to the earlier-mentioned argument related to “the politics of location”, there is also the combined simultaneous effect of social identities and positions which can further influence and shape the constraining elements and barriers faced by the participant (Martinez Dy, 2020). In addition, the application of feminist knowledge in entrepreneurship disciplines has shown that marginalisation occasioned by inequalities can drive collective and active resistance, as well as the reframing of positioning (Jones, Martinez Dy and Vershinina, 2019); ultimately resulting in changes in organisational practices. Therefore, the novel

findings, which have evolved into a broad conceptualisation of SHERO, as shown in Section 6.5 of this chapter, provide additional compelling evidence that serves to simultaneously deepen and enrich the knowledge on the emergent transformative force of digital entrepreneurship. In essence, this is not simply about different realities from the “colonial vagaries”, but more about accounting for the issues that are powerfully at work in shaping female digital entrepreneurship in the Caribbean region.

Additionally, based on the novelty and the attendant early stage of development of the phenomenon of digital entrepreneurship, the researcher considers it useful to also chart the significance of post-colonial feminism as a lens to more broadly capture alternative knowledge paradigms with empirical variations of gendered social realities of female entrepreneurs in non-Western regions (Piedalue, 2017) such as the Caribbean. Therefore, the implications of the post-colonial feminist perspective for practical considerations in the field of digital entrepreneurship and female entrepreneurship offer insights at historicising and highlighting the agency of non-Western female entrepreneurs (Kerner, 2017) in the global digital environment. One of the significant and promising aspects which points to the transformative effects of digital technologies is depicted in the description and characterisation of entrepreneurial resilience among the female digital entrepreneurs.

6.3: Charting and Translating Entrepreneurial Resilience

The significance of entrepreneurial resilience among SMEs has gained prominence in entrepreneurial studies, given the recent diversity and scale of extreme global adverse events which threaten the success and survival of female entrepreneurship (Pacheco *et al.*, 2023). Although research and practice have emphasised the relevance of female entrepreneurship to socio-economic development, the many obstacles that still exist, present an opportunity to gain further insights on the concept of entrepreneurial resilience. In exploring the results of entrepreneurial resilience from the use of digital technologies, there are indications of links with entrepreneurial behaviours which espouse adaptive, innovative and continuity capabilities (Branicki, Sullivan-Taylor and Livschitz, 2018). However, since much of the research on entrepreneurial resilience focus on large enterprises, in the context of Caribbean SIDS, this study provides scope for broadening the

understanding of the concept and for theorising more concretely SME resilience. Moreover, the limited empirical evidence on SME resilience (Herbane, 2019) points to research gaps that necessitate an exploration of business transformation through entrepreneurial resilience at the individual and organisational levels (Gaweł and Mińska-Struzik, 2023). Besides, the rapid and pervasive changes to the business environment caused by the integration of digital technologies, suggest that academic research on digital business transformation may not be on par with the reality in the field (Kraus *et al.*, 2019).

Towards Influencing SME Growth Models

In this study, there is an inevitable link between SME resilience and SME growth, given that in the literature, the growth mode of SMEs is mostly characterised as organic growth whereby firms develop and utilise resources and capabilities, and internally produce Research and Development (R&D) and innovation (Brush, Ceru and Blackburn, 2009). However, by avoiding an oversimplistic and normative conceptualisation of firm growth, the researcher describes SME growth in light of a firm's adaptability to changing environments, and its performance and operations (Hakola and Sarna, 2023). This is important to appropriately reflect the diversity of businesses in the real world in which a large portion of the businesses are not growth oriented (Ahl, 2006) and where growth oriented behaviour is generally normalised as male (Ahl and Marlow, 2012). Furthermore, even in exploring the contextual effects on a firm's growth mode selection, the existing assumptions are linked to large scale enterprises and not the context of SMEs resulting in limited antecedents and fragmented knowledge about the context of SMEs (Hakola and Sarna, 2023). Hence, the relevance of this study is underscored in the insights gained on critical perspectives for a more comprehensive understanding of SME growth and by extension SME resilience. According to the literature, the key antecedents for the organic growth of SMEs are the firms' resources, the entrepreneur, a growth goal and specific strategic goals where the resources are identified as the most important among them (Brush, Ceru and Blackburn, 2009). In this regard, resources broadly comprise financial and knowledge related resources which include managerial expertise, technological know-how and competitive products (Hakola and Sarna, 2023).

From the data analysis, the business ventures and the participants are so intertwined and inextricably linked that when the female entrepreneurs narrate about improving their technological

skill sets or management processes through the use of digital technologies, there is an assumption that there is an impact on the business. For instance, with data samples of female digital entrepreneurs who own and manage business entities that on average consisted of 1- 4 employees (where 1 employee represents the owner/manager), the researcher surmises that there is an indirect causal relationship between the size of the business and the actions of the manager, whereby the smaller the entity, there is a greater tendency for the entrepreneurs and the resources to be more tightly enmeshed and difficult to separate. This insight is echoed in the literature which elaborates on the experience-based and managerial abilities of the SME entrepreneurs to have a relatively tight control over their resource allocation and overall performance of their business entity (Ajzen, 2011). Hence, in consonance with the findings, the motivation, intention and subsequent effort of these female digital entrepreneurs' actions directly trigger and indirectly influence the opportunities for entrepreneurial innovation and growth (Hakola and Sarna, 2023). In other words, the agentic characteristics of the participants (Lee and Jones, 2015; Welsh *et al.*, 2021) play a role in shaping how the use of these digital technologies influence the growth and resilience of their business ventures (Audretsch *et al.*, 2024).

Enmeshing Agentic Paradigms: Female Entrepreneurship and Technologies

This further suggests that the use of the technologies impacts both the entrepreneur and the business entity simultaneously (Nambisan, Wright and Feldman, 2019). The previously mentioned persistent gender gap in entrepreneurship (OECD, 2021), together with the uneven geographical unfolding of digital transformation across developing and developed countries, point to the potential of digital entrepreneurship to reinforce inequalities or to dismantle barriers for female entrepreneurs (Gaweł and Mińska-Struzik, 2023). The findings from the Caribbean Island context demonstrate that “smallness” is an asset rather than a liability. Through gender lens, interesting perspectives are highlighted from the willingness of the participants to use digital technologies to collaborate in the business ventures, instead of remaining trapped in a vicious circle of entrepreneurial constraints (Vershina *et al.*, 2020). To extend this argument further, considerations of the effects of the intellectual growth and advances in technological know-how of the participants from e-mentoring, e-learning, online networking, among others are demonstrated in the practices of the entrepreneurs who decide to deploy their resource growth to expand, as well as to set up new businesses in the same country or overseas. This scenario was

demonstrable of those participants who are keen on developing and sustaining niche products and markets. Therefore, through the use of digital technologies, the resilience of these SMEs is manifested beyond the normative organic growth mode and points to alternative modes that are seamlessly linked to the entrepreneur (Ayala and Manzano, 2014). Considering the essential role of the entrepreneur for driving the growth strategy of the business, the researcher suggest that one can further argue that the growth of SMEs through digital technologies is a complex process, since these small firms, as well as micro-enterprises, are able to grow in non-linear and unpredictable ways (Herbane, 2019;Olan *et al.*, 2024).

Evidently, the improved resourcefulness of the SME entrepreneur affects the survival, resilience and growth of their business endeavours (Ayala and Manzano, 2014). The entrepreneurial resilience of the participants is significantly bolstered by the technologies as their beliefs in having additional capacities and the necessary technological skills and other business competencies grew. Furthermore, the participants' positive and confident dispositions, in the face of challenges, are characteristic of self-efficacy and the optimistic dimensions of entrepreneurial resilience (Ayala and Manzano, 2014;Branicki, Sullivan-Taylor and Livschitz, 2018). From the analysis, the educational background and age of the participants play a role in influencing the participants' ability to explore and exploit internal growth opportunities with the use of technologies more successfully than others. For instance, the participants under the age of 40 showed they are more willing to explore and take risks in employing digital technologies in innovative ways, while those who are older seemed to be more conservative in their entrepreneurial endeavours. Thus, in drawing from the TACT, the motivation and abilities of the entrepreneurs influence the use of the technologies to drive the growth strategy for the businesses. However, while there is evidence of a potential relationship, the data were inconclusive about the effect of a firm's lifespan on the SME's growth mode and resilience. Specifically, results from the data suggest that regardless of the age of the business entity, the variation in the business strategy plays a more powerful role in determining approaches in how the participants use digital technologies for innovative market growth approaches and enhanced entrepreneurial resilience.

Pluralism of Resilience and Digital Entrepreneurship in Global South

As outlined in **Figure 4.4**, entrepreneurial resilience is one of the aggregate themes which emerged from the experiences of the female digital entrepreneurs. From the literature and as echoed in the findings, entrepreneurial resilience is described as the enhanced ability of the entrepreneurs to implement adaptive processes and capacities to pivot and respond to their main challenges to achieve business transformation and sustainability (Alhothali and Al-Dajani, 2022). In fact, the centrality of entrepreneurial resilience to the success of female entrepreneurs (Ayala and Manzano, 2014) is shown not only as an automatic goal, but also as a systemic process towards transformation in a new and dynamic business ecosystem (Acevedo-Duque *et al.*, 2021; González and Macias-Alonso, 2023). Evidence of new possibilities and the implementation of additional capacities for business transformation highlights useful learnings from the Global South based on the innovation of small and micro female entrepreneurs through digital technologies. This is particularly critical in light of the seeming unbalanced perspective that characterises digital entrepreneurs as being tech savvy and highly resourced as mostly those who are white, male and mature from the Global North (Nambisan, Wright and Feldman, 2019). In particular, in this digital era, it is difficult to discount the influence of the embeddedness of such conceptualisations which are reflective of a replicability of Silicon Valley on digital entrepreneurship globally (Baker and Welter, 2024). Invariably, this ongoing perspective emanating from the Global North not only renders invisible the efforts of female digital entrepreneurs operating in Silicon Valley but also uses these to assume a gender-neutral, decontextualised and dehistorised environment in digital entrepreneurship in all regions of the world (Baker and Welter, 2024).

Yet, as the empirical data from the study showed that female digital entrepreneurship exists and happens everywhere, the researcher surmises that the Caribbean context provides a novel space for promoting new and diverse ideas on their business endeavours and environment. For instance, although they are mostly driven by their improved capacities, as well as proactive and coping mechanisms to transform their contextual constraints into opportunities, this study also reveal that by using digital technologies, the female entrepreneurs are able to deconstruct and reconstruct their entrepreneurial processes and outcomes within their local socio-economic environments. This result corroborates with underscoring the importance of the agency of the female entrepreneurs in “doing context” in entrepreneurship (Henry and Lewis, 2023; Hashim, McAdam and Nordqvist,

2024) as the female entrepreneurs are able to capitalise on the fluidity and the boundary openness in order to have novel breakthroughs or create innovations in their business operations. At the same time, this finding shows that with the use of the technologies, the female entrepreneurs can adopt two mutually reinforcing paths of actively dismantling existing barriers and entering the entrepreneurial environment and becoming involved in the transformative processes. Additionally, by building on the TACT and contextual lens, with emphasis on the affordances or the action potentials aspects, this finding resonates with other previous studies which reveal that women participate in entrepreneurship due to factors that are driven both by necessity and opportunity (Martin and Wright, 2005; Hughes *et al.*, 2012) and where the role played by the women is central to the business performance and outcomes (Hashim, McAdam and Nordqvist, 2024). Furthermore, with the adoption of feminist perspectives, *how* gender is considered and investigated in this study elucidates the layered and embedded gendered conditions that female entrepreneurs face in addressing the challenges of entrepreneurial resilience in the Caribbean context.

Towards Shaping Socio-Cultural Context

It is important to highlight that the socio-cultural context of the Caribbean countries contradicts the stereotypical notion of submissive and passive women and how female entrepreneurs from developing countries of the Global South perceive themselves (Slocum and Shields, 2008). This is of particular relevance, as empirical data from the Caribbean context challenge the homogenised assumptions of female entrepreneurs in the Global South as being generally poor, uneducated, ignorant, and traditional (Kerner, 2017). Instead, the actions of the participants are characterised by creativity, self-confidence, active collaboration and networking, which not only compares with prescribed Western representations of being educated, modern and free, but also suggests a strong nexus between their social and temporal contexts and a deliberate strategy and approach to build capacity (of self and other entrepreneurs – who are mostly women) in order to shape their social contexts. Furthermore, as previous studies have shown that Caribbean women are known to challenge limits placed upon them (Slocum and Shields, 2008), their use of digital technologies reveal that these tools provide an opportunity for female entrepreneurs to reinvent their business activity, overcome contextual constraints, and become creators of transformation strategies for their businesses through enhanced capacity building, information sharing, mentoring, networking and among others. At the same time, although the concept of digital technologies is so positively

charged with hopes and potentials of being a major game changer (Pecis and Berglund, 2021), it is important to emphasise that the reflexivity of the participants themselves did not create blindness towards romanticism of their perspectives in the digital entrepreneurial environment, as they also gave insights of their authentic lived experiences; inclusive of those related to the constant changes and uncertainties, gender biases, and the blurring of private boundaries within the digital entrepreneurial space (Nambisan, 2017). In this regard, issues of emancipation and meritocracy did not feature as being influential nor prominent for transforming female digital entrepreneurship in the region (Rindova, Barry and Ketchen, 2009; Martinez Dy, Martin and Marlow, 2018).

In the same vein, based on the researcher's reflexivity, note is taken of the social context of female digital entrepreneurship with typical characteristics of: (a) blurred and tense boundaries between work and life (Kelly and McAdam, 2022b); (b) stereotypes of digital aesthetic images of successful women of gendered images characterised as mostly lean, fit and white (Smith, Nadin and Jones, 2019; Kelly and McAdam, 2022a); and (c) associated sectoral ideologies related to services in entrepreneurship (Henry and Lewis, 2023). This not only helps to cover some research gaps that failed to illuminate heterogeneity among female digital entrepreneurs (Audretsch *et al.*, 2024), but also provides positive links between improved resourcefulness and SME growth and a proactive approach to being resilient in the face of challenges and constraints. For instance, the findings highlighted the significant presence and importance of family networks that provide care for children and other domestic responsibilities, as well as the family support to the female business endeavours. Hence, this reality needs to be contextualised in view of the relatively limited structured and affordable care-giving services in the Caribbean region (Pounder, 2015). In view of the high number of female-headed households in the region (Slocum and Shields, 2008), there is a need to place careful attention to the meaning of entrepreneurial resilience through digital technologies for these participants. In fact, more than marital status, the family networks are crucial and affect entrepreneurship. The notion of self-sacrifice for family members - particularly children - was evident in the participants' business decisions. The impact of integrating digital technologies in their business endeavours provides alternative additional support for women such as more flexible arrangements to manage and operate their businesses without reneging on domestic responsibilities.

Attenuating Constraints of Islandness Context

Moreover, the use of technologies also contributed to boosting their entrepreneurial resilience as this compensated for the contextual constraints of operating their businesses in small, remote and fragmented island spaces. Another important nuanced dimension of these technologies is that the participants provided evidence of their children, spouses or other family members lending necessary technical support to mitigate “technostress” of being overwhelmed with the technological changes and demands of their businesses. Yet, cognisant of the divergent perspectives on the tension between work and life boundaries in using these technologies (Kelly and McAdam, 2022a), these results should not be taken in abstraction as a global portable recipe for female digital entrepreneurs across the world. Instead, there is a need to give due consideration to understanding how the contextual factors of the region depict an interwoven complexity of the cultural, socio-economic norms (Freeman, 2014;García-Morales *et al.*, 2021). This is a view that resonates with gendered contextual approaches (Welter, 2020). Therefore, this in-depth exploration of how female entrepreneurs in the Caribbean interact with digital technologies within their environments portends significant scope for contributing to feminist theories in entrepreneurship and policy development, particularly within the distinctive dynamics of entrepreneurship in SIDS.

Enhancing Nuanced/New Gender Narratives

In reference to the focus on SME growth in the context of SME resilience, it is difficult to ignore the complexity in identifying the unique gender issues, as there is a tendency to ascribe gender considerations only to people and not to enterprises and organisations. These gender issues have been highlighted and questioned by critical scholars who analysed the prevalent narrow focus on economic growth in female entrepreneurship (Calás, Smircich and Bourne, 2009;Dean *et al.*, 2019) and the attendant link to the underperformance of female-owned businesses as hegemonic masculine norms (Ahl, 2006;Marlow and McAdam, 2013). Attention to the socio-cultural mechanisms which maintain or silence the gendered nature of economic growth, unearth tendencies of portraying entrepreneurs as men who are white, resourceful and dynamic and of perceiving female entrepreneurs as white middle class business women (Smith, Nadin and Jones, 2019;Hussain, Vershinina and Carey, 2024). Similar to the existence of different economic growth theories (Wennekers and Thurik, 1999), there are diverse groups of female entrepreneurs who, are

axiomatically labelled as lacking legitimacy, identity and credibility in the entrepreneurial space, if the underlying factors of their disadvantageous positions are not carefully unpacked and assessed (Ahl and Marlow, 2012; Yamamura and Lassalle, 2021; Hussain, Vershinina and Carey, 2024). Additionally, with the recognised “depersonalised” online dimensions of digital businesses, there is therefore a higher possibility that the existing gender issues that may be more visible to the consumer are that of the enterprise and not of the female digital entrepreneurs (Martin and Wright, 2005; Pecis and Berglund, 2021). This situation can inadvertently relegate other nuanced gender insights related to the resilience of female digital entrepreneurs to superficial or non-existing status. In this regard, the researcher notes that the Caribbean context (of place, gender, and digital) is an overarching factor that influences every facet of the lived experiences of the female digital entrepreneurs. More importantly, as the results provide insights and paradoxes related to the adaptability, as well as the growth and sustainability strategies of these SMEs (Suseno and Abbott, 2021), the researcher argues that the agency of the female digital entrepreneurs plays an integral role in the overall transformation process.

6.4 Agency through Empowerment and Towards Entrepreneurial Leadership

In the context of this study, the notion of agency refers to the processes by which the female entrepreneurs make decisions, resources refer to how they carry out agency, and achievements are the outputs derived from the agency employed by the female entrepreneurs (Pineda Duque and Castiblanco Moreno, 2022). Viewing the actions of the participants in the entrepreneurial environment, the access and use of digital technologies impacted their resource base, and their decision making towards improving efficiency in their business processes and results. Despite the previously mentioned physical constraints of islandness, the fact that the technologies improve proximity to customers and suppliers, as well as access to capital suggests that the region can be viewed as a more attractive business location for women. While literature on the locational behaviour of entrepreneurs is generally analysed by demonstrating the interplay between the embedded agency of the individual and the location (McMullen, Wood and Kier, 2016), in this study it is the online space that is making a significant difference. Indeed, the result of enhanced entrepreneurial resilience is driven by a confluence of passionate attitudes and entrepreneurial

activities that are enabled by the technologies and ultimately geared towards establishing and managing innovative business ventures (Cummings and Lopez, 2023). The diversity of the experiences and of entrepreneurial empowerment and leadership (as depicted in Section 5.3 and Section 5.4 respectively) from the narratives of the participants give additional and new voices and insights into the discourse.

Sinews of Leadership Identities

The female digital entrepreneurs involved in the study have provided accounts of their lived experiences which highlight contradictions, complexities and ambiguities as they seek to craft their entrepreneurial leadership identities (Dean and Ford, 2017). Even in terms of improved work-life balance and offerings of flexibility to work remotely; inclusive of working from home, the literature suggest that such experiences point to broader notions of liberal agency and the emancipation of female entrepreneurship from the constraints of socio-economic systems (Alhothali and Al-Dajani, 2022). Cognisant of the tenuous assumptions and ideological foundations of a dominant rational masculine model used to benchmark entrepreneurial leadership (Dean *et al.*, 2019), the participants' narratives shed light on the emic and etic perspectives of the leadership practices of female digital entrepreneurs in a dynamic digital era (*Refer to Sub-section 5.4.3*). Hence, the lived experiences bring to the fore insights on a meta-narrative (Dean *et al.*, 2019) that still exists and is observed by female digital entrepreneurs as they navigate the entrepreneurial ecosystem. Invariably, the narratives illustrate that the digital context within which the female entrepreneurs operate are characterised by capitalist social relations, fluid structures and gender issues (Kelly and McAdam, 2022a). In addition to the instrumentality of these technologies in transforming the business environment to be dynamic and permeable spaces, and generally more fluid structures, the agency of the female entrepreneurs is emphasised in their amplified voices and social relations. Although there is evidence which suggest that the technologies present a novel dimension of subtle ideological overtures (Verduyn and Essers, 2013) relating to the spatial-temporal barriers between the home and workplace, inherent in the narratives are overt and active attempts to resolve identity and boundaries (Kelly and McAdam, 2022a). Through radical or incremental changes, the female entrepreneurs use the technologies to spur and facilitate empowerment and new leadership possibilities. For instance, the account of the participants highlighted the liminal space of transformation for these female digital entrepreneurs,

as well as demonstrated that the dual space in which they operate render them as leaders with active agentic capabilities, and individuals who are in transition in the digital space. As a result, these female digital entrepreneurs tend to engage with gender and identity considerations which lead to the production and reproduction of representations of masculinity and femininity (Marlow and McAdam, 2013). Therefore, while the gendered assumptions about entrepreneurship are generally at odds with women's identity (Brush *et al.*, 2018), the interconnectedness of their practices and performances in the digital space reveal gender stereotypes. Moreover, in using feminist lens, the shared experiences of the participants help to shed light on the complex intertwining of feminine ideals with marked masculine practices of the female digital entrepreneurs (Mughal, Stead and Gatrell, 2021).

Articulating Meaning and Interpreting Leadership and Empowerment Dynamics

While several streams of literature present digital entrepreneurship as a “great leveller” (McAdam *et al.*, 2020) in empowering and enabling greater economic participation for women, the findings illustrate that this claim remains debatable (Dy *et al.*, 2017). Despite the benefits derived from the technologies through enhanced resourcefulness and affordances, in some instances the research participants deemphasised the gendered utilitarian perspective of networking and instead emphasised the value of sorority, interpersonal relationships and social richness (Dean and Ford, 2017; Dean *et al.*, 2019). Comparatively, while these female entrepreneurs are deemed to be highly resource-constrained (Foss, 2010) because of the geographic (remoteness and fragmentation) and socio-cultural normative contexts, they are also considered more malleable to adapt in the face of crises (Alhothali and Al-Dajani, 2022). Therefore, in instances of scarce resources, the empowerment of the female entrepreneurs through digital bricolage¹⁴ has strengthened their creativity and innovation, boosted value creation, and enhanced their ability to exploit business opportunities and enriched their knowledge.

¹⁴ Digital bricolage is a process which involves micro and small enterprises using and configuring their personal digital resources (such as mobile phones and social media networks) to create some kind of business activity or outcome Rüling, C.-C. and Duymedjian, R. (2014) 'Digital bricolage: resources and coordination in the production of digital visual effects'. *Technological Forecasting and Social Change*, 83 (1), pp. 98-110. <https://doi.org/10.1016/j.techfore.2013.05.003>.

These findings suggest that the empowerment of the female digital entrepreneurs is a journey through which they enhanced their ability to make strategic business choices and decisions towards fostering a culture of inclusivity and collaboration and ultimately driving female entrepreneurial success (Brush, de Bruin and Welter, 2009). By recognising the unique experiences of female entrepreneurs (inclusive of those who are highly vulnerable and marginalised), the participants perceived the use of digital technologies as important to creating a more inclusive entrepreneurial environment by using networks and providing online mentoring to build capacities and encourage female entrepreneurs to assume leadership roles. This does not only contribute to enlarging women's entrepreneurial passion/spirit (Aman *et al.*, 2022), but is also important in fostering a sense of belonging and a full expression of women's identities in the entrepreneurial landscape. Despite critiques of women's homophilous networks as being prone to put women at a structural disadvantage (Woodward, Wood and Schnarr, 2021), the results illustrated enhanced opportunities for the participants to build critical social capital and to better control their resources. Hence, through these nuanced leadership opportunities, the female entrepreneurs manifested a broader and higher level of capital (Pret, Shaw and Drakopoulou Dodd, 2016) and took deliberate steps to overcome gender inequalities, which not only has the potential to positively impact on their individual growth but also lead to social transformation (McKeever, Anderson and Jack, 2014).

Furthermore, the use of digital technologies to construct the leadership-self of the female entrepreneurs provides insights that challenge general leadership assumptions by rethinking and redesigning strategies that are geared towards the conceptualisation of entrepreneurial leadership as the ability to influence and learn from others rather than as a position (Aman *et al.*, 2022). This insight echoes the argument that entrepreneurial leadership is not only about the attributes of the individual, but also about their agency to craft their business environments and to serve their communities (Galloway, Kapasi and Sang, 2015).

Navigating Power Dynamics and Relations

From the empirical data, it is shown that with digital technologies, the female entrepreneurs are better able to obtain information and learn about their entrepreneurial contexts across multiple levels (Pineda Duque and Castiblanco Moreno, 2022) and even beyond the Caribbean context. Considering the novelty of digital entrepreneurship in using digital technologies to gain knowledge

and know-how by the participants on how to mobilise others, as well as, to create and sustain business transformation suggest their understanding of power relations within the context of the entrepreneurial environment (Welter and Baker, 2021). By applying post-colonial feminist lens, the power relations among the participants is demonstrated not in their power dynamics but rather in their sense of relationships as espoused in their efforts towards inclusivity, sisterhood and feminine solidarity (Kerner, 2017). While the technologies embody promises of demystifying and transforming businesses, most of the participants chose to be role models, acting as mentors, for many female entrepreneurs and not just a few, including young girls. Hence, through the use of digital technologies, the female entrepreneurs are able to understand and learn by listening and reflecting on the stories and experiences of others in a “safe space”. Fundamentally, this safe space refers to an environment within which the female digital entrepreneurs feel unfettered to be vulnerable, as there is a sense of freedom of biases, criticisms, and even conflicts. With this not being a one-off encounter among the participants, there is scope for significant cumulative knowledge to be built over time.

In practice, therefore, gaining empirical knowledge of power structures and historical assumptions are important ingredients to design and implement how to effectively influence other female entrepreneurs and ultimately to reshape their entrepreneurial context. Oriented with a heightened sense of purpose to serve their entrepreneurial community, the female entrepreneurs strategically used digital technologies to bolster their agency to influence other female digital entrepreneurs to embrace and implement their brand of entrepreneurial leadership. As argued by Galloway *et al.* (2015), the findings of the study show that leadership in entrepreneurship can be characterised as beyond the position of a person towards a more nuanced understanding of being an inseparable combination of the properties of the person and their attendant situated practices (Galloway, Kapasi and Sang, 2015) as is epitomised by the participants. Interestingly, also, the symbiotic relationship that has developed between the participants and the technologies seems to echo with the view that gender in the on/offline space (Dy *et al.*, 2017) is a situational practice that is done by “other” entrepreneurs, who are beyond the stereotypical masculine hero entrepreneur in developing countries (Marlow and McAdam, 2013) and the traditional (s)hero theorisation (Treanor, Jones and Marlow, 2020).

6.5 Towards Conceptualisation of SHERO

In moving away from the traditional masculinised entrepreneurial leadership hero model as criticised by Treanor, Jones and Marlow (2020), this study reveals how Caribbean female digital entrepreneurs use the technologies to navigate inequalities and develop their entrepreneurial “SHERO” which is the acronym for Sustainability, Hope, Empowerment, Resilience and Optimism (Best, Lassalle and Nicolopoulou, 2024). Intrinsically, the findings demonstrate that the use of digital technologies influences entrepreneurial **Sustainability**, fuels **Hope**, fosters **Empowerment** and **Resilience**, and encourages **Optimism**. As individual topics, these relate to issues of female entrepreneurship in general (Foss *et al.*, 2018) that have gained increased attention of scholars and policy makers in Western societies. SHERO emphasises innovative conceptual lens that amalgamates diverse inter-connected levels of business transformations. In fact, while the literature points to the importance of these topics, the researcher focuses on the empirical results to draw attention to a broader and more insightful conceptualisation of SHERO (Best, Lassalle and Nicolopoulou, 2024).

Specifically, by acknowledging the situatedness of female digital entrepreneurs, the researcher extends the traditional (s)hero conceptualisation and theorisation (Treanor, Jones and Marlow, 2020) by incorporating a nuanced SHERO framework from a post-colonial feminist perspective (Ozkazanc-Pan, 2012), and by recognising the specific practices of female digital entrepreneurs in the Caribbean context of post-colonial small island nations. In this Section, the researcher presents a description of the core elements of the SHERO framework, as shown in **Figure 6.1**, to provide a deeper and a more holistic understanding of the potential opportunities and the path for building enhanced “Sustainability, Hope, Empowerment, Resilience and Optimism” for female entrepreneurship in the Caribbean context. In essence, this is a non-reductionist perspective of the interplay between entrepreneurial context and normatives (Welter and Baker, 2021).

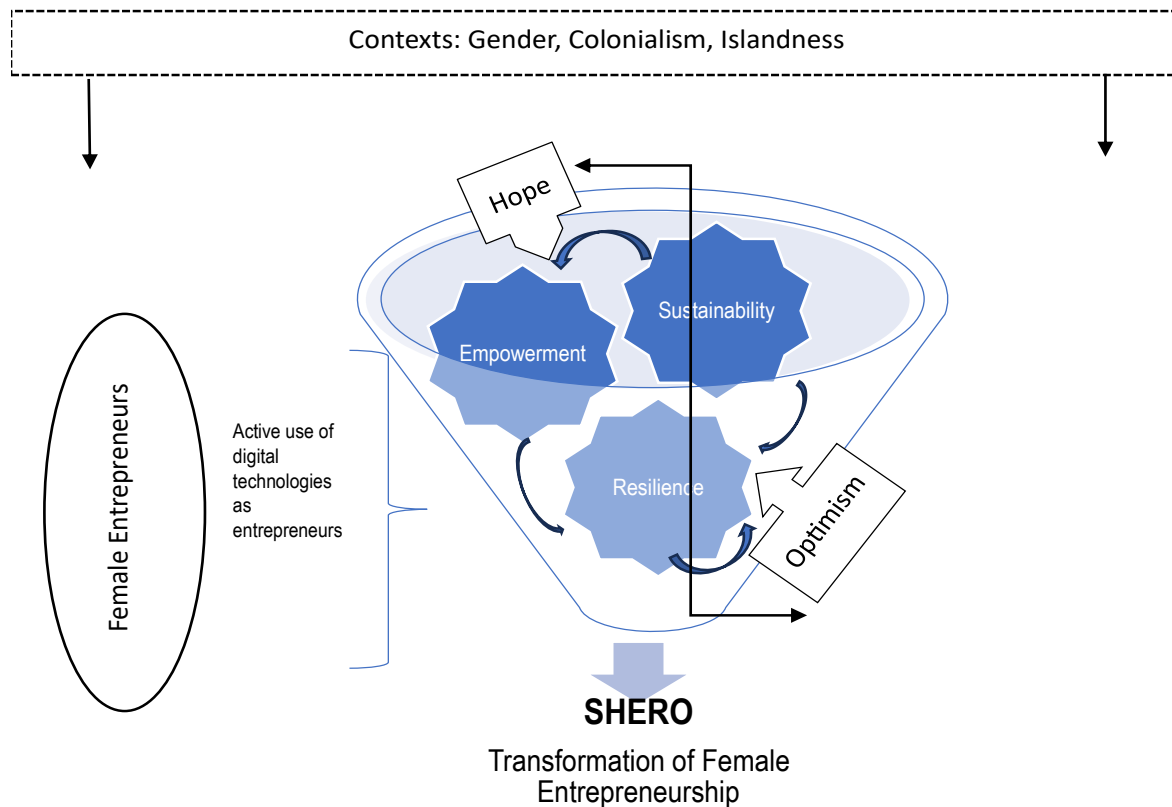


Figure 6. 1: The Core Elements of the Female Digital Entrepreneurship SHERO Framework

Source: Author's Own

6.5.1 Sustainability

Although similar to other SIDS with limited geographical size and associated limitations of multiple resource scarcities, each of the Caribbean island states has separate governance arrangements with separate accompanying institutional structures, while at the same time being members of regional integration structures and movements such as the Caribbean Community (CARICOM) and the Organisation of Eastern Caribbean States (OECS). To better grasp the sustainability-related changes that are central to the unique phenomenon of the Caribbean context,

the researcher delves into the dynamics of collaboration and organisational operations of the female-owned business entities.

The sustainability effects for the female entrepreneurs working with digital technologies feature heterogeneity of changes related to the economic, as well as the socio-cultural dimensions of their operations. The framework emphasises that the female digital entrepreneurs are able to thrive in the context of their “islandness” (Hall, 2012) which is further reinforced by wide expanses and boundaries of water among the islands that are also individual sovereign states. With the use of digital technologies, they were able to shift from a “survivability to sustainability” frame of reference to overcome challenges of remoteness and peripherality and instead capitalise on promoting the natural assets of the islands to people in regional and international markets. The relatively small population sizes of the countries within which the participants operate (ranging from approximately 280,000 to 4,200,000 persons in Barbados and Jamaica respectively), can render the attainment of the full potential of business entities seem a daunting task. Hence, the way in which the female entrepreneurs interacted with the technologies to translate new opportunities afforded by the technologies enabled them to transition from focusing solely on local markets to these larger target audiences that are more aligned to creating long-term commitments of sustainability. By showcasing how the participants capitalised on the complementary effects of digital technologies in overcoming liabilities of smallness (Vershina *et al.*, 2020) and remoteness and instead creating more favourable non-spatial proximities (Yamamura and Lassalle, 2022), the conceptual lens provide nuanced avenues to consider entrepreneurial sustainability among island states.

It is important to note that within the functioning of the female-owned businesses, there were already existing some inherent elements that are required to transition and influence the change journey towards improved sustainability. This is observed in the deliberate business decisions made by the participants to ensure that the underlying thrust of their ventures is not principally rooted in the pursuit of wealth generation, but rather in building sustainable ventures that pay attention to providing products and services that positively impact the lives of others - inclusive of their communities, families, and staff. In considering how the context of their business endeavours shaped the focus of their product and service offerings, useful insights are gained from their

business ethos and approach. While conceptually, “islandness” signifies remoteness (Merouani *et al.*, 2023), paradoxically it also engenders a type of social proximity and community spirit that is necessary for overcoming the contextual constraints. This presents an interesting result which has further implications for the large aspirations (in terms of temporal context) of the entrepreneurial activities of the women that require innovation to achieve them. Moreover, the use of the technologies by the female entrepreneurs is shown to be instrumental in addressing constraints that emerge from limited knowledge spillover from the communities to promote and share information about their products and services and ultimately increase community knowledge, broaden market competition and improve growth and sustainability of the business entity (Jones, Martinez Dy and Vershinina, 2019).

Systematic indications of having an entrepreneurial drive to do something different and enrich the lives of others underpinned the entrepreneurial attitudes and activities of the participants. Irrespective of their relatively high educational attainment (ranging from high school diplomas to post graduate certificates), the ethos of their engagement with the technologies was principally to promote human connection (Roblek *et al.*, 2021). Of importance is that the participants’ conceptualisation of digital technologies revealed how their normative cultural expectations determined how they engaged with these technologies in their business endeavours (Chhabra *et al.*, 2020). The high premium and sense of responsibility the female entrepreneurs placed on contributing to society is evident in their efforts to close the digital gender divide (Gaweł and Mińska-Struzik, 2023) through the provision of training and learning opportunities in the entrepreneurial environment. This has improved the capacity of the participants to be part of the digital environment which, through their agency, further enables them to circumvent contextual challenges of “islandness”, to reduce the risk of business failure and ultimately to impact business sustainability.

Another important insight gleaned is that through the use of digital technologies, the conceptual skills of the participants were affected as they acquired the capacity to view their enterprises as a whole and were able to coordinate diverse interests and activities that include the wellbeing of the staff. Examples of such activities included online training opportunities, options for remote working, and more regular online connection to provide support and share information on a timely

basis. Based on the findings, TACT and post-colonial feminist theory support the unveiling of the complementary impact of the agency of the participants to utilise the technologies to unlock potentials in enhancing socio-economic development and the opportunities for improved human connections in business. In essence digital technologies and the practices of the female entrepreneurs are tightly intertwined (Majchrzak and Markus, 2012). Hence, in the quest towards entrepreneurial sustainability, bringing together their insights provides a broader and more comprehensive explanation of how a more transversal transformational approach is achievable.

Yet another issue that is worth highlighting in the discussion is the extent to which social media platforms enable direct and immediate interaction among stakeholders (Vershina *et al.*, 2020) and the sustainability of the impact. This is deemed relevant considering the cognitive process for stakeholder influence - coherence, unity of purpose and persistence. Therefore, given the propensity for the process of heterogenous convergence to be derived from the ease of stakeholders and consumers being able to broadcast their perspectives on social media platforms, it is also possible that this can lead to the diffusion of collective actions across diverse stakeholders (Barnett, Henriques and Husted, 2024). Therefore, it has been argued that the lack of synchronicity on social media platform can render stakeholder influence short-lived and ineffective with limited lasting impact on firm behaviour (*ibid.*) and ultimately unsustainable. Notwithstanding, the findings have already shown that the female entrepreneurs exercise their entrepreneurial agency to manage their corporate social media by providing information, clarification, and remedies that can help limit any potential fallouts caused by information overload or the spread of unverified or misleading information which can further lead to manipulation and market volatility. Hence, with the prevalence of social media in digital entrepreneurship, there is a need to further explicate the degree of stakeholder influence consumers might have over firm behaviour in the digital age and space towards corporate sense-giving among female digital entrepreneurs.

6.5.2 Hope and Optimism

The findings guided the theorisation on the link between entrepreneurial hope and optimism and the transformation of firms, given the relative sparse literature on their conceptualisation. In referring to hope, the researcher refers to a process of having agency and pathways to achieve

goals, and by optimism the focus is on having a positive outlook on the future. Cognisant of the nuanced differences in these two processes, the researcher observed a more powerful impact when they work in tandem. A new perspective on entrepreneurial hope and optimism is espoused through the development of the integrative framework shown in **Figure 6.1** that captures the connection between, essentially internal and intangible discourses on the digital transformation of SMEs (Pergelova *et al.*, 2019), which is also influenced by the environment and the contexts external to the business ventures (Aman *et al.*, 2022). It is important to stress that the participants themselves emphasised that hope and optimism are innate aspects of entrepreneurship. Hence, while it may be unfathomable to consider that anyone would become an entrepreneur if their attitudes were not anchored in hope and optimism towards exploring business opportunities, the study points to nuanced higher-order considerations and meanings. Therefore, in using the perspectives of the participants to be the mirror or echo of what exists in the region, the researcher is better able to understand and gain insights on how the technologies are revolutionising hope and optimism outside the norm in entrepreneurship.

This study shows that digital technologies have been a source of significant enthusiasm and self-confidence which is translated into the capacity of the female entrepreneurs to navigate the digital spaces in which their businesses operate. Armed with a deeper sense of optimism, the technologies evoked greater hope in the new opportunities provided to balance the focus of their entrepreneurial ethos to addressing societal problems and challenges, as well as that of making a profit. Invariably, the hope of the female entrepreneurs mushroomed with an increased access to and use of digital technologies which equipped them to broaden and bolster their entrepreneurial drive and motivation beyond the economic growth discourse. On reflection, the aura of entrepreneurial hope espoused by the participants resonates with the sentiments of the poem titled “Hope is the Thing with Feathers” written by an American Poet, Emily Dickinson, in which she emphasised that this type of hope is unconventional as it is sustained even when faced with challenges (Skorczewski and Celenza, 2024). Advancing on this notion in the context of Caribbean islands, characterised by relatively small populations where the average number of employees of the entities owned by the participants ranged from 1- 4 persons, digital technologies contribute to the “power” of hope and bolster optimism by allaying their fears and concerns related to physical burn-out, as well as

low entrepreneurial activity and low market dynamism which are generally associated with SME and small markets respectively.

Furthermore, regardless of the level of digital entrepreneurship (light, moderate or extreme) practised by the participants, the technologies offered opportunities for flexibility, agility and generativity towards innovation in their business outcomes or processes. The results showed a range of business transformation in relation to the divergent contexts of the online social capital within the digital space of the different digital entrepreneurs. The link between hope and optimism was exemplified in the participants' conceptualisation of their use of digital technologies as an avenue to generate novel ideas, identify and mobilise resources, capitalise on new market opportunities, gather information and create legitimacy for business innovation.

The application of entrepreneurial hope and optimism also hinges on concerns with confronting traditional mindsets in the entrepreneurial ecosystem of these island nations. For instance, there are the underlying historical gender-specific mindsets and superficial statements which generally characterise women as technophobic and not likely to be tech savvy, as well as the tradition in the digital space in which technologies are portrayed as a male domain and described as “toys for the boys” (Hilbert, 2011). The logic of this reality is that the increased entrepreneurial hope and optimism facilitated by the technologies can be thwarted, leading to a vicious circle between long standing inequalities of biases and challenges in the new digital environment. Therefore, notwithstanding their proven benefits of embracing digital technologies to explore novel opportunities in their online operations, female entrepreneurs also need to be alert and bold to call out gender-related inequalities and contextual challenges they encounter. This is because in light of the plethora of constraints faced by female entrepreneurs in their operations, the results demonstrate that in the realm of digital transformation of their business processes and outputs, the technologies offer opportunities that amplify their sense of optimism and hope in an increasingly demanding and uncertain business environment. This is unsurprising, as the results point to the participants being confronted with a “triple masculinity trap” (Reyes and Neergaard, 2023, p.80) that includes the consequences of having to conform to male stereotypical behaviour related to and embedded in entrepreneurship, digital technology and a post-colonial business environment within the Caribbean context. Considering these embedded gendered stereotypes and practices, the results

elucidate how the female entrepreneurs use the technologies as an important fillip to “do entrepreneurship” in a male dominated environment. These findings provide valuable inputs for a novel conceptual framework of SHERO that shows the relationship between entrepreneurial sustainability, empowerment and resilience from the use of digital technologies by female entrepreneurs can be further strengthened while entrepreneurial hope and optimism are simultaneously promoted as underlining coping mechanisms.

6.5.3 Empowerment

In Section 6.4 of this study, the results clearly demonstrate that digital technologies play a role in empowering women to become entrepreneurs and operate in the entrepreneurial environment. Given that the profound integration of female entrepreneurship with digital entrepreneurship expands on the notion that gender is not obsolete (Ferrando, 2014), this section focuses mainly on the nuanced gender issues related to the empowerment of the participants.

To some extent, the findings support the viewpoint that there are aspects of digital transformation that tend to maintain the gender divide in entrepreneurship (Gaweł and Mińska-Struzik, 2023) even if the scope and nature differ due to the range of contextual dimensions. As digital technologies are advancing constantly, this suggest that the challenges and opportunities of digital entrepreneurship for empowering women are diverse and complex. As seen in the theory of capitals promulgated by Bourdieu (1986), where the different forms of capital (social, financial, cultural and symbolic) are interrelated conceptualisations of capital which generally merge and meld to support business growth and transformation (Shaw *et al.*, 2009), the pervasive and intense enablement of digital technologies portends to have the potential to impact human agency in entrepreneurship in new directions.

The ingrained socially constructed particularities that tend to link digital technologies and women at a lower level of engagement within digital entrepreneurship (Reyes and Neergaard, 2023) does not feature strongly in the findings. In fact, the researcher notes that through digital platforms, the female entrepreneurs took the initiative to create more business opportunities and to expand their entrepreneurial landscape and overcome contextual constraints, which is critical in empowerment

towards building self-efficacy (Ahl and Marlow, 2012). This finding provides a foundation for turning the existing digital gender divide into an opportunity, given the participant's affinity to use digital technologies as tools to enhance the operations of their business ventures and that these tools exemplify tangible and concrete opportunities to tackle gender inequality in developing countries (Huang and Cox, 2014; OECD, 2022). Notwithstanding, the researcher surmises that stereotypical biases of agentic entrepreneurial deficits associated with female entrepreneurs, which are infused with assumptions of a neutral Web (Dy *et al.*, 2017) can be compared to a "digital double bind" on female digital entrepreneurs (McAdam, Crowley and Harrison, 2020) that can negatively impact the benefits of empowerment. The researcher further surmises that since in the literature digital technologies and technological prowess are often associated with masculinity, and that digital entrepreneurship is mostly perceived as a gender-neutral field (Reyes and Neergaard, 2023), the study provides important insights and counter-arguments based on lived experiences. Indeed, the empirical evidence highlights underexplored contradictions of female entrepreneurs who are characterised as SMEs in island states by navigating embedded gender norms in the digital space, and in male dominated settings and sectors, through deliberate mentorship, networking, capacity building and even outsourcing of the technological aspects of the business operations. Moreover, this indicates that in an island setting, there seems to be a strong proclivity for female entrepreneurs to use the technologies to confront generic gendered socialisations and gendered entrepreneurial conditions not just to adapt and innovate, but also to simultaneously "do context" (Baker and Welter, 2020) and "do entrepreneurship" (Bruni, Gherardi and Poggio, 2004). In so doing, the study advances the perspective on how female digital entrepreneurs differ from female entrepreneurs in general. Therefore, the study demonstrates the empowering effects on the female entrepreneurs arising from their agency and provide opportunities to transcend imposed boundaries and constraints of socio-economic systems through their use of digital technologies, while at the same time offering insights on how contextual gendered issues can negatively affect their longer-term impact.

6.5.4 Resilience

The resilience results presented in this study have shown how female digital entrepreneurs who own SMEs and are operating within SIDS contexts are transforming the business environment in

the Global South. As discussed in Section 6.3, the nuanced entrepreneurial resilience that emanated from the interplay of digital technologies and female entrepreneurs presents the dawn of a more inclusive and dynamic worldview of the concept. Drawing attention to the insights from the findings outlined in Section 5.2 and the synthesised perspectives uncovered in Section 6.3, the results showcase an entrepreneurial resilience pathway that is inextricably linked to both self and organisation (Herbane, 2019), as well as an interdependence between the participants and other entrepreneurs within the entrepreneurial environment. As mentioned under Section 5.2, entrepreneurial resilience is a process characterised by the ability of a business to adaptively respond, innovate and create opportunities when facing threats and crises (Branicki, Sullivan-Taylor and Livschitz, 2018;Herbane, 2019). Cognisant that entrepreneurial resilience is not static and that there is continuous dynamism and uncertainty in the digital space which evolve over time (Tim and Leidner, 2023), its scope encapsulates strategic responsiveness and strategic renewal or reinvention (Herbane, 2019). Interestingly, such strategic orientations have been employed either to advance or to challenge the mechanisms and capacities of the SMEs.

From the results, the perspectives of building entrepreneurial resilience through the exercised agencies of the participants to influence un-exploited or under-exploited opportunities in the entrepreneurial contexts illuminate the concept in a deeper way. For instance, there is the recognition of entrepreneurial resilience as an unfolding response of the participants to the challenges faced in their entrepreneurial environments. Moreover, the researcher sees a predominant shift of the entrepreneurs to “build forward better” rather than “build back better” or “bounce back” as was advocated by many in the aftermath of the COVID-19 pandemic. Notwithstanding the results of heightened hope and optimism, the role of digital technologies are not viewed as a panacea for dealing with crises and challenges (Tim and Leidner, 2023). In fact, the risks of unintended consequences emanating from the dark side of the technologies (such as cybersecurity issues and the gender divide) (Giones and Brem, 2017) can render entrepreneurial resilience a temporary coping mechanism or an elusive capacity among female digital entrepreneurs. With the United Nation’s designation of resilience as a strategic priority of the SDGs for all organisations and enterprises (Tim and Leidner, 2023), the global significance of its achievement by 2030 is amplified. Additionally, in reiterating the findings related to entrepreneurial resilience as those of capacity building; resourcefulness and affordances;

information for self-efficacy, critical thinking, decision making and productivity; and diversification and representation, the important role of the technologies is shown as an enabler and a driver of an alternative resilience (*Refer to Section 5.2*). Based on the interdependence of these areas in business transformation, the researcher equally underscores the crucial need to see the role of digital technologies in pointing to new and even more expansive directions for female entrepreneurship.

6.6 Advancement on Female Digital Entrepreneurship

The study provides realistic insights into the impact of digital technologies in contributing towards enhanced opportunities for female entrepreneurs in developing countries and in supporting them to overcome various constraints which are shaped by their socio-cultural and economic contexts. By focusing on the SIDS of the Caribbean, which is an underexplored research region of the Global South, this study offers a contextualised gendered perspective to broaden the understanding of female digital entrepreneurship in three post-colonial island states of the Caribbean (Trinidad and Tobago, Barbados and Jamaica). Moreover, the lived experiences of the female digital entrepreneurs provide rich and insightful contextual data for advancing research on the topic. As female entrepreneurs across the world have different experiences and perspectives on business transformation related to digital technologies, the Technology Affordances and Constraints Theory (TACT) holds relevance for understanding the spatial context of the study and the related issues of entrepreneurial resilience, leadership, and empowerment.

Another key insight of the study is the conceptualisation of the SHERO model which evolved from examining in-depth the experiences of the female entrepreneurs in using their agency to choose to digitise their business venture, the processes involved in doing so, and the outcomes of their endeavours (Kelly and McAdam, 2022b). The SHERO model is, therefore, considered an alternative perspective on the advancement of female digital entrepreneurship that characterises the lived experiences of female digital entrepreneurs in complex socio-cultural and socio-economic settings of power and gender hierarchies influenced by history and geography. By drawing from post-colonial feminist theory, the research provides analytical insights on the operation of power and domination, the historical formations of contemporary interdependencies

and “the politics of location” (Kerner, 2017; Piedalue and Rishi, 2017), and captures critical results that challenge existing norms between the Global South and Global North. **Figure 6.1** in Section 6.5 above, grounds the SHERO conceptual model within the theoretical framework of TACT and post-colonial feminism, as well as the context of study. From the findings, the main components of the SHERO model are integrated and intertwined as depicted by the intersecting lines connecting Sustainability, Hope, Empowerment, Resilience and Optimism in **Figure 6.2**.

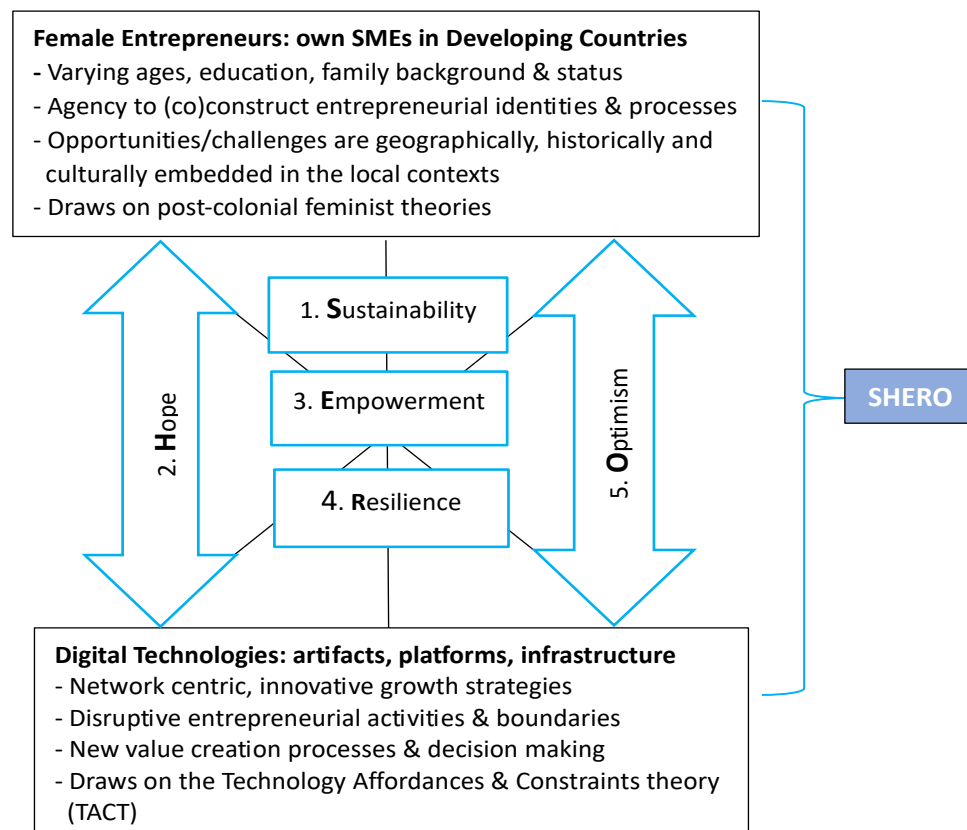


Figure 6. 2: SHERO Model - Embedded and Integrated Conceptual Model for Female Digital Entrepreneurship

Source: Author's Own

The model highlights the inextricable nexus between Hope and Optimism in nurturing attitudes and mindsets of the female entrepreneurs to confront the challenges in entrepreneurship with the two diagonal lines depicting their relevance and impact to be working in tandem, while also

underscoring their embeddedness in influencing entrepreneurial activities and performance. The SHERO conceptual model occurs within the theoretical and contextual settings of female entrepreneurs and digital technologies in the Caribbean. Amidst the growing complexities of the many challenges/constraints in entrepreneurship, the vertical line linking the female entrepreneurs and digital technologies is reflective of the dynamic relationship between the participants (individuals) and the technological tools. This relational interplay is a central premise of TACT (Majchrzak and Markus, 2012; Nzembayie and Buckley, 2022). Further, to illuminate the nuances and obtain a deeper understanding of the impact of leveraging the different technologies in female-owned businesses, there is a need to integrate context and gender sensitivity. Further, it is important to employ a pluralistic approach to the Global South, while noting the inclusion of sovereign SIDS that are influenced by post-colonial experiences. Therefore, this novel theoretical model as depicted in **Figure 6.2**, explicates the synthesis of the interplay of the agency of the women who use digital technologies in their businesses by combining the theoretical framing, the empirical evidence, the analysis and the interpretation within the local context. Interestingly, this model portends a unique way of decolonising normative ideals as shown in the manifestations of digital technologies influencing global interdependencies among female entrepreneurs without necessarily reinforcing notions of dependencies or overdependencies on the Global North that is symbolic of colonial forces.

6.7 Summary

In this chapter, the discussions on the research findings provide a deeper understanding of the processes involving the interplay between digital technologies and female entrepreneurship. The results of the study demonstrate that digital entrepreneurship in the contexts of Caribbean “islandness” and post-colonial environment, provide opportunities with augmented agency to female entrepreneurs to possess “power to” create and innovate their business ventures, to change and transcend constraining gendered boundaries in entrepreneurship and in the digital environment, and to define their resilience and leadership through novel and nuanced capacity building and growth strategies. With the adoption of post-colonial feminist lens and TACT, the findings reveal that there are broader insights and paradoxes related to the smallness, remoteness, fragmentation, and peripheral contexts of female entrepreneurship among SIDS in developing

countries. Therefore, as a multi-dimensional phenomenon, the digitalisation of female entrepreneurship plays a key role in functioning as the “glue” that facilitates the transformation of business entities owned and managed by women.

Additionally, the chapter explains that contrary to the narrow conceptualisation of the (s)hero debate of entrepreneurship which focuses on masculinity and individualism, the SHERO model emanating from this research has broader lens which encapsulates female entrepreneurship across time and environments with impacts on entrepreneurial “Sustainability, Hope, Empowerment, Resilience and Optimism” (Best, Lassalle and Nicolopoulou, 2024). With the ongoing biases and contextual challenges female entrepreneurs continue to face, this model reveals the changing entrepreneurial environment that is influenced by digital technologies and at the same time recognises the contributions and abilities of female entrepreneurs in unlocking the full potential of digital entrepreneurship.

CHAPTER 7: CONCLUSIONS AND RESEARCH IMPLICATIONS

7.1 Introduction

The heightened importance of the role of female entrepreneurship in driving the growth and development agenda (Guelich *et al.*, 2021), and the recent accelerated and pervasive digitalisation trends in businesses (Kraus *et al.*, 2019) have sparked global interests and intensified calls for research on the effects of digital technologies on business venturing. By using a qualitative approach, this research addressed the main research question: In what ways do digital technologies enable female entrepreneurs to transform their business processes, outcomes and experiences? To adequately unpack this central issue, the research also focused on addressing four complementary questions: How do contexts influence the entrepreneurial activities of female entrepreneurs? How do digital technologies impact the way in which female entrepreneurs start, grow and sustain their businesses? What are the key challenges and constraints faced by female entrepreneurs and how do digital technologies contribute to alleviating these? How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?

Post colonial feminist theory and the Technology Affordances and Constraints Theory (TACT) provided the researcher with the theoretical underpinnings (Chapter 3) and the methodological framework for undertaking this study, as well as for designing, gathering and analysing the empirical data, while incorporating context theorisation (Chapter 4). Additionally, by applying reflexivity, the research opens more plural forms of theorising about female entrepreneurship by way of recognising the lived experiences of the research participants while remaining attentive to the larger contexts and relationships within which they are embedded (Cunliffe, 2022).

In this Chapter, a summary of the results as outlined earlier in Chapter 5 is presented in the synthesis of the research focus and key findings in Section 7.2, while the contribution of this present research to academia, policymakers and businesses is outlined in Section 7.3. The limitations of the present research are presented in Section 7.4, the directions for future research work are illustrated in Section 7.5, and a summary of Chapter 7, which encapsulates the main

perspectives derived from the findings and how they converge towards a SHERO model to complement each other in a meaningful way, is presented in Section 7.6.

7.2 Synthesis of the Research Focus and Key Findings

The interplay between digital technologies and female entrepreneurship is shown by the transformation of business models from replacement of face-to-face activities and brick and mortar entities with offerings of partial or fully digitised activities, processes and products. This research has highlighted that the rise of digitisation facilitates female entrepreneurs in the Caribbean in their operations with respect to adapting and innovating their entrepreneurial resilience, empowerment, leadership and context. Moreover, with digital technologies interwoven into every aspect of business ventures (Nzembayie and Buckley, 2022), exploring female digital entrepreneurship in developing countries, such as those of the Caribbean, offers additional insights for conceptualising new and emerging research streams related to female entrepreneurship in a digital era.

Within the current turbulent and unpredictable global entrepreneurial environment (García-Morales *et al.*, 2021), this research has shown that the application of digital technologies creates significant opportunities for transformation by assisting to overcome challenges through facilitating access and use of information, creating and securing resources, diversifying and sustaining the business landscape for female entrepreneurs, and contributing to entrepreneurial resilience. Indeed, there is a strong trend to view female entrepreneurship as a central catalyst for the empowerment of women in light of the growth opportunities for SMEs in developing countries (Angelovska, 2022). In fact, one of the main strategies for the promotion of gender equity and achievement of SDG5 is the empowerment of women. However, the results of the study also show that the female entrepreneurs are faced with constraints of digital poverty given the need to sometimes negotiate their time and boundaries to be able to undertake their business operations. From the standpoint of entrepreneurial leadership, the results support the notion that by integrating digital technologies in their business endeavours, the participants not only focused on the economic aspects, but also capitalised on their commitment to drive creativity, innovation, and sustainability. Building on their ability to recognise business opportunities, of equal importance is their enhanced capacity to make a difference in the lives of others through the use of these

technologies. Nevertheless, based on recorded experiences of online and offline sexism, there are instances of prevailing masculinised perceptions of their leadership which are better understood through a gendered lens.

In consonance with scholars such as Welter and Baker (2020, 2021) and Henry (2023), the concept of entrepreneurial context is complex, but is of paramount importance for understanding the phenomenon of entrepreneurship (Zahra, Wright and Abdelgawad, 2014). However, with the tendency of the literature to focus mostly on Euro-and US-centric contexts (Al-Dajani *et al.*, 2015), this study addresses the growing importance of digitalisation in businesses globally and explores the belief in its impact on female entrepreneurship, as well as the transformative potential of digital technologies among developing countries of the Global South. Moreover, in response to calls for research on female entrepreneurs to focus on women's own experiences in their context and through their own voices (Henry, Foss and Ahl, 2016), the analysis sheds light on how digital technologies impact the temporal, industry and market, spatial and social contexts of female digital entrepreneurs in the Caribbean. In this case, the study revealed that the impact of digital technologies on female entrepreneurship is multidimensional and that a deeper understanding is gleaned from considering a broader and more nuanced context. Hence, by shifting the focus of attention and turning the periscope towards the Caribbean SIDS, provides an interesting setting for gaining "fresh" contextual gendered perspectives on the interplay of the two growing phenomena of female entrepreneurship and digital entrepreneurship in developing countries. While much research takes *context* as given, according to the results of this study, the context is also shaped by the actions of the female entrepreneurs. This approach yields useful insights into entrepreneurial agency and the concept of "doing context" (Tlaiss, 2021) by placing emphasis on the Caribbean entrepreneurial environment.

The present research acknowledges how dominant perspectives can be problematic in terms of informing deep and broad understandings of entrepreneurship. While the researcher does not discredit the value of these perspectives, it is important to highlight that the research emphasises the need to move beyond Western ontologies and instead apply a novel and a different lens on context with a view to contributing to the research field, by exploring the impact of digital

technologies and evaluating the results for the transformation of female entrepreneurship in developing countries.

7.3 Contributions

The research findings provide theoretical contributions which offer added value in the field of female entrepreneurship and digital transformation of SMEs. Ultimately, these in turn, have practical and policy implications on female entrepreneurship, digitalisation, and gender equality in developing countries. Following the detailed explanations of the research contributions which are elaborated in Sub-section 7.3.1 below, these are summarised in **Table 7.1**.

7.3.1 Theoretical Contribution

This research adds to the existing literature on entrepreneurship and to recent work on female entrepreneurship. It further shows that digital entrepreneurship is a path towards building resilience, empowerment, leadership among female entrepreneurs as they take advantage of the opportunities to transform their business models and operations amidst the challenges they face in their given contexts.

First, the study contributes to contextualising female digital entrepreneurship and broadening the debate beyond the Euro-Western centric biases (Marlow, 2020). This is emphasised by focusing on the Caribbean which embodies a range of contexts - inclusive of people, place, and time, (Baker and Welter, 2020) that are critical to gaining a more comprehensive understanding of the field of entrepreneurship. Additionally, by focusing on female entrepreneurs operating in the digital era, the study adds to the growing body of knowledge that explores gender in the on/offline space (Dy *et al.*, 2017) which is shaped by the politics of location and influenced by colonial and post-colonial contexts. Along the same vein, the role of digital technologies in closing distances to markets and customers in peripheral regions, such as Caribbean SIDS, provides rich theoretical insights for a nuanced model of digital entrepreneurship that is differentiated by small, remote and fragmented spaces that are simultaneously functionally enlarged and enriched by familiarity and trust. The lived experiences of the research participants are guided by the socio-cultural and organisational

factors at the micro-meso-macro levels which in turn influence entrepreneurial decisions related to where they operate, the scope of the businesses, and the type of digital business models (light-medium-extreme). These contextual factors suggest that the impact on female entrepreneurship by digital technologies is enabled and constrained by the interdependency of the actors and the factors within the given context. This also has some implications for expanding the use of TACT by integrating nuanced context-related issues.

Second, beyond the stereotypical masculine hero entrepreneur (Marlow and McAdam, 2013; Treanor, Jones and Marlow, 2020), this study contributes to research on female entrepreneurship in developing countries where, as digital entrepreneurs, the women are deliberate in their use of digital technologies to overcome challenges of inequalities in the entrepreneurial environment. Thus, the research proposes a new SHERO framework which depicts how the participants use the technologies to further develop their entrepreneurial practice within a “SHERO” model (that is, a Sustainability, Hope, Empowerment, Resilience and Optimism model) as shown in **Figure 6.2**. Emanating from the findings, the model runs counter to the stereotypical view of entrepreneurship characterised by a hero male entrepreneur (Marlow, 2014) and draws on post-colonial feminist theory and TACT to describe the lived experiences of the participants. Cognisant of the subliminal influence of language, the SHERO model is not a portrayal of female entrepreneurs as “honorary men” (Ahl and Marlow, 2012) bringing attention to their efforts and achievements in the digital entrepreneurial environment and era. Instead, the model outlines the participants’ understanding and use of digital technologies to influence their entrepreneurial agency, know-how, and motivation. The SHERO model, therefore, demonstrates that the use of digital technologies influences entrepreneurial results that either overlap or bear similar characteristics to the aggregate dimensions (core themes) of the research findings. Through the strategic use of digital technologies, the female entrepreneurs took the initiative to improve how they navigate liminal digital spaces (Kelly and McAdam, 2022b) and simultaneously strengthen the capacity of other female entrepreneurs, inclusive of girls and young women, and other vulnerable women in their local and online communities.

Unlike traditional business models that focus on female entrepreneurship and digital technologies, the SHERO framework is a conceptualisation that matters in the “islandness” of Small Island

Developing States (SIDS). The distinctive contextual characteristics of being naturally bound by water, isolated, peripheral, and having limited markets and resources are hindering business sustainability. For researchers, however, such limiting context provides an interesting avenue for analysis towards a deeper understanding of female digital entrepreneurship.

Indeed, the study reveals that the integration of the technologies in business ventures culminates in increased sustainability, empowerment, and resilience that is anchored and interwoven by enhanced hope and optimism of the female entrepreneurs. Based on the novel evidence, this study proposes the SHERO framework in entrepreneurship (Best, Lassalle and Nicolopoulou, 2024). Importantly, the SHERO framework provides novel theoretical lens through which the strategies and actions can be employed by female entrepreneurs to confront the gender disadvantages and capitalise on the opportunities of digital entrepreneurship (*ibid.*). This framework helps to foster a better understanding of the complexity of digital technologies and female entrepreneurs' dynamic so that the key contextual issues (gender, place and time) can unearth an important distinction with the existing (s)hero concept. Accordingly, this novel conceptualisation adds to the discourse on female digital entrepreneurship and contributes to a new and nuanced understanding of the research topic. In the context of this study, the catalytic role of digital technologies in transforming female entrepreneurship can only be effective when Sustainability, Hope, Empowerment, Resilience, Optimism and female entrepreneurship itself are linked to generate positive relationships and opportunities, against neglected assumptions and biases. Hence, whereas the (s)hero conceptualisation in entrepreneurship is aimed at promoting the masculinised hero, is situated in a western context, and is featured as the benchmark to address the challenges faced by female digital entrepreneurs, the SHERO model places emphasis on the aforementioned distinction to avoid perpetuation of the gender gap and gender bias in entrepreneurship.

Evidently, the entrepreneurial narrative of the participants pointed to various contextual experiences of challenges and embedded structural inequalities in the digital entrepreneurial space. Underpinning these realities are a multiplicity of layered disadvantages (Hussain, Vershinina and Carey, 2024) caused by the "triple masculine trap" (Reyes and Neergaard, 2023), as well as the complex and dynamic entrepreneurship and digital entrepreneurship contexts (Martinez Dy, Martin and Marlow, 2018; McAdam, Crowley and Harrison, 2020). Hence, the research further

contributes to theory building by emphasising that with the integration of gender perspectives and embeddedness of context, female digital entrepreneurship occurs both as a process and in the moment at a given point in time. Moreover, the Caribbean context reveals that the transformation of female entrepreneurship is substantially linked to their strengthened agency, while as leaders, the women use digital technologies to overcome entrepreneurial challenges and to seize opportunities to innovate and thrive. In so doing, the study builds on other scholarly works that recognise women as active agents of their lives (McAdam, Crowley and Harrison, 2020). Further, the study provides insights in understanding how the female digital entrepreneurs operating within a context of small business enterprises and a Caribbean entrepreneurial landscape that features low, medium and extreme digital entrepreneurs through their networks and increased social capital can innovate and transform in liminal spaces (Kelly and McAdam, 2022a). Moreover, this research situated in Caribbean SIDS in the Global South, complements works conducted by Vershinina *et al.* (2020), which focus on small high tech female entrepreneurs in the European context, and therefore expands on the gendered nature of digital entrepreneurship. Translating the impact of the technologies on female entrepreneurs as a means of closing the gender gap in entrepreneurship, requires incorporating the socio-cultural norms to better understand the findings within post-colonial feminist theorisation and further underscores the need to make studies on female entrepreneurship more context related.

7.3.2 Policy and Practical Implications

The consequences of the unprecedented digital revolution in transforming the meaning and forms of entrepreneurship go beyond the dynamics of the entrepreneurship process (Giones and Brem, 2017). The policy and practical implications from the study highlight that emerging digital technologies can become both an equaliser and a disruptive factor in labour markets which can empower women as well as address gender inequality; these are two important imperatives to achieve the UN 2030 Sustainable Development Goals and ultimately contribute to building a more inclusive and equal society.

Insights into the contextual influences can lead to more targeted policy recommendations that support the participants who are assuming responsibilities for building capacity and shaping the

ecosystem for female digital entrepreneurs. The results show that digital technologies enhanced self-efficacy and facilitated female entrepreneurs' agency and ability to challenge embedded day-to-day sensitivities of the wider societal and economic traditions. Further, the empirical data highlighted that the majority of the female entrepreneurs employ mostly women and have business partners and clients that are mostly women. However, they own business ventures that are operating in a mix of sectors dominated by men and women. This trend could be pointing to a nuanced reality that with digital technologies, female entrepreneurs may be developing a parallel entrepreneurial ecosystem, while simultaneously challenging their social and cultural contexts. Yet, the women expressed their lack of knowledge of support policies, which are either non-existent or not properly designed to reach the female entrepreneurs. Therefore, the results can serve as a launching pad for the development and reformulation of policies which target specific aspects of their socio-economic contexts, such as the promotion of training in digital competencies and funding support for business innovation at the micro-meso- level. Similarly, the structural inequalities of the Caribbean which emanate from global neo-liberal economic policies (Thakur, 2012), suggest that the prospects for long-term business transformation through digital technologies require national and regional policy support for improved technological independence. The scope of the study in contributing to the development of specific policies to enhance the effectiveness of the capacity building initiatives of the female digital entrepreneurs is considered critical towards the efforts to overcome the North-South digital divide and the global digital gender divide.

As researchers globally continue to grapple with both the recent expansion of scholarly interest in female entrepreneurship (Acs *et al.*, 2011) and the more recent infusion of activities in digital entrepreneurship (Kraus et al, 2019), this study supports the thrust in elucidating what seem to have been silenced, neglected or excluded from the visible and invisible discursive practices which define the entrepreneurship research agenda, particularly in developing countries. More specifically, as digital technologies offer opportunities for female entrepreneurs to transform their business models and processes within the paradoxical gendered boundaries of a Caribbean patriarchal ideology (*as previously mentioned in Sub-section 2.4.3*), and a geographically fragmented small space comprising island states, the Caribbean context can serve to revolutionise “gate keeping” in entrepreneurial education. This is because despite the rapid growth and

development within entrepreneurship research, there is evidence which shows that the majority of the perspectives remain US/Eurocentric, thereby reflecting an Anglo-Saxon culture and not that of the Global South (Al-Dajani and Marlow, 2015). Consequently, insights from the findings and the SHERO model of this research have the potential to contribute to plurality in research on female entrepreneurship, and the existing gender knowledge regime within academia that is largely driven by “neoliberal concerns of individualism and economic growth” (Jones, Martinez Dy and Vershinina, 2019, p.799). Therefore, being in the relative early stage of digital entrepreneurship (Nzembayie and Buckley, 2022), this research can serve as a foundation for developing a defining role in the field for geographic areas such as the Caribbean region with its contextual historical and socio-economic dimensions, as well as its distinctive “islandness” in exploring business transformation for female entrepreneurship through interaction with digital technologies. In this regard, the study provides useful insights to encourage researchers in the disciplines of entrepreneurship aiming to explore the role of nuanced contextual conditions and factors (such as small, remote and fragmented islands) among SMEs on female digital entrepreneurship. This is of particular importance as the rapid and pervasive changes to businesses, of which the majority are SMEs, in the current digital era suggest the need for continuous research by academia so that the literature on entrepreneurship is on par with practice.

The practical implications of this research can be powerfully showcased in how female digital entrepreneurs are open and strategic in utilising digital platforms and artifacts in their overall entrepreneurial activities and specifically in their export-driven goals (towards regional and international markets) and activities. Both the SIDS and island contexts of the SMEs owned/managed by the participants would benefit from digital technologies in their role as “a bridge” and “a glue” to facilitate navigation and connection within a business environment characterised by physical distance, remoteness and fragmentation. In recognition of some of the inefficiencies and weaknesses in formal institutions, the role of digital technologies is demonstrable in forging critical relationships to facilitate bypassing gatekeepers to access new markets and customers beyond national boundaries and unlocking the potential of islandness for innovation. This dynamic points to the insights gained from the opportunities gained by the female digital entrepreneurs in accessing regional and international markets.

Additionally, this particular interplay between digital technologies and business transformation suggests there is scope for significantly reducing the dependence of SIDS from large foreign multilaterals. In light of the many Caribbean nationals who live abroad, a practical implication is the ability of female digital entrepreneurs to capitalise on the diaspora market for trading of Caribbean products and services (Minto-Coy, Lashley and Storey, 2018). Evidently, as the diaspora offers a niche market for exporting Caribbean products into global and mainstream markets, female entrepreneurs are able to overcome challenges related to the liabilities of size and “foreignness” (Minto-Coy, Lashley and Storey, 2018). Hence, the integration of digital technologies to access markets in the Caribbean diaspora, expands the space for the internationalisation of Caribbean-based SME businesses owned by women. There are practical implications from the potential of digital technologies to act as a buffer. This is shown in the provision of a supportive function in the entrepreneurial environment which in turn can encourage female entrepreneurs in the diaspora to invest in business ventures in the region without having to physically return to do so. This could be an important factor for potential female entrepreneurs who have concerns about the transferability of diaspora benefits and status in the local entrepreneurial environment. With the lack of homogeneity among the diaspora group and the concomitant changing interest across different generations, digital technologies offer flexibility and agility for the application of innovative strategies towards supporting a facilitative environment for penetrating international markets as well as encouraging Foreign Direct Investment (FDI) in the region.

The study suggests that with the use of digital technologies, the female entrepreneurs have developed an assemblage of practices that mirror the concept of bricolage¹⁵ (Baker and Nelson, 2005). In fact, the results revealed that digital technologies enabled the women-owned SMEs to improvise, repurpose, and appropriate the value of their limited resources for an appreciation of additional forms of capital - such as social capital, cultural capital and symbolic capital (Pret, Shaw and Drakopoulou Dodd, 2016). Hence, the researcher acknowledges there is scope for extending the findings of these processes to the practice of digital bricolage as the participants are able to transform their businesses digitally despite their limited financial resources. Furthermore, the

¹⁵ According to Baker and Nelson (2005, p.333), entrepreneurial bricolage is defined as making do by applying combinations of resources at hand to new problems and opportunities.

research offers practical implications for supporting SMEs to translate the transformation of their growth and development business model into a deliberate strategy that is facilitated by digital technologies. For instance, recent studies on informal business practices (Branicki, Sullivan-Taylor and Livschitz, 2018) revealed that the integration of digital technologies in traditional financing schemes is considered instrumental not only as a practical solution to maintain the integrity of the region's rich cultural norms, but also in transforming the efficacy of the schemes and ultimately revolutionising the entrepreneurial prospects for these women to access finances (Best *et al.*, 2024). Even with the dark side of digital technologies on entrepreneurship such as the probability of failure risks within the emerging and uncertain digital environment (Nzembayie and Buckley, 2022) and the complexities of the lack of structures and solid standards in the digital space, in applying digital bricolage, there are potential positive impacts on the female entrepreneurs given that they can be better equipped to use their agency in practices such as experimentation, networking to share and gain information, and continuous collection of resources to further bolster their entrepreneurial resilience and leadership capacities.

In keeping with calls over the last decade about the need for placing greater emphasis on entrepreneurship research towards its social and economic impact (Dodd *et al.*, 2022), a practical contribution of this study is to convene and deliver online workshops with female entrepreneurs in the region to share the findings. The main objective of such workshops is to use the SHERO model to raise awareness and inspire the potential workshop participants on some of the key take-aways of the findings for the benefit of their business endeavours. The researcher intends to discuss hands-on approaches that translate into calls for action related to developing strategies for enhancing sales growth through the identification of wider market opportunities and for collaborating with others in similar contexts, as well as others along the supply chain. In keeping with the established networks formed among the participants of the study, it is expected that these workshops will be catalytic in nature to lay the groundwork for the participants to draw on, with a view towards sustaining the dialogue and sharing of information. In so doing, the researcher through this study, is seeking to capture the full potential of entrepreneurship education by embracing and applying the notion of education *for* entrepreneurship instead of education *about* entrepreneurship (Vendel *et al.*, 2012; Durán-Sánchez *et al.*, 2019).

Moreover, with the inherent challenges of “islandness” and known constraints faced by female entrepreneurs, coupled with the agency of the female entrepreneurs in their use of digital infrastructures (such as Facebook, Instagram, TikTok, Zoom) and digital artifacts (such as mobile devices – smart phones and laptops), such workshops will complement efforts to bypass gatekeepers in the marketing of their products into the export market as well as network with others beyond their limited and fragmented geographical spaces. Along the same vein, there is widespread support for the collaborative work of the SheTrades Caribbean Hub and the e-commerce platform of Caribbeanshopper which provides Caribbean female entrepreneurs with increased access to new markets in North America through online trade (The Caribbean Development Bank, 2025). This recent development resonates with the thrust for hosting these workshops. Furthermore, it showcases the potential scope for the practical application of the study towards understanding developments in e-commerce and digital platforms in the region’s entrepreneurial landscape. Hence, this study provides results that can be useful to guide and facilitate optimisation of the benefits that the region’s female entrepreneurs can take advantage of through the empowering opportunities (Ng, Wood and Bastian, 2022) to better navigate the global digital economy from such regional digital platforms and digital marketplaces.

With the high developmental importance of female entrepreneurship and digital technologies, the effects of their interplay suggest there is a need to shift from the traditional notion of female entrepreneurship as being vulnerable towards a recalibrated concept of entrepreneurship led by women who are more oriented towards patterns of business innovation, adaptability and sustained growth and development (Huaman *et al.*, 2022). This study supports the achievement of this in praxis. In essence, this research resonates with calls to broaden the scope as well as the policy and practice implications for the entrepreneurship field in exploring novel and under-researched issues from non-traditional regions through contextual gendered lens (El-Fiky, 2023; Henry and Lewis, 2023).

In examining the phenomena of female entrepreneurship and digital entrepreneurship in the Caribbean context, this study provides rich and nuanced theoretical, policy and practical insights into the discourse on the impact of digital technologies on female entrepreneurship. These research contributions described above are synthesised and encapsulated in **Table 7.1** below.

Table 7. 1: Summary of Research Contributions

Contributions	Brief Description (with relevant elements)
Theoretical	(a) Focusing on the Caribbean context broadens the debate on female digital entrepreneurship (FDE) beyond the traditional Euro-Western centric focus. <i>The main elements feature:</i> • A nuanced model of digital entrepreneurship (differentiated by smallness, remoteness, fragmentation, peripherality and a colonial past). • The digital technologies facilitate closing of market and customer distances and functionally enlarge the business environment. • The integration of the embeddedness of context and gender perspectives results in FDE as a movement and moment in time. (b) The research findings and results add to the growing body of knowledge on gender in the on/offline space that is shaped by politics of location and colonial/post-colonial contexts. <i>The main elements depict that:</i> • The interdependency of the women and the Caribbean context enables and constrains FDE. • There is a multidimensional impact on the temporal, industry and market, spatial and social context of Caribbean FDE. • There is scope for closing the gender gap in entrepreneurship. (c) A new SHERO framework and SHERO model respectively have been developed which capture the significance of “islandness” and an understanding by women in their use of the technologies to influence their entrepreneurial agency, know-how and motivation. <i>The main elements indicate that:</i> • SHERO plays a catalytic role in linking (sustainability, hope, empowerment, resilience, optimism) to gender opportunities and relationships against neglected biases and assumptions. • The key contextual issues (gender, place and time) provide a better understanding of the complexity and dynamism of FDE.
Policy	(a) The development of context-specific policies to enhance the effectiveness of capacity building initiatives for female digital entrepreneurs is critical to overcome the North-South digital divide and the global digital gender divide in entrepreneurship. <i>The main elements and characteristics should address:</i> • The evolution of a parallel entrepreneurial ecosystem for female entrepreneurs which challenges socio-cultural context. • The limited knowledge of the policy environment among the female entrepreneurs amidst their enhanced self-efficacy and agentic capabilities. (b) Insights from the findings and results provide a foundation that establishes a defining role for the geographic areas of SIDS such as the Caribbean (with distinctive features of islandness and historical dimensions) in exploring transformation for female entrepreneurship. <i>The main elements should consider:</i> • The rapid changes to the business landscape that mostly comprises SMEs operating in a digital era. • Female entrepreneurs mostly employ women but operate in a mix of sectors dominated by both men and women.

Contributions	Brief Description (with relevant elements)
	(c) The results of the novel SHERO model can shape the policy direction for the gender knowledge regime in female digital entrepreneurship in developing countries, particularly SIDS.
Practical	(a) The study reveals an assemblage of entrepreneurial practices developed by the female digital entrepreneurs that translate into the application of digital bricolage to overcome constraints and scope for the transformation of traditional business arrangements. <i>The key elements aim to promote:</i> • Enhanced abilities to improvise, repurpose and appropriate additional forms of capital (social, cultural and symbolic). • Being better equipped to practice agency and bolster leadership and resilience capacities. (b) The technologies provide opportunities to strengthen the ability of female entrepreneurs to capitalise on diaspora markets for trading Caribbean products and services. <i>The main elements focus on generating:</i> • Opportunities for the development of niche markets to minimise the liabilities of size and “foreignness” of business offerings. • Reduced dependence of SIDS on large foreign multilaterals to drive entrepreneurial development. (c) The promotion and achievement of export-driven activities and goals based on the openness and strategic orientation among the female digital entrepreneurs in using digital technologies in their business endeavours. <i>The main elements highlight:</i> • The role of the women in forging relationships to bypass market gatekeepers. • The role of the technologies in acting as a bridge and a glue to facilitate navigation and connection among female digital entrepreneurs in islandness context. (d) Convene and deliver online workshops with female entrepreneurs on findings highlighting the SHERO model. <i>The main elements will focus on:</i> • Raising awareness and inspiring confidence in the agency of female entrepreneurs. • Bolstering a call for action to develop strategies for sales growth and establishing a network for sustaining dialogue among female digital entrepreneurs, particularly those who are owners and managers of SMEs. • Complementing the research goals and objectives and having ready application to regional e-Commerce platforms, such as the recently established Caribbeanshopper.

Source: Author’s Own

Essentially, it is pertinent to indicate that the contents of this thesis highlight the synergies among the research gaps, the research questions, the research contributions (theoretical, policy and practical), as well as the related implications for the research impact. An example of the importance of connecting these different aspects of the study is demonstrated as follows: within the context of

female entrepreneurship in developing countries and the Caribbean being under-researched, the researcher questions “How do contexts influence the entrepreneurial activities of female entrepreneurs?” The results of the findings contribute to the establishment of a defining role for the geographic areas of SIDS in exploring the transformation of female entrepreneurship. Along this same line, there are implications for improving parity between the literature on entrepreneurship and entrepreneurial practice. Hence, the researcher opines that **Table 7.2** not only elaborates on **Table 3.3** but also provides a systematic overview and a clear conceptualisation of the empirical study which explores how digital technologies transform female entrepreneurship in developing countries, with a specific focus on those situated in the Caribbean region.

Table 7. 2: Elaborating and Linking Research Gaps, Research Questions, Research Contributions and Implications for Impact

Research gaps	Examples of literature/authors identifying Research Gaps	Research questions addressing the issue	Research contributions	Implications for impact
Incomplete understanding of female digital entrepreneurship and in addressing constraints of female digital entrepreneurs.	Kelly and McAdam (2022)	RQ2: How do digital technologies affect the way in which female entrepreneurs start, grow and sustain their businesses? RQ3: What are the key challenges and constraints faced by female entrepreneurs and how do digital technologies contribute to alleviating these?	Theoretical: Focusing on the Caribbean context broadens the debate on female digital entrepreneurship (FDE) beyond the traditional Euro-Western centric focus. <i>The main elements feature:</i> • A nuanced model of digital entrepreneurship (differentiated by smallness, remoteness, fragmentation, peripherality and a colonial past). • The digital technologies facilitate closing of market and customer distances and functionally enlarge the business environment. • The integration of the embeddedness of context and gender perspectives results in FDE as a movement and moment in time. Practical: The study reveals an assemblage of entrepreneurial practices developed by the female digital entrepreneurs that translate into the application of digital bricolage to overcome constraints and scope for the transformation of traditional business arrangements. <i>The key elements aim to promote:</i> • Enhanced abilities to improvise, repurpose and appropriate additional forms of capital (social, cultural and symbolic). • Being better equipped to practice agency and bolster leadership and resilience capacities	Expanding on TACT by integrating nuanced context of Caribbean SIDS. Transforming the growth and development business model of SMEs through the adoption of digital bricolage as a strategy.
A lack of seminal research on female entrepreneurship in developing countries such as those in the Caribbean.	Terjesen and Amorós (2010)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs?	Policy: The development of context-specific policies to enhance the effectiveness of capacity building initiatives for female digital entrepreneurs is critical to overcome the North-South digital divide and the global digital gender divide in entrepreneurship. <i>The main elements and characteristics should address:</i>	Advancing plurality in research supports calls to revolutionise “gate keeping” in entrepreneurship education.

Research gaps	Examples of literature/authors identifying Research Gaps	Research questions addressing the issue	Research contributions	Implications for impact
			- The evolution of parallel entrepreneurial ecosystem for female entrepreneurs which challenges socio-cultural context. - Limited knowledge of policy environment among the female entrepreneurs amidst their enhanced self-efficacy and agentic capabilities.	
The context of female entrepreneurship in developing countries and the Caribbean is under-researched.	Esnard-Flavius (2010)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs?	Policy: Insights from the findings and results provide a foundation that establishes a defining role for the geographic areas of SIDS such as the Caribbean (with distinctive features of islandness and historical dimensions) in exploring transformation for female entrepreneurship. <i>The main elements should consider:</i> - The rapid changes to the business landscape that mostly comprises SMEs operating in a digital era. - Female entrepreneurs mostly employ women but operate in a mix of sectors dominated by both men and women. Practical: The technologies provide opportunities to strengthen the ability of female entrepreneurs to capitalise on diaspora markets for trading Caribbean products and services. <i>The main elements focus on generating:</i> - Opportunities for the development of niche markets to minimise the liabilities of size and “foreignness” of business offerings. - Reduced dependence of SIDS on large foreign multilaterals to drive entrepreneurial development	Understanding nuanced contextual conditions and factors enhance the scope for gaining parity between literature on entrepreneurship and practice. Providing added attraction of transferability of benefits and status for diaspora investors and FDI in local business environment
Insufficient integration of gender lens in the interplay of entrepreneurship, female entrepreneurship and digital entrepreneurship.	Dy, Marlow and Martin (2017, 2018)	RQ2: How do digital technologies affect the way in which female entrepreneurs start, grow and sustain their businesses?	Theoretical: The research findings and results add to the growing body of knowledge on gender in the on/offline space that is shaped by politics of location and colonial/post-colonial contexts. <i>The main elements depict that:</i>	Obtaining fresh perspectives on contextual gendered perspectives and insights on agency and “doing contexts.

Research gaps	Examples of literature/authors identifying Research Gaps	Research questions addressing the issue	Research contributions	Implications for impact
		RQ4: How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?	• The interdependency of the women and the Caribbean context enables and constrains FDE. • There is a multidimensional impact on temporal, industry and market, spatial and social context of Caribbean FDE. • There is scope for closing the gender gap in entrepreneurship. Practical: The promotion and achievement of export-driven activities and goals based on the openness and strategic orientation among the female digital entrepreneurs in using digital technologies in their business endeavours. <i>The main elements highlight:</i> • The role of the women in forging relationships to bypass market gatekeepers. • The role of the technologies in acting as a bridge and glue to facilitate navigation and connection among female digital entrepreneurs in islandness context.	Building on post-colonial feminist theory by highlighting the gendered nature of digital entrepreneurship. Expanding on TACT as a lens for optimising the potential of export markets.
Limited innovative methodological approaches and theoretical frameworks to explore contextual considerations of novel entrepreneurial phenomenon of female digital entrepreneurship.	Burg et al. (2022) Welter (2020)	RQ1: How do contexts influence the entrepreneurial activities of female entrepreneurs? RQ4: How do female entrepreneurs use digital technologies to navigate their entrepreneurial environment and context?	Theoretical: A new SHERO framework and SHERO model respectively have been developed which capture the significance of “islandness” and an understanding by women in their use of the technologies to influence their entrepreneurial agency, know-how and motivation. <i>The main elements indicate that:</i> • SHERO plays a catalytic role in linking (sustainability, hope, empowerment, resilience, optimism) to gender opportunities and relationships against neglected biases and assumptions. • The key contextual issues (gender, place and time) provide a better understanding of the complexity and dynamism of FDE.	Promoting the SHERO conceptualisation as an alternative perspective that is novel and different from (s)hero since the latter is prone to reflect a masculinised hero in a western context.

Research gaps	Examples of literature/authors identifying Research Gaps	Research questions addressing the issue	Research contributions	Implications for impact
			Policy: The results of the novel SHERO model can shape policy direction for the gender knowledge regime in female digital entrepreneurship. Practical: Convene and deliver online workshops with female entrepreneurs on findings highlighting the SHERO model. <i>The main elements will focus on:</i> • Raising awareness and inspiring confidence in the agency of female entrepreneurs. • Bolstering a call for action to develop strategies for sales growth and establishing a network for sustaining dialogue among female digital entrepreneurs, particularly those who are owners and managers of SMEs. • Complementing the research goals and objectives and having ready application to regional e-Commerce platforms, such as the recently established Caribbeanshopper.	Adding a nuanced dimension to “doing gender” in a SIDS context. Tangible application of the notion of education <i>for</i> entrepreneurship for entrepreneurship as opposed to education <i>about</i> entrepreneurship.

Source: Author's Own

7.4 Limitations of the Study

As with all studies, despite its theoretical, policy and practical implications, this research is not without limitations. Notwithstanding, the main limitations of this research form the basis from which recommendations for future research may arise. First, there is an assumed homogeneity among the three countries which have the most advanced entrepreneurial ecosystem in the Caribbean. Yet, there are socio-cultural and economic differences among them, which are even more pronounced in the less advanced entrepreneurial environments of the region. Influenced by life-long experiences and knowledge of a region which bred and shaped the professional life of the researcher, to paint a picture of the Caribbean without acknowledging the nuances among the islands will project an incomplete understanding of the intricacies of the complex web of the region's entrepreneurial context (Yamamura, Lassalle and Shaw, 2022). This limitation also ignores female entrepreneurs in other contexts, notably minority migrant groups that have recently emerged from neighbouring Latin American countries who are not fluent in the English Language and are mostly engaged in businesses in the informal sector. Although the decision to include SMEs can be justified as characteristic of the majority of persons involved in Caribbean's business environment, the researcher acknowledges the importance of extensive studies in the future which include large size, as well as small size female-owned businesses who are operating in the informal sector to assess the reliability and viability of the results in relation to the role of digital technologies on the motivation of female entrepreneurs in developing countries contexts.

Second, the researcher relied heavily on the perspectives of the participants who shared how they experienced business transformation in their use of digital technologies. This bears the tendency of incorporating cognitive biases when reporting information related to past experiences of the participants. Although the researcher applied reflexivity to critically analyse the nexus between the degree of digitalisation and the performance of the female entrepreneurs in their socio-cultural contexts, conducting interview-based qualitative research has intrinsic limitations. This was further compounded by the use of the online modality for the interviews that was symptomatic of the preferred option for dialogues and discussions during the post semi-pandemic era, making it a little more challenging to build rapport with the participants. These types of constraints may seem to suggest that either quantitative approaches, such as questionnaires, which generally require a

higher number of participants or longitudinal studies, such as panel surveys, will serve to complement the results of this research. However, those approaches call for further research in future seminal research work on the Caribbean. Further, the researcher remains mindful that the rapid changes in digitalisation can limit the relevance of longitudinal analyses in developing economies, particularly in light of the need to illuminate the experiences of the participants in addressing their socio-economic and cultural contextual conditions through the use of the technologies.

Third, there is a limitation caused by the dearth of similar studies for the Caribbean. Although this is exogenously determined, such a situation tends to reduce the scope for comparing the results obtained in this study. Moreover, since the field of digital entrepreneurship is considered a nascent research area (Rosin *et al.*, 2020), then without careful interpretation of the contextual gender relations and the socio-cultural issues, the study carries the danger of reproducing the biases of female entrepreneurs prevalent in the Euro-Western context. In this regard, integrating gender lens in theories on the use of technology, such as TACT, is important to question and challenge mainstream approaches for undertaking entrepreneurship research (Ahl, 2006; Martinez Dy, Marlow and Martin, 2017). Additionally, the application of a post-colonial approach (Kerner, 2017) acts as a critical voice to illuminate the imbalances of power between the Global North and Global South, to contribute to plurality in entrepreneurial perspectives and to have a deeper relational understanding of digital entrepreneurship (Ozkazanc-Pan, 2014). Overall, these limitations point to the need for scholars and researchers to remain vigilant in seeking to conduct further studies that aim to capture and understand nuanced and important aspects of entrepreneurship in broader and non-traditional contexts.

7.5 Directions for Future Research

To further advance the stated research objectives of improving the understanding of the impact of digital technologies on female entrepreneurship in developing countries, future research needs to focus on some key issues that emerged in the analysis of the thematic areas. First, future studies could explore female digital entrepreneurship in relation to the different wider socio-economic and cultural contexts of the three countries – Trinidad and Tobago, Barbados, and Jamaica – to include

Latin American countries. In the global arena, Latin America and the Caribbean (LAC) is generally considered as a geographic bloc or group of forty-one countries in the Global South - including the Caribbean SIDS. Although LAC is the world's largest net food-exporting region and is the world's largest provider of ecosystem services (particularly with Brazil and Guyana), it continues to face a high level of inequalities in many forms and migration to the Global North which negatively affect its sustainable development (Economic Commission for Latin America and the Caribbean, 2024). Assessing the role of digital technologies towards addressing multidimensional inequalities (income, capacity development, decision making) is deemed an important pillar to drive the regional transformation agenda. This expanded focus is paramount to unpacking and better understanding the complexity and subliminal heterogeneity of lived entrepreneurial experiences. Such a research agenda is considered critical to addressing the digital gender divide in entrepreneurship (Hilbert, 2011; Akter, Rahman and Radicic, 2019) as it requires further exploration of issues on entrepreneurial resilience, leadership and empowerment such that normative assumptions and accepted knowledge can be further interrogated and alternative realities are recognised in the broader LAC region. To advance the theorisation of female entrepreneurship in this current digital era, therefore requires a sharp contrast to the neo-classical economic growth theory (Dean *et al.*, 2019) which generally purports a static market and a linear growth phenomenon.

Evidently, the analysis of the empirical data highlights the adaptive and innovative processes of the experiences of the female digital entrepreneurs which can be described as dynamic and full of uncertainties. Hence, future research could consider alternative theories that will capture the abilities of female entrepreneurs in the LAC region to adapt in periods of uncertainties which is intrinsic to digitalisation. This would also give deeper meaning to their agency as women in constructing their entrepreneurial environment. Dubbed as a region that does not stand still, and in a state of constant transformation (The World Bank Group, 2024), such conceptualisation and exploration broaden the scope for richer understanding of the realities, inclusive of any contradictions that are encapsulated in the region's cultural or historical backgrounds, the socio-economic conditions governing these contexts, and the role of the female entrepreneurs in shaping the meanings of their business transformation. Also, there is even greater scope for undertaking comparative analyses with other entrepreneurial infrastructure among the countries of the LAC

region; thereby providing scope for drawing more complete conclusions about female digital entrepreneurship in the wider region. Although this study did not adopt nor explore the intersectional nature of female digital entrepreneurship, with its integration through the emic attention to context, future research could shed light on the complex, yet salient identity categories and cultural distinctions of female digital entrepreneurship in the context of the LAC region (that is, the norms and performances of the female digital entrepreneurs that are culturally constructed in both Latin America and in the Caribbean). This further enhances the scope for future research to develop indigenous theory (Mohammed, 1998) with a focus on connecting the theoretical concept of “islandness” as well as the developing country contexts (Hall, 2012;Merouani *et al.*, 2023) of the Global South in the LAC region with entrepreneurship literature on gender and digital transformation. With female entrepreneurship and digital entrepreneurship being rooted in complexity, the different layers of context and phenomena in the LAC region, portend “an untameable realm of perpetual novelty” (Dimov, 2024, p.2)that is rich and opens avenues for more research.

Second, by drawing on a wider range of countries in post-colonial contexts to corral attention to their governing paradigms within the realms of female-owned and operated businesses and in a post-colonial digital environment, there is scope for even further developments of this research agenda. Indeed, the analyses of the empirical evidence highlight underexplored contradictions of female entrepreneurs navigating embedded gender norms in the digital space, and in male dominated settings, through mentorship, networking, capacity building and even outsourcing of the technological aspects of the business operations. Furthermore, gendered considerations of the experiences of the female entrepreneurs in the digital space also provide insights on future research directions that are linked to non-IT professionals (also known citizen developers) who are willing to learn and collaborate (Oltrogge *et al.*, 2018). Thus, there is scope for future research in the field of female digital entrepreneurship to continue replicating the integration of feminist perspectives in order to improve how to reflexively analyse the understanding of the interplay between digital technologies and the entrepreneurial activities, behaviours and aspirations of female entrepreneurs in their socio-cultural contexts. Moreover, drawing upon diverse feminist perspectives to explore the practice and process of digital entrepreneurship among SMEs in island states and other countries with a post-colonial context lends itself to a more inclusive approach that will add to the

extant body of research on female entrepreneurship and will support the expansion of the bounded ontology that predominantly informs the current entrepreneurial research agenda. With both entrepreneurship and digital entrepreneurship being significantly gendered, when combined as female digital entrepreneurship within a broad post-colonial context, there is an opportunity to explore and gain more knowledge that could contribute to a more gender-equal digital entrepreneurship environment for women.

Third, an important direction for female entrepreneurship research is to expand on the notion that important “entrepreneuring” (Rindova, Barry and Ketchen, 2009) is done in contexts that are seldom considered in the traditional domain of entrepreneurship, including the micro-small-medium scale activities through which women seek to make a difference in their “worlds” (Ozkazanc-Pan, 2014). With digital technologies this world is limitless, given the fluid and flexible boundaries enabled by the use of these infrastructures, platforms and artifacts. Moreover, in post-colonial, non-Western, and “islandness” contexts, entrepreneuring provides expansive frameworks for a more nuanced understanding of the dynamics and for reconsidering the assumed heroic, western-centric, masculine myths in entrepreneurship (Laine and Kibler, 2018). To support the notion that entrepreneurship is everywhere (Baker and Welter, 2024), from the standpoint of the researcher, the Caribbean region provides a lens for exploring this, using the SHERO model as an important pillar. This approach is not intended to champion a feminine heroic view of the entrepreneur who, through enhanced resilience, empowerment and leadership, is able to break away from authority and subordination towards an ultimate privileged sustainable position. In keeping with the argument of Ahl and Marlow (2012), this notion has a strong, albeit inadvertent, proclivity to replace one gendered order with another. Instead, what is emphasised in this approach is the importance of promoting female entrepreneurship research that critically challenges the axiomatic reproduction of women’s subordination, as well as the false promise of emancipation, democratisation and other egalitarian benefits that is generally ascribed to the digitalisation of business ventures. The researcher is cognisant of the fact that the application of universal norms can crowd out alternative views which are important to balance the narrative and thinking in academic research on entrepreneurship. Hence, future research could build on the SHERO model to obtain a more comprehensive understanding of the opportunities and challenges which female entrepreneurs are faced with in an era of digitalisation by adopting approaches that

cross levels of analysis and extend beyond dominant theoretical views, while also integrating theoretical links between gender, context and digital inquiries into the micro-meso-macro aspects of entrepreneurship.

Finally, in light of the ongoing global uncertainties and debates around the advances in digital technologies such as Artificial Intelligence (AI), it would be important for future research to understand how these subsequent changes will affect the practical adaptive and innovative strategies for female entrepreneurs and influence issues of gender and cultural norms. These rapid changes in digital technologies can more significantly alter the non-linear and non-deterministic ways in which female entrepreneurship is impacted. Hence, some possible research questions for future research are: How the role of AI impacts the ability of female entrepreneurs to adapt and thrive in the digital environment? In what ways does AI influence the context in which female entrepreneurs in the Global South to do business, interact and navigate social norms? These questions suggest that the stance for the future research direction on the transformation of female entrepreneurship through digital technologies, is to encourage broader debate on how research can be more catalytic in both preparing and creating a future in which the potential of entrepreneurship in general and female entrepreneurship in particular, is optimised in the new and emerging digital economy.

7.6 Summary

Navigating the entrepreneurial environment, not only for the changing and unpredictable business landscape caused by emerging and disruptive digital technologies (Nambisan, 2017), but also through the changes, is a vital area in research on female entrepreneurship. Looking persistently to the West for models and norms can perpetuate imbalances and superficial ways of interpreting and integrating nuanced contexts and realities. This study on female digital entrepreneurs in the Caribbean resonates with the argument that there is a range of entrepreneurial experiences in multiple diverse socio-cultural, economic, and political contexts across the globe (Wadhwani *et al.*, 2020;Welter, 2020). Evidently, despite a heavy reliance on Western perspectives, a contextualised gendered understanding of business transformation by female digital entrepreneurs (Ozkazanc-Pan, 2012;Martinez Dy, Marlow and Martin, 2017;Kelly and McAdam, 2022b),

challenges and questions the tendency of a “one-size-fits-all” approach (Baker and Welter, 2020). Even within non-Western contexts, such as the Global South, an “all-are-alike” approach does not fully illuminate the nuances of the small island developing states of the Caribbean region. Moreover, a convergence of the post-colonial SIDS context of the Caribbean region with digital innovations forms a novel landscape for showcasing how the entrepreneurial endeavours by female digital entrepreneurs are intricately linked to and shaped by their gendered contextual embeddedness (Henry and Lewis, 2023) resulting in impacts to the entrepreneurial resilience, empowerment, leadership and context of female entrepreneurship.

At the same time, note is taken of the demands of the United Nations 2030 SDG agenda and that the increasing use of digital technologies in business processes have added significant impetus to paying greater attention to a more in-depth understanding of the innovative and transformative practices and strategies that impact the opportunities/challenges faced by female entrepreneurs in the Global South. As discussed in Section 6.6, the central theoretical model resulting from this research is shown in **Figure 6.2** which illustrates how the female entrepreneurs use digital technologies in their business operations to improve their entrepreneurial SHERO - Sustainability, Hope, Empowerment, Resilience and Optimism - in an integrated and holistic manner. Drawing from post-colonial feminist perspectives and the Technology Affordances and Constraints Theory (TACT), female entrepreneurs in the Caribbean demonstrate that they can move beyond stepwise (singular) approaches of managing challenges and optimising opportunities, and towards adopting strategies as a cumulative process in the use of digital technologies. Therefore, this study offers a distinctive perspective on digital entrepreneurship in developing new business ventures and market offerings, and in underscoring the capacity and agency of the female entrepreneurs to use digital platforms, artifacts and infrastructures to foster SHERO outcomes in the context of their business endeavours. In consonance with the approach that this study is not solely undertaken so that the researcher can project authority on the topic, the valuable contribution of this model is illustrated in the rich narrative of the real actors - the participants - who shared their experiences on each of the concepts as depicted in the associated “power quotes” in **Figure 7.1**.

In this regard, this study provides a nuanced theoretical and conceptual path for achieving business transformation in female entrepreneurship in developing countries, emphasising the role of digital

technologies and their interactions with female entrepreneurs. With careful attention being paid to contexts (Welter, 2020) and gender considerations (Henry, Foss and Ahl, 2016; Henry and Lewis, 2023), this study helps to inform theoretical turns in entrepreneurship as digital technologies are shown as a powerful component of the interplay with female entrepreneurs for supporting innovative network structures; creating sustainable and resilient outcomes; and improving community wellbeing through expanded opportunities to access resources, capital and capacities in female entrepreneurship.

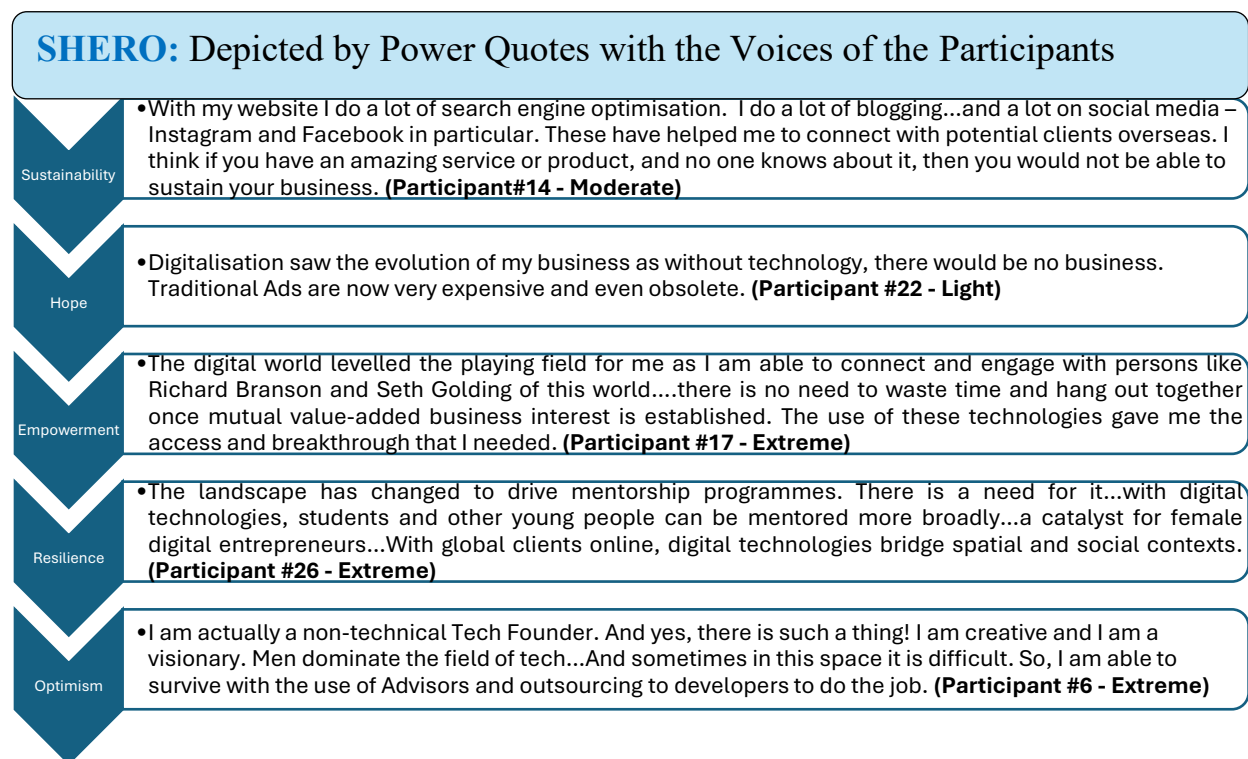


Figure 7. 1: SHERO as Illustrated by the Participants' Voices

Source: Author's own

Furthermore, this study, therefore, contributes to the discussion on the importance of the contextual analysis of socio-economic and cultural environments by uncovering how the complexity that

female-owned SMEs navigate with digital technologies can yield significant opportunities as well as challenges. This is particularly important as the research also captures the strengths and weaknesses of the female entrepreneurs in developing strategies, making decisions and undertaking activities as they used the technologies, resulting in transformation of their operations and performance. Another contribution of the study is in expanding the understanding of gender considerations in the digital entrepreneurial space. In this regard, the research ventures into clarifying the important role and effects that gender has on influencing digital transformational activities in entrepreneurship.

Along the same vein, the study contributes to recent discussions which are seeking to illuminate how female entrepreneurs who are non-IT professionals (as citizen developers) (Oltrogge *et al.*, 2018) and are outside the stereotypical Silicon Valley environment (Baker and Welter, 2024) are an important aspect of digital entrepreneurship through their contextualised agency. In keeping with a more pluralistic understanding of female entrepreneurship, the SHERO conceptual model of entrepreneuring contributes to a more holistic understanding of the opportunities and challenges of female entrepreneurship in the digital era in relation to elements of sustainability, hope, empowerment, resilience and optimism. In so doing, the model demonstrates a more integrated picture of the entrepreneurial outcomes from the use of digital technologies beyond gender alone which has implications for emerging issues in the field. One such issue relates to organising and developing female entrepreneurship amidst the disruptive and uncertainties of emerging digital technologies such as Artificial Intelligence and Quantum Computing. Hence, a direct implication of the research is that it encourages debates and academic scholarship to help shape and impact policy development and practices in entrepreneurship in a digital economy. In so doing, the study has further implication in helping to inform on how new and subsequent changes in digitalisation will affect innovative and adaptive strategies of businesses. Also, it helps to conceptualise and streamline decisions and solutions of the influence of digital technologies on regenerative outcomes and the entrepreneurial context. These contributions and implications of the study, point to a new and expanded research agenda that requires in-depth exploration of the systems (inclusive of the policies and structures) that would be most effective to foster business transformation among female digital entrepreneurs in their related contexts. The SHERO model is proposed as a useful contribution to the body of knowledge in the field of female digital entrepreneurship, given the

“double-edge sword” nature of digitalisation in terms of reinforced gender biases online, the potential risks of cybersecurity and blurred boundaries in the entrepreneurial ecosystem. **Figure 7.2** encapsulates the framework of the analysis of the research depicting the contextual factors influencing the entrepreneurial landscape of female entrepreneurs and the agentic role of the female entrepreneurs in shaping the results in the business processes and outcomes from the use of digital technologies. The key findings of the empirical study include the aggregate themes of entrepreneurial resilience, empowerment, leadership, and context which translate into the SHERO model.

The empirical evidence of this research demonstrates that within certain unique contexts and for previously stated reasons, the transformation of female entrepreneurship can defy as well as reinforce expectations through the use of digital technologies by female entrepreneurs. Therefore, in advancing a broader and more in-depth understanding of female entrepreneurship in developing countries, a focus should be on providing legislative, policy, institutional, and financial support to female entrepreneurs with the capacities and interests in leading their business transformation using digital technologies. Together with these enabling mechanisms, digital technologies can improve entrepreneurial sustainability, resilience and empowerment outcomes for female entrepreneurship that are propelled by the pathways and phenomena of enhanced entrepreneurial hope and optimism.

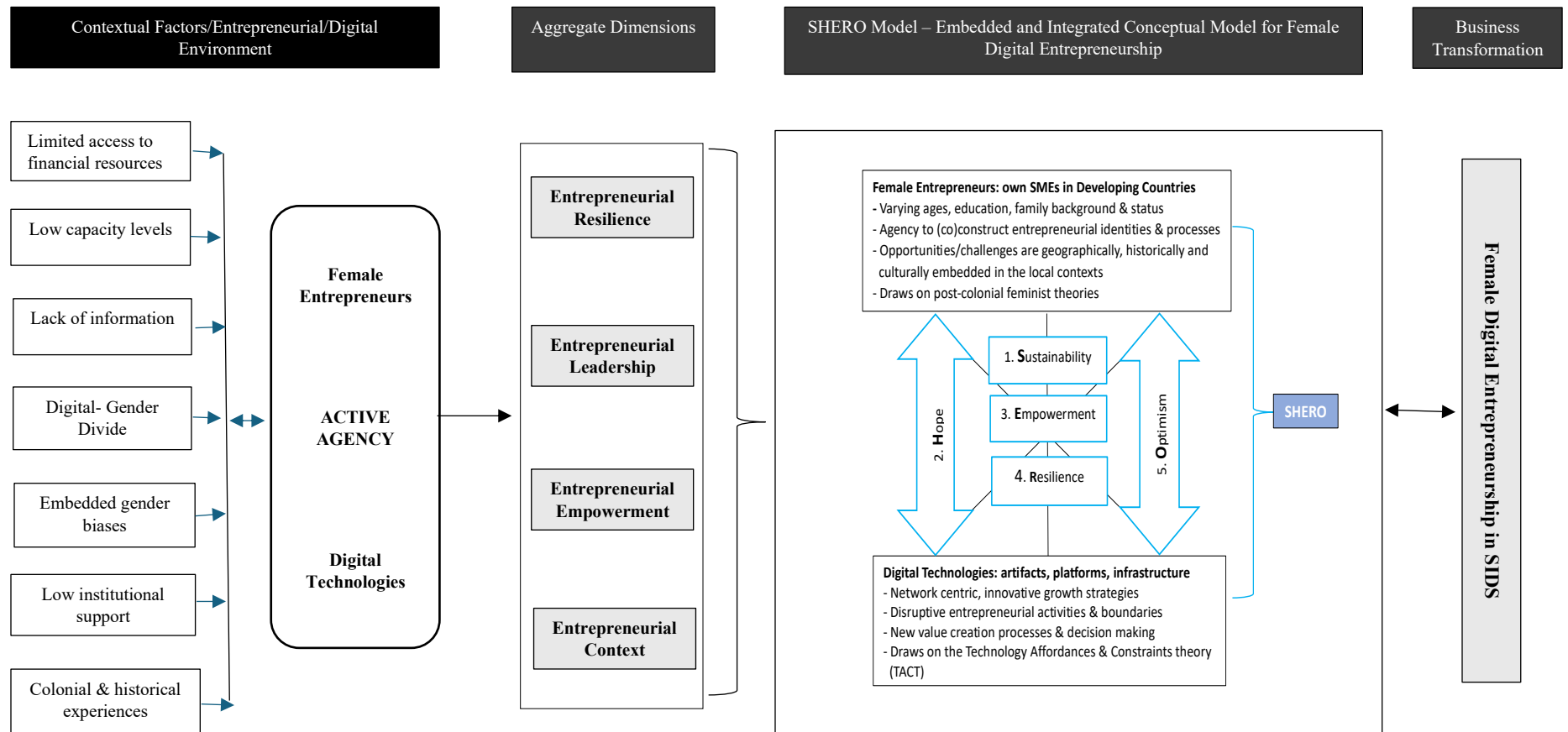


Figure 7. 2: Framing the Analysis of the Interplay between Female Entrepreneurship and Digital Technologies in Developing Countries

Source: Author's own

With the growing interest to understand more in-depth how digital technologies catalyse entrepreneurial activities (Nambisan, 2017), the research agenda on gender and entrepreneurship (Ahl and Marlow, 2012; Ahl and Marlow, 2021) as well as the scholarly debates on female digital entrepreneurship (Martinez Dy, Marlow and Martin, 2017; McAdam, Crowley and Harrison, 2018), this study can potentially be useful to contribute to the debate in general and on the (s)hero perspectives in entrepreneurship in particular (Nadin, Smith and Jones, 2020; Treanor, Jones and Marlow, 2020). Importantly, the results and the SHERO conceptual model of this study offer a promising avenue to bridge and converge theoretical silos of emerging digital technologies towards a more integrated perspective and framework involving gender, enablement factors (external and actor agency) and context to explore and understand the impact on entrepreneurial processes and outcomes (Davidsson, 2015; Giones and Brem, 2017), particularly in the context of developing countries. At its core, the SHERO model seeks to redefine what it means to be a female entrepreneur within the SIDS of the Caribbean region which is rooted in a post-colonial and digital contexts (Best, Lassalle and Nicolopoulou, 2024). With digital technologies, female entrepreneurship is creating spaces not just for connecting business women; enhancing their entrepreneurial experiences and potentials; and opening opportunities in new regional and international territories; but also for providing unique opportunities to connect the dots among SIDS and to foster a deeper understanding and appreciation for female entrepreneurship while remaining mindful of the dangers of reproducing or creating new challenges if new voices of female entrepreneurs, who are the main protagonists, are not considered nor listened to.

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APPENDICES

Appendix 1: Background Interview Documents

(a) Participant Information Sheet for [Participant X of Name of Country]

[FOR USE WITH STANDARD PRIVACY NOTICE FOR RESEARCH PARTICIPANTS]

Name of department: Hunter Centre for Entrepreneurship

Title of the study: Digital Technologies as a catalyst for transforming female entrepreneurship in developing countries

Introduction

As I continue to advance on this research journey, it is my pleasure to introduce myself to you. My name is Beverly Jacqueline Best. I am a second year Post Graduate Researcher of the Strathclyde Business School at the University of Strathclyde, in Glasgow, Scotland. I am keen to interact with you to obtain valuable insights on female entrepreneurship in the Caribbean.

What is the purpose of this research?

The aims of the research are as follows:

- To improve the understanding of the impact of digital technologies on female entrepreneurship as an international phenomenon and in the context of developing countries;
- To provide a deeper understanding of the role of digital technologies on female entrepreneurs' motivations in developing countries with a special focus on the Caribbean region; and
- To shed light on the experiences of female entrepreneurs and digital technologies towards explaining the implications for addressing societal challenges (inequality, discrimination, exclusion among others) in developing countries.

The reason for this study is that while the phenomenon of female entrepreneurship is important to developing countries, on a comparative basis there are not many empirical studies and in-depth research from the context of developing countries; particularly the Caribbean region which is an under-investigated region with the highest total entrepreneurial activity among women globally.

Therefore, this research project is intended to fill this research gap and to contribute to advancing the scholarship on female entrepreneurship and broadening the understanding of how digital entrepreneurship, which is affecting all business operations, impacts women in overcoming hurdles and embracing opportunities in their business endeavours.

Do you have to take part?

As a potential participant, it is important to note that your decision to become involved in this study is deemed to be fully voluntary and that you have the right to withdraw from the research process without any detrimental consequences to you.

What will you do in the project?

As a participant, you are expected to participate in one-on-one interviews and engage in discussions on your experience of female entrepreneurship in your country. The interview will take place face to face or on-line, whichever is more practical and feasible, for a duration of one hour. Dates and times of discussions will be mutually agreed upon in advance and a reminder will be sent 24 hours in advance.

The sessions will be audio recorded, and consent will be requested prior to the start of the discussion. The investigator will also take notes on any observations noted during the discussions. Upon request, transcribed notes will be shared with participants.

Why have you been invited to take part?

You have been invited to participate in this project because I am interested in female business owners, like yourself, from diverse sectors who integrate digital technologies (tools, platforms and infrastructure) in their day-to-day business operations. All invited women are between the age of 21 – 65 years who mainly manage or own small and medium enterprises which comprise 1- 19 employees in their respective countries in the Caribbean region.

The study will exclude minors (under the age of 21) as well as anyone considered to be vulnerable will not be investigated. Generally, Silicon Valley type female digital entrepreneurs (young hi-tech engineers or computer scientists) will also be excluded from the research as these are deemed to be exceptions to the everyday female entrepreneurs in Caribbean region and can skew the results of the investigation.

What are the potential risks to you in taking part?

There is a low likelihood of contracting the Covid-19 virus and monkey pox virus from face-to-face interactions during interviews. Measures will be taken to mitigate these risks by adhering to the latest guidelines and protocols to be adopted (e.g. wearing face masks, use of online communication tools).

What information is being collected in the project?

The type of information to be collected will be qualitative data on the participants use of digital technologies, the challenges (online and offline) faced and are impacting their entrepreneurial processes and outcomes, and the impact of socio-cultural and structural processes on your entrepreneurial intentions and experiences.

In addition, some secondary data will be collected from official databases to understand the trends and any general information that will be of interest to discuss further with the participants.

Who will have access to the information?

In keeping with the ethics and data protection policies of the University, the information provided by you, as a participant, will be kept confidential and secure. Based on the nature of the study, it is not expected that there will be a need for disclosure of information that will cause any imminent harm to you as a participant.

Personal information will not be shared with any individuals or entities outside of the University of Strathclyde. In any event, except for the name of the country, participants will be anonymised with codes that are known only to the Investigator and keys to the codes will be kept in separate location.

It should be noted that information that needs to be translated to English will be shared with a professional translator who is bound by standard ethical principles of confidentiality, while the personal data of the respective participants remain anonymised.

The information collected will be analysed mainly in the country of study and in the Caribbean region to ensure integrity of the data quality through follow ups and validation. Notwithstanding, since the Investigator will be responsible for processing anonymised personal information, there will be no transfer of personal information outside of the UK, which is the home base of the research work.

Where will the information be stored and how long will it be kept for?

The information collected will be stored on a dedicated laptop provided by the University of Strathclyde and a secure cloud service of the University that is password protected where only the investigator has access to the files and folders. In addition, field notes taken during the interviews will be kept in a bounded notebook with numbered pages. This notebook will be stored in a personal filing cabinet that is kept locked, where access to the key is solely restricted to the investigator.

In keeping with the University's retention policy, information collected will be stored up to a maximum of 10 years. Upon acceptance of the manuscript of the Thesis, the data will be deposited in PURE – the University's data repository – to ensure congruence with good data storage and security principles. It is important to note that access to the uploaded data stored in PURE will be restricted.

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

All personal data will be processed in accordance with data protection legislation. Please read our [Privacy Notice for Research Participants](#) for more information about your rights under the legislation.

What happens next?

Should you be interested in participating in this project, kindly confirm this by contacting the Researcher via the contact details listed hereunder.

If on the other hand, you do not wish to participate in this project, I wish to take this opportunity to thank you for your time and attention.

All participants are eligible to receive via email a “study results letter” which summarizes the main findings of the project. The letter will include a web-based link to the details of research outcomes. In addition, hard copies of the summarized key findings will be sent to participants upon request.

Researcher contact details:

Name of Researcher: Beverly Jacqueline Best
University of Strathclyde
Department: Hunter Centre for Entrepreneurship
Stenhouse Wing, 401, 199 Cathedral Street,
Glasgow G4 0QU I

Email: beverly.best@strath.ac.uk
Tel 0141 548 4008

Chief Investigator details:

Name: Dr. Katerina Nicolopoulou
Position: Professor
Department: Hunter Centre for Entrepreneurship
University of Strathclyde
Stenhouse Wing, 401, 199 Cathedral Street,
Glasgow G4 0QU I
Email: katerina.nicolopoulou@strath.uk.ac
Tel: 0141 548 4008

Name: Dr. Paul Lassalle
Position: Senior Lecturer
Department: Hunter Centre for Entrepreneurship
University of Strathclyde
Stenhouse Wing, 401, 199 Cathedral Street,
Glasgow G4 0QU I
Email: paul.lassalle@strath.uk.ac
Tel 0141 548 4008

This research was granted ethical approval by the Hunter Centre for Entrepreneurship Ethics Committee.

If you have any questions/concerns, during or after the research, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Secretary to the Hunter Centre for Entrepreneurship Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE

Telephone: 0141 548 3707
Email: ethics@strath.ac.uk

Consent Form for [Participant x of Name of Country]

Name of department: Hunter Centre for Entrepreneurship

Title of the study: Digital Technologies as a catalyst for transforming female entrepreneurship in developing countries

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request. This includes the following personal data:
 - audio recordings of interviews that identify me; and
 - my personal information from transcripts.
- I understand that anonymised data (i.e. data that do not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I consent to being a participant in the project.
- I consent to being audio recorded as part of the project ('Yes / No').

(PRINT NAME)	
Signature of Participant:	Date:

(b) Privacy Notice for Participants in Research Projects

Introduction	
This privacy notice relates to individuals participating in research projects led by the University of Strathclyde. It explains how the University of Strathclyde will use your personal information and your rights under data protection legislation. It is important that you read this notice prior to providing your information. Please note that this standard information should be considered alongside information provided by the researcher for each project, which is usually in the form of a Participant Information Sheet (PIS). The PIS will include further details about how personal information is processed in the particular project, including: what data is being processed; how it is being stored; how long it will be retained for, and any other recipients of the personal information. It is usually given to participants before they decide whether or not they want to participate in the research.	
Data controller and the data protection officer	
The University of Strathclyde is the data controller under data protection legislation. This means that the University is responsible for how your personal data is used and for responding to any requests from you in relation to your personal data. Any enquiries regarding data protection should be made to the University's Data Protection Officer at dataprotection@strath.ac.uk.	
Legal basis for processing your personal information	
If you are participating in a research project, we may collect your personal information. The type of information that we collect will vary depending on the project. Our basis for collecting this information is outlined below:	
Type of information	Basis for processing
Personal information and associated research data collected for the purposes of conducting research.	It is necessary for the performance of a task carried out in the public interest.
Certain types of personal information such as information about an individual's race, ethnic origin, politics, religion, trade union membership, genetics, biometrics (where used for ID purposes), health, sex life, or sexual orientation are defined as 'Special Category' data under the legislation.	It is necessary for the performance of a task carried out in the public interest and It is necessary for scientific or historical research purposes in accordance with the relevant legislation (Data Protection Act 2018, Schedule 1, Part 1, Para 4).
Criminal conviction / offence data	It is necessary for the performance of a task carried out in the public interest and is processed in accordance with Article 10 of the General Data Protection Regulation and the Data Protection Act 2018, Schedule 1, Part 1, Para 4.
Details of transfers to third countries and safeguards	
For some projects, personal information may be transferred outside the UK. This will normally only be done when research is taking place in locations outside the UK. If this happens, the University will ensure that appropriate safeguards are in place. You will be fully informed about any transferring of data outside the UK and associated safeguards, usually in the Participant Information Sheet.	

Sharing data
If data will be shared with other individuals or organisations, you will be advised of this in the PIS.
Retention of consent forms
If you participate in a research project, you may be asked to sign a participant consent form. Consent forms will typically be retained by the University for at least as long as the identifiable research data are retained. In most cases they will be retained for longer, the exact time frame will be determined by the need for access to this information in the unfortunate case of an unanticipated problem or a complaint. 5 years after the research is completed will be suitable for many projects, but beyond 20 years will be considered for any longitudinal or 'high risk' studies involving children, adults without capacity or a contentious research outcome.
Data subject rights
You have the right to: be informed about the collection and use of your personal data; request access to the personal data we hold about you; request to have personal data rectified if it is inaccurate or incomplete; object to your data being processed; request to restrict the processing of your personal information; and rights related to automated decision-making and profiling. To exercise these rights please contact dataprotection@strath.ac.uk. Please note, many of these rights do not apply when the data is being used for research purposes. However, we will always try to comply where it does not prevent or seriously impair the achievement of the research purpose.
Right to complain to supervisory authority
If you have any concerns/issues with the way the University has processed your personal data, you can contact the Data Protection Officer at dataprotection@strath.ac.uk . You also have the right to lodge a complaint against the University regarding data protection issues with the Information Commissioner's Office (https://ico.org.uk/concerns/).



(c) Brief on Research Project

Name of Researcher	Beverly Jacqueline Best
Name of University	University of Strathclyde
Title of the study	Digital Technologies as a catalyst for transforming female entrepreneurship in developing countries.
Personal Information & Interest	I am a citizen of Trinidad and Tobago and a second year Doctoral Researcher of the Strathclyde Business School at the University of Strathclyde, in Glasgow, Scotland. I am keen to conduct semi-structured interviews to obtain valuable insights on female entrepreneurship in the Caribbean.
Purpose of the Research	The reason for this study is that while the phenomenon of female entrepreneurship is important to developed and developing countries, on a comparative basis there are not many empirical studies and in-depth research from the context of developing countries; particularly the Caribbean region which is an under-investigated region with the highest total entrepreneurial activity among women globally. Therefore, this research project is intended to fill this research gap and to contribute to advancing the scholarship on female entrepreneurship and broadening the understanding of how digital entrepreneurship, which is affecting all business operations, impacts women in overcoming hurdles and embracing opportunities in their business endeavours. The main objectives of the research are as follows: (a) To improve the understanding of the impact of digital technologies on female entrepreneurship as an international phenomenon and in the context of developing countries, (b) To provide a deeper understanding of the role of digital technologies on female entrepreneurs' motivations in developing countries with a special focus on the Caribbean region, and (c) To shed light on the experiences of female entrepreneurs and digital technologies towards explaining the implications for addressing societal challenges (inequality, discrimination, exclusion among others) in developing countries.
Potential Participants of the Research	Female/women entrepreneurs between the ages of 21 – 65 who manage or own small and medium businesses which comprise 1-19 employees in the following Caribbean countries: Trinidad & Tobago, Barbados, and Jamaica.

(d) Discussion Guide for Research Participants

Main Themes/Topics for Discussion:

1. The entrepreneurship context/landscape in your country.
2. The challenges and constraints you face as a female entrepreneur.
3. The use of digital technologies in your business (what/how/who/why).
4. The role of digital technologies in female entrepreneurship (impact/benefits/constraints).

(e) Approved Ethics Application Form

OFFICE USE ONLY

UECREf

Date

Paper



Ethics Application Form

Please answer all questions

1. Title of the investigation

Digital Technologies as a catalyst for transforming female entrepreneurship in developing countries

Please state the title on the PIS and Consent Form, if different:

2. Chief Investigator (must be at least a Grade 7 member of staff or equivalent)

Name: Dr. Katerina Nicolopoulou

X Professor

☐ Reader

☐ Senior Lecturer

☐ Lecturer

☐ Senior Teaching Fellow

☐ Teaching Fellow

Department: Hunter Centre for Entrepreneurship

Telephone:

E-mail: katerina.nicolopoulou@strath.ac.uk

3. Other Strathclyde investigator(s)

Name: Dr. Paul Lassalle

Status (e.g. lecturer, post-/undergraduate): Senior Lecturer

Department: Hunter Centre for Entrepreneurship

Telephone:

E-mail: paul.lassalle@strath.ac.uk

4. Non-Strathclyde collaborating investigator(s) (where applicable) N/A

Name:

Status (e.g. lecturer, post-/undergraduate):

Department/Institution:

If student(s), name of supervisor:

Telephone:

E-mail:

Please provide details for all investigators involved in the study:

5. Overseas Supervisor(s) (where applicable) N/A

Name(s):

Status:

Department/Institution:

Telephone:

Email:

I can confirm that the local supervisor has obtained a copy of the Code of Practice: Yes ☐ No ☐

Please provide details for all supervisors involved in the study:

6. Location of the investigation

At what place(s) will the investigation be conducted

The investigation will be done with female entrepreneurs (owners and managers) of businesses in select countries in Latin America and the Caribbean. The proposed countries are Costa Rica, Brazil, Barbados, Jamaica and Trinidad & Tobago.

If this is not on University of Strathclyde premises, how have you satisfied yourself that adequate Health and Safety arrangements are in place to prevent injury or harm?

The selection of business enterprises will be done through purposive and snowball sampling based on the recommendation of local established entities within the entrepreneurial ecosystem. This process will minimise involvement with business entities where there are risks related to health and safety during the investigation. As far as possible, attempts will be made to undertake the field work in the natural setting of the female entrepreneurs during "normal" working hours where other employees are present to minimise any potential safety risks. In addition, online tools will be used to facilitate follow-up field work and to supplement information collected on site.

7. Duration of the investigation

Duration(years/months) : 18 months

Start date (expected): 01 / 10 / 2022

Completion date (expected): 01 / 04 / 2024

8. Sponsor

Please note that this is not the funder; refer to Section C and Annexes 1 and 3 of the Code of Practice for a definition and the key responsibilities of the sponsor.

Will the sponsor be the University of Strathclyde: Yes x ☐ No ☐

If not, please specify who is the sponsor:

9. Funding body or proposed funding body (if applicable) [N/A](#)

Name of funding body:

Status of proposal – if seeking funding (please click appropriate box):

☐ In preparation

☐ Submitted

☐ Accepted

Date of submission of proposal: / / Date of start of funding: / /

10. Ethical issues

Describe the main ethical issues and how you propose to address them:

The nature of research does not pose any overt ethical concerns. Therefore, the main ethical issues which relate to the investigate include actions that ensure adherence to the principles of transparency, confidentiality, anonymity, sensitivity, and accountability during the data collection, data storage and data analysis phase so that the rights, dignity, and well-being of all research participants (that is interviewees and researcher) are protected.

Central to this arrangement is my completion and submission of the requisite Ethics Form of the University of Strathclyde in order to obtain the approval from the Hunter Centre for Entrepreneurship (HCE) Ethics Committee to commence the fieldwork in year 2 which will be circumscribed by the above-mentioned standard ethical principles.

Further, the interview will only be conducted with persons between the ages of 21-65 who operate within the Latin America and Caribbean (LAC) region entrepreneurial ecosystem. It should be noted that within the LAC region, there is a large number of persons who speak English, Spanish and Portuguese. In the circumstances, there can be some issues related to breach of confidentiality and misrepresentation of information through the interpretation or translation processes. This will be addressed by the use of an audio recorder to capture the data, together with Certified and Registered Translators/Interpreters who themselves are bound by such ethical principles ascribed to their profession. The translated text will be shared with the said participants to validate accuracy of the data collected.

11. Objectives of investigation (including the academic rationale and justification for the investigation) Please use plain English.

The emancipatory, empowerment and orientation dimensions of digital technologies on female entrepreneurial processes are both important worldwide issues that have encouraged global debates on whether these technologies contribute to the transformation of women-owned businesses into a vicious circle between low-income and lacking education, where women can either reap economic empowerment gains or be further marginalized by the digital gender divide (Nambisan, 2017; Ughetto *et. al*, 2019). Since in-depth analytical research on women entrepreneurship in the LAC region is a relatively new area of interest, this research is expected to broaden the lens on the field of entrepreneurship in general.

Embedded in these considerations is the need for seminal studies on female digital entrepreneurship that are 'context-focused' (Welter and Baker, 2021) in terms of the gender, digital and the LAC region. This is expected to infuse diversity in the entrepreneurship debates and contribute to reshaping policy environment that will render real and sustained benefits to female entrepreneurship through digital technologies (Martinez Dy, Martin and Marlow, 2018). Hence the research intends to focus on the theoretical approaches to female entrepreneurship from the lenses of entrepreneurship theories, feminist and cyberfeminist theories with a view to ensuring the key and diverse issues affecting female entrepreneurs are critically examined (Foss *et. al*, 2018) The specific focus of the converging impact of digital technologies and female entrepreneurship in the LAC region is expected to broaden the scholarship on women entrepreneurship towards providing information that will enhance the theoretical framework and strengthen evidence-based policy formulation for transforming women entrepreneurship.

12. Participants

Please detail the nature of the participants:

Female business owners from diverse sectors who can be described as light digital entrepreneurs (that is, those who are using digital technologies as a complement to the more traditional processes); medium digital entrepreneurs (that is, those which cannot exist without using digital infrastructure to focus on digital products and services); and high digital entrepreneurs (that is, those whose business processes – production, services, advertisement and distribution - are all digital). These will be women who mainly manage or own small and medium enterprises which comprise 1- 10 employees in the LAC region.

Summarise the number and age (range) of each group of participants:

Number: Small sample of 15 – 20 persons within the entrepreneurial ecosystem in each country to facilitate in-depth exploratory research Age (range): 21 – 65 years

Please detail any inclusion/exclusion criteria and any further screening procedures to be used:

- Minors (under the age of 21) and anyone considered to be vulnerable will not be investigated.
- Silicon Valley type female digital entrepreneurs (generally characterised as high-tech, young, white engineers and computer scientists) will be exceptions to the everyday female entrepreneurs in LAC region and can skew the results of the investigation.

13. Nature of the participants

Please note that investigations governed by the Code of Practice that involve any of the types of participants listed in B1(b) must be submitted to the University Ethics Committee (UEC) rather than DEC/SEC for approval.

Do any of the participants fall into a category listed in Section B1(b) (participant considerations) applicable in this investigation?: Yes ☐ No ☒

If yes, please detail which category (and submit this application to the UEC):

14. Method of recruitment

Describe the method of recruitment (see section B4 of the Code of Practice), providing information on any payments, expenses or other incentives.

The recruitment of participants will be done via a formal approved letter written on the official letterhead of the UoS. All participants will be provided with a Brief on the Research (inclusive of accurate information on objective, methodology and expected results) to facilitate their decision to be involved in the investigation. There will be no incentives given to participants such as fees to encourage participation.

For participants who are non-native English Speakers or not fluent in English language, the letter will be translated in the native language (Spanish or Portuguese in the LAC region) and certified translators/interpreters will be used to support the legitimacy of the information collected in the investigation. As mentioned previously, the translator/interpreter will be bound by professional ethical principles of the Profession which will form part of the contractual arrangement.

15. Participant consent

Please state the groups from whom consent/assent will be sought (please refer to the Guidance Document). The PIS and Consent Form(s) to be used should be attached to this application form.

N/A. Consent from participants will be voluntary and informed based on an official letter and the Brief sent in advance of the investigation.

This will be supplemented by a completed PIS and a Consent Form as shown in the attached documents.

16. Methodology

Investigations governed by the Code of Practice which involve any of the types of projects listed in B1(a) must be submitted to the University Ethics Committee rather than DEC/SEC for approval.

Are any of the categories mentioned in the Code of Practice Section B1(a) (project considerations) applicable in this investigation? ☐ Yes ☒ No

If 'yes' please detail:

Describe the research methodology and procedure, providing a timeline of activities where possible. Please use plain English.

The methodological framework adopts a qualitative research approach that is inter-disciplinary in nature and employs case study method, and research tools of purposive and snowball sampling, semi-structured interviews, and structured observations to unearth new contextual perspectives as well as to broaden the theoretical boundaries on the influence of digital technologies on female entrepreneurship (Tracy, 2017).

Qualitative methods will be employed given that the dynamics relating to the high level of informality and the challenges of the LAC entrepreneurial ecosystem are not easily quantifiable. The researcher's emphasis on understanding the contextual perspectives supports the selection of qualitative methods. The focus on adopting a naturalistic inquiry, which features interaction between the researcher and the participants, is intended to result in a deeper holistic understanding of the unique issues (Gehman *et. al*, 2018) surrounding female entrepreneurship in LAC .

The research design is interpretive in nature as it seeks to reveal and give meaning to the unique experiences and nuances on issues (Packard, 2017) which surround female entrepreneurship and digital technologies in the region and the interplay of the impact of digital entrepreneurship at the intersection of gender on female entrepreneurship. The interpretive nature of this study lends itself to explore in-depth the experiences of the participants in the field. To facilitate more in-depth exploration and accurate analyses, interviews with the participants portend a viable option to drive the data collection process. Since the main focus is to capture the rich explanations of the "conscious intentions" and experiences of female entrepreneurs in their "context" (Dy *et al*, 2017), small samples will be selected and exploratory qualitative enquiry will be undertaken as these are in keeping with the philosophical assumptions of interpretivist theory.

Cognisant of the importance of the social, institutional and other contextual aspects that affect conditions for female entrepreneurship without comparison to an inherent masculine model, the research design does not reinforce the traditional individualist focus in entrepreneurship research. Additionally, with the array of concerns related to the social and structural mechanisms of entrepreneurship and the recognition of the value of intersectionality of gender (Dy *et.al*, 2017), within the contexts of female entrepreneurship and digital entrepreneurship, this approach supports calls among scholars for a critical assessment of their qualitative impact.

The proposed timeline of the research activities is shown in the table below:

Months 11 – 18	• September, 22: Finalise data collection tools, review and analyse secondary data • October, 22: Undertake Pilot study in Costa Rica to refine strategy for empirical data collection • November - December, 22: - Conduct Phase I of data collection in 2 countries (Costa Rica and Barbados) utilising the data collection tools and methods (semi-structured interviews with broad themes, transcription etc.) - Commence coding and preliminary data analysis to avoid loss of information and biases caused by elapsed time. <i>(This is of particular importance given the qualitative approach adopted.)</i> • January – March, 23: In-depth analysis and write-up of preliminary findings from data collected in Phase I
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17. Previous experience of the investigator(s) with the procedures involved. Experience should demonstrate an ability to carry out the proposed research in accordance with the written methodology.

The investigator has demonstrated and practical experience in previous field work and skills development as follows:

- (a) Undertaking qualitative research at the Masters' Level while pursuing an MBA programme at Maastricht School of Management (MsM) in 2016. For the field work, the investigator used semi-structured interviews, and administered an online survey to collect and analyse primary data.
 - (b) Gaining knowledge and successfully completing a certificate programme in "Evidence Based Policy Research Methods" from the Maastricht Graduate School of Governance (University of Maastricht) in 2020. The modules include research design, proposal development, entrepreneurship in developing countries, qualitative data analysis, and proposal presentation and research dissemination.
 - (c) Completing successfully taught modules in year 1 of the PhD programme at the University of Strathclyde (2021 -2022) in Research Methods, Research philosophy, Advanced Qualitative Research are instrumental in laying a solid foundation for designing and implementing the proposed field work.
-

18. Data collection, storage and security

How and where are data handled? Please specify whether it will be fully anonymous (i.e. the identity unknown even to the researchers) or pseudo-anonymised (i.e. the raw data is anonymised and given a code name, with the key for code names being stored in a separate location from the raw data) - if neither please justify.

The handling of the data for the study is guided by a dynamic Data Management Plan to facilitate accessibility, interoperability, reusability and retrievability during and post the research period. To obtain a preliminary assessment of trends, this project will review data from secondary data sources on female entrepreneurship in LAC countries such as:

- (a) Reynolds, Paul D. Global Entrepreneurship Monitor [GEM]: Adult Population Survey Data Set, 1998-2017. Inter-university Consortium for Political and Social Research [distributor], 2022-07-12. <https://doi.org/10.3886/ICPSR20320.v6>
- (b) https://labordoc.ilo.org/discovery/fulldisplay/alma992585893402676/41ILO_INST:41ILO_V2_OR OR <https://www.ilo.org/global/statistics-and-databases/lang--en/index.htm>

All secondary data used will be acknowledged whether in the Data Management Plan (DMP) or in any metadata created from these data sources.

Primary data from the case study method will be collected via semi-structured interviews and observations in the natural environment. The data type will include audio recorded discussions, as well as notes from transcription and observation. In some instances, the audio recorded discussions may need to be translated to English, given the plurality of languages in LAC (e.g. English, Spanish and Portuguese). To facilitate accuracy of the data, the notes will be shared with the participants (upon request and especially with non-English speakers) to confirm the content.

The data collected will be pseudo-anonymised with code names by country to facilitate comparative country analysis as well as to preserve the privacy of the participants. The structuring of the transcribed notes will include folders named by Country, and each case study will be kept in a separate file. The respective saved files (in pdf format) will be named to specify which version is validated by the participants. This is intended to enhance quality assurance of the data collected and analysed for the study. Finally, considering the amplitude of data to be collected using qualitative methods, NVivo computer software will be employed to assist with the structuring and management processes.

Explain how and where it will be stored, who has access to it, how long it will be stored and whether it will be securely destroyed after use:

During the research period, the field notes will be kept in a bounded notebook with numbered pages. The notebook will be stored in a personal filing cabinet that is kept locked, where access to the key is solely restricted to the investigator. As a back-up, the field notes and the audio recordings will be password protected and transcribed immediately afterwards to avoid data loss and to ensure preservation of data integrity and security. The data will be transcribed on the university's laptop and saved on UoS One drive (Strathcloud and Sharepoint) in their respective folders and files as outlined in the DMP for the study.

Upon acceptance of the manuscript of the Thesis, the data will be deposited in PURE – the University's data repository and research information system – to ensure congruence with good data storage and security principles. Access to the uploaded data stored in PURE will be restricted and will be preserved for a maximum of 10 years.

Will anyone other than the named investigators have access to the data? Yes ☐ No ☒

If 'yes' please explain:

19. Potential risks or hazards

Briefly describe the potential Occupational Health and Safety (OHS) hazards and risks associated with the investigation:

Due to the current global COVID-19 pandemic and the health emergency of Monkey Pox, there can be health and safety risks related to travel and to engage in face-to-face consultations (e.g. semi-structured interviews) and observations with potential respondents for the collection of primary data. Therefore, the research processes will adhere to the requisite measures and protocols in place in the respective LAC countries depending on the evolution of the health crises.

In adherence to the established Health Protocols, while progressing on the research project, the use of online tools such as Zoom, Teams, and GotoMeeting will also be used to mitigate against these potential health risks.

It is also noted that the use of online tools for engaging with participants can pose further constraints that lead to selection bias; whereby potential respondents are limited to those with access to online tools at the time of study. Hence, the investigator will take steps to ensure that the management of these health and safety risks do not further disadvantage the study by employing available and ubiquitous digital technologies such as smart phones and WhatsApp to facilitate access. The investigator will also work with national online service providers to arrange access for data packages for local participants.

Please attach a completed eRisk Assessment for the research. Further Guidance on Risk Assessment and Form can be obtained on [Occupational Health, Safety and Wellbeing's webpages](#)

Completed and submitted Form online.

20. What method will you use to communicate the outcomes and any additional relevant details of the study to the participants?

In light of the thrust of this study to co-create new insights on female entrepreneurship, the investigator will prepare a study results letter which synthesizes the main findings and email it to the participants. The letter will include a web-based link to the details of research outcomes. In addition, hard copies of the summarized key findings will be sent to participants upon request.

21. How will the outcomes of the study be disseminated (e.g. will you seek to publish the results and, if relevant, how will you protect the identities of your participants in said dissemination)?

With the objective of contributing to the body of knowledge that will be of interest to existing and potential female entrepreneurs, government officials (particularly policy makers), business associations, universities, other researchers, young people (inclusive of boys and girls at college or secondary school), and the participants involved in the field work, a range of mediums and methods will be used to disseminate the findings of this study. This is intended to yield optimal impact in information sharing and communication given the intuitive approach towards ensuring relevance to the respective target audience. Some of the key dissemination modalities and tools will include:

- Publications in international and regional journals (such as Journal of Business Research, Small Business Economics, Academy of Management Review (AMR), Caribbean Journal of Latin America and Caribbean Studies); publication of articles in newspapers in the LAC region;
- Contribution of Book chapter on “Entrepreneurship and Diversity”;
- Presentations at international and regional conferences such as at European Academy of Management (EURAM), the Diana Project Conference, and Globelics Biennial Conference in LAC region;
- Meetings (face-to-face or via an online platform such as Zoom, Microsoft Teams); sharing of information through social media (Twitter, Facebook, LinkedIn);
- Websites of international and regional organizations (such as World Bank, Inter-American Development Bank, and Universities in Maastricht and LAC region);
- Developing policy briefs for publication in the LAC region.

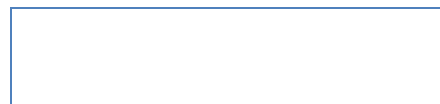
Checklist	Enclosed	N/A
Participant Information Sheet(s)	X	☐
Consent Form(s)	X	☐
Sample questionnaire(s)	☐	X
Sample interview format(s)	X	☐
Sample advertisement(s)	☐	X
OHS Risk Assessment (S20)	☐	X
Any other documents (please specify below)	☐	X
	☐	☐
	☐	☐
	☐	☐
	☐	☐

22. Chief Investigator and Head of Department Declaration

Please note that unsigned applications will not be accepted and both signatures are required

I have read the University's Code of Practice on Investigations involving Human Beings and have completed this application accordingly. By signing below, I acknowledge that I am aware of and accept my responsibilities as Chief Investigator under Clauses 3.11 – 3.13 of the [Research Governance Framework](#) and that this investigation cannot proceed before all approvals required have been obtained.

Signature of Chief Investigator

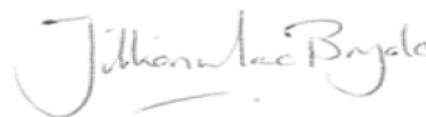


Please also type name here:

KATERINA NICOLOPOULOU

I confirm I have read this application, I am happy that the study is consistent with departmental strategy, that the staff and/or students involved have the appropriate expertise to undertake the study and that adequate arrangements are in place to supervise any students that might be acting as investigators, that the study has access to the resources needed to conduct the proposed research successfully, and that there are no other departmental-specific issues relating to the study of which I am aware.

Signature of Head of Department



Please also type name here

JILLIAN MACBRYDE

Date:

/ /

23. Only for University sponsored projects under the remit of the DEC/SEC, with no external funding and no NHS involvement

Head of Department statement on Sponsorship

This application requires the University to sponsor the investigation. This is done by the Head of Department for all DEC applications with exception of those that are externally funded and those which are connected to the NHS (those exceptions should be submitted to R&KES). I am aware of the implications of University sponsorship of the investigation and have assessed this investigation with respect to sponsorship and management risk. As this particular investigation is within the remit of the DEC and has no external funding and no NHS involvement, I agree on behalf of the University that the University is the appropriate sponsor of the investigation and there are no management risks posed by the investigation.

If not applicable, tick here ☐

Signature of Head of Department

Please also type name here

Date:

/ /

For applications to the University Ethics Committee, the completed form should be sent to ethics@strath.ac.uk with the relevant electronic signatures.

24. Insurance

The questionnaire below must be completed and included in your submission to the UEC/DEC/SEC:

Is the proposed research an investigation or series of investigations conducted on any person for a Medicinal Purpose? Medicinal Purpose means: ▪ treating or preventing disease or diagnosing disease or ▪ ascertaining the existence degree of or extent of a physiological condition or ▪ assisting with or altering in any way the process of conception or ▪ investigating or participating in methods of contraception or ▪ inducing anaesthesia or ▪ otherwise preventing or interfering with the normal operation of a physiological function or ▪ altering the administration of prescribed medication.	Yes / ☐ No
--	--

If “Yes” please go to **Section A (Clinical Trials)** – all questions must be completed

If “No” please go to **Section B (Public Liability)** – all questions must be completed

Section A (Clinical Trials)

Does the proposed research involve subjects who are either: i. under the age of 5 years at the time of the trial; ii. known to be pregnant at the time of the trial	Yes / No
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If **"Yes"** the UEC should refer to Finance

Is the proposed research limited to: iii. Questionnaires, interviews, psychological activity including CBT; iv. Venepuncture (withdrawal of blood); v. Muscle biopsy; vi. Measurements or monitoring of physiological processes including scanning; vii. Collections of body secretions by non-invasive methods; viii. Intake of foods or nutrients or variation of diet (excluding administration of drugs).	Yes / No
---	----------

If **"No"** the UEC should refer to Finance

Will the proposed research take place within the UK?	Yes / No
--	----------

If **"No"** the UEC should refer to Finance

Title of Research		
Chief Investigator		
Sponsoring Organisation		
Does the proposed research involve:		
a) investigating or participating in methods of contraception?	Yes / No	
b) assisting with or altering the process of conception?	Yes / No	
c) the use of drugs?	Yes / No	
d) the use of surgery (other than biopsy)?	Yes / No	
e) genetic engineering?	Yes / No	
f) participants under 5 years of age (other than activities i-vi above)?	Yes / No	
g) participants known to be pregnant (other than activities i-vi above)?	Yes / No	
h) pharmaceutical product/appliance designed or manufactured by the institution?	Yes / No	
i) work outside the United Kingdom?	Yes / No	

If **“YES”** to **any** of the questions a-i please also complete the **Employee Activity Form** (attached).
 If **“YES”** to **any** of the questions a-i, and this is a follow-on phase, please provide details of SUSARs on a separate sheet.
 If **“Yes”** to any of the questions a-i then the UEC/DEC/SEC should refer to Finance (insurance-services@strath.ac.uk).

Section B (Public Liability)	
Does the proposed research involve :	
a) aircraft or any aerial device	Yes / No
b) hovercraft or any water borne craft	Yes / No
c) ionising radiation	Yes / No
d) asbestos	Yes / No
e) participants under 5 years of age	Yes / No
f) participants known to be pregnant	Yes / No
g) pharmaceutical product/appliance designed or manufactured by the institution?	Yes / No
h) work outside the United Kingdom?	Yes / No

If **“YES”** to any of the questions the UEC/DEC/SEC should refer to Finance (insurance-services@strath.ac.uk).

For NHS applications only - Employee Activity Form

Has NHS Indemnity been provided?	Yes / No
Are Medical Practitioners involved in the project?	Yes / No
If YES, will Medical Practitioners be covered by the MDU or other body?	Yes / No

This section aims to identify the staff involved, their employment contract and the extent of their involvement in the research (in some cases it may be more appropriate to refer to a group of persons rather than individuals).

Chief Investigator		
Name	Employer	NHS Honorary Contract?
KATERINA NICOLOPOULOU	UNIVERSITY OF STRATHCLYDE	Yes / No
Others		
Name	Employer	NHS Honorary Contract?
PAUL LASSALLLE	UNIVERSITY OF STRATEHCYDE	Yes / No
		Yes / No
		Yes / No
		Yes / No

Please provide any further relevant information here:

Appendix II: Sample of Cover Note Accompanying Research Background Documents

Dear [Name of participant]

Thanks for taking the time this afternoon to chat with me briefly. I wish to thank you in advance for your interest in participating in my research project.

Recalling our conversation, I am sharing the following background documents with you in advance to facilitate our discussion on **[date]** at **[time]**. Kindly confirm that this arrangement will be convenient for you.

Ideally, you should review these and be in agreement with the intent of and process for our discussion by signing the Consent Form attached. These are as follows:

1. Participant Information Sheet (PIS) with Consent Form (ethical requirement)
2. Privacy Notice (ethical requirement)
3. Research Brief (as background)
4. Discussion Guide (to assist with your preparation)

I have already sent the invitation (Zoom Link) for our online discussion (approximately 1 hour) related to this project. Please feel free to contact me via email or WhatsApp should you require any further clarification. Also, note that I am flexible and can meet (online) outside your normal working hours should this become necessary.

Thanks again and looking forward to speaking with you soon.

Kind Regards

Beverly J. Best

Post-Graduate Researcher,

Hunter Centre for Entrepreneurship

Stenhouse Wing, 401, 199 Cathedral Street,

Glasgow , G4 0QU | Tel 0141 548 4008

Website - <https://www.strath.ac.uk/business/huntercentreforentrepreneurship/>

Appendix III: Semi-Structured Interview Instrument

SECTION I: GENERAL BACKGROUND INFORMATION

Participant Code: (Initial of Country+Number+MM+YY)

Contact Information.....

Profile of Participant (Select the Most Appropriate)

Owner/Manager

Co-Owner

Other (specify)

Employment Type: Full/Part Time.....

No. of Years Employed in Business (select one): ☐ 1 – 3 ☐ 4 – 6 ☐ 7 – 9 ☐ 10 and above

Country of Operation:.....

Type of Business/Sector: (Specify).....

Number of Employees: Total -Female -Male -

Marital Status:..... No of Children:

Education/Training/Skills:.....

SECTION II: “SPECIFIC” INFORMATION ON KEY THEMATIC ISSUES

1. Entrepreneurship Context in LAC region

- ☐ Tell me about your business (rationale, story, challenges)
- ☐ Why did you establish your business? And what were the principal driving factors?
- ☐ What is your experience of doing business in the local environment (state country of location)?
- ☐ Describe some of the main changes you have seen within your business operations and the wider business environment in your area/country.

2. Challenges and Constraints of Female Entrepreneurs

- ☐ Describe the general experience of female entrepreneurs by highlighting the key successes and failures.
- ☐ Tell me about the issues that influence the entrepreneurial experiences of female entrepreneurs. (E.g. social and structural - organizational, governmental, institutional etc. issues)
- ☐ What are some of the main challenges faced in establishing and operating your business?

3. Use of Digital Technologies by Female Entrepreneurs

- ☐ Describe your history (journey) and general experience in using digital technologies in your business operation. (Note the number of years, the types of digital tools used, as well as the nature and scope of the trajectory)
- ☐ Describe the aspects of your business operations in which digital technologies are utilized. What has been the impact in the respective areas?
- ☐ Was there a need for specialised training and/or additional investment to access and use these technologies in the business? Describe this and explain “why”?

4. Role of Digital Technologies in Female Entrepreneurship

- ☐ Explain how these technologies have contributed to improving/aggravating the constraints faced in the business (start-up and operation). Give some examples.
- ☐ Describe the aspects of your business that do not depend on or require the use of digital tools, architecture and platforms. Please give examples in your explanation.
- ☐ Tell me what policies are of importance to supporting female digital entrepreneurs in your country.

Appendix IV: Screen Shot of Excerpt from Master Matrix

A1		Descriptive Summary																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
		FE1 Rhiza	FE2 Lovely	FE3 Diana	FE4 Kimberlee	FE5 Rudelle	FE6 Arlene	FE7 Linda	FE8 Raquel	FE9 Nisha	FE10 Monica	FE11 Janet	FE12 Lynn	FE13 Susan	FE14 Astra	FE15 Kasha	FE16 Nicola	FE 17 Henrietta	FE18 Kandia	FE19 Nancy	FE20 Anna	FE21 Nathalia	FE22 Donna	FE23 Jenny	FE24 Sabby	FE25 Brandy	FE26 Sumitra
1	Descriptive Summary																										
26	Main operation type (online only)			P	P		P	P						P			P	P		P							
27	Demands for care giving and domestic responsibility			P							P				P				P			P					P
28	Family involved in business	P		P		P		P	P		P	P	P		P		P			P						P	P
29	Motivation for business (financial)					P																					
30	Motivation for business (passion to help others)			P	P		P		P										P		P	P		P		P	
31	Motivation for business (financial + passion)	P	P						P		P		P	P	P		P	P		P			P	P	P		P
32	Marital Status (single)		P			P	P	P		P		P				P										P	P
33	Marital status (married)	P			P				P					P	P		P	P	P		P						P
34	Marital status (separated/divorced)			P							P									P				P			P
35	Desire for pro-women enabling buiness environment			P	P	P				P		P		P		P	P									P	P
36	Traditional sectoral gender inequality and bias		P		P	P	P	P	P	P		P		P			P			P			P			P	P
37	Digital entrepreneurial environment																										
38	Existence of rivalry	P	P														P			P							P
39	Existence of sorority				P			P	P				P	P		P									P		P
40	Digital entrepreneur type (low)		P	P						P			P		P							P				P	
41	Digital entrepreneur type (medium)	P								P	P	P				P		P					P				
42	Digital entrepreneur type (high)				P		P		P					P			P			P							P
43	Experience using digital technologies in business (low)			P				P			P		P		P												
44	Experience using digital technologies in business (medium)	P	P							P		P				P	P	P		P			P	P	P	P	
45	Experience using digital technologies in business (high)			P	P	P	P		P					P													P
46	Outsourcing of digital processes	P			P				P					P	P	P							P			P	P
47	Online gender stereotypes		P		P							P		P			P	P		P						P	P
48	Desire for supportive digital business environment		P											P			P								P		
49	Demand for online business offering (product/service)	P	P	P	P	P	P		P	P		P		P		P	P	P	P	P		P	P	P		P	P
50	Scepticism about the online space	P			P		P	P			P			P			P								P		
51	Use & Impact of Digital Technologies																										
52	Linked digital identities via different platforms and tools	P							P	P	P			P										P		P	
53	Invest in digital technologies	P	P	P	P	P	P	P	P					P		P	P	P					P	P		P	P
54	Engage in Research and Development	P		P	P			P	P			P		P	P	P		P	P		P						
55	Ease for accessing/using finances (online banking)	P											P			P									P		
56	Mentoring Opportunities		P						P						P		P	P							P	P	
57	Networking & Collaborative Opportunities	P	P		P		P					P		P	P				P	P			P	P		P	
58	Capacity Building (structured training)				P			P				P			P	P							P	P		P	P
59	Capacity Building (self-taught)	P		P			P		P	P	P	P	P	P		P			P	P	P		P	P			P
60	Frequent changes in functionality of digital technologies		P								P									P							
61	Gender discrimination/sexism	n			n	n		n	n		n			n								n					
Phase 1 - Initial Categories		Phase 2 - Inductive Analysis										Sheet1															

Phase 1 - Initial Categories

Phase 2 - Inductive Analysis

Sheet1



Appendix V: Screen Shot of Initial Coding derived from Master Matrix

Action Log - Modification of Codes				
	A	B	C	D
1	Action Log - Modification of Codes			
2	Initial Codes	Action	Name of New Code	Explanatory Note
26	Operates in a competitive sector (high)	NC	Operates in a competitive sector (high)	No changes made to the code
27	Operates in a competitive sector (low)	NC	Operates in a competitive sector (low)	No changes made to the code
28	Main operation type (physical + online)	NC	Main operation type (physical + online)	No changes made to the code
29	Main operation type (online only)	NC	Main operation type (online only)	No changes made to the code
30	Demands for care giving and domestic responsibility	CC	Demands for care giving and domestic responsibility (high)	Better description. Initially was too generic
31		AC	Demands for care giving and domestic responsibility (low)	This code was added to capture differences in family structures
32	Family involved in business	NC	Motivation for business (financial)	No changes made to the code
33	Motivation for business (financial)	CC	Motivation for starting and operating the business (financial)	This code was modified to give a better description of the motivation for the business enterprise
34	Motivation for business (passion to help others)	CC	Motivation for starting and operating the business (passion to help others)	This code was modified to give a better description of the motivation for the business enterprise
35	Motivation for business (financial + passion)	CC	Motivation for starting and operating the business (financial + passion)	This code was modified to give a better description of the motivation for the business enterprise
36	Marital Status (single)	NC	Marital Status (single)	No changes made to the code
37	Marital status (married)	NC	Marital status (married)	No changes made to the code
38	Marital status (separted/divorced)	NC	Marital status (separted/divorced)	No changes made to the code
39	Desire for pro-women enabling buiness environment	NC	Desire for pro-women enabling buiness environment	No changes made to the code
40	Traditional sectoral gender inequality and bias	NC	Traditional sectoral gender inequality and bias	No changes made to the code
41				
42	Digital Entrepreneurial Environment			
43	Existence of rivalry	DC	n/a	No pattern developed. Code not needed
44	Existence of sorority	DC	n/a	Too speciific and narrowly described. Merged with collaborative experiences.
45	Digital entrepreneur type (low)	NC	Digital entrepreneur type (low)	No changes made to the code
46	Digital entrepreneur type (medium)	NC	Digital entrepreneur type (medium)	No changes made to the code
47	Digital entrepreneur type (high)	NC	Digital entrepreneur type (high)	No changes made to the code
48	Experience using digital technologies in business (low)	NC	Experience using digital technologies in business (low)	No changes made to the code
		NC	Experience using digital technologies in business (medium)	No changes made to the code

Phase 1 - Initial Categories

Phase 2 - Inductive Analysis

Sheet1



