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Contextual effects of technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations on entrepreneurial innovation: a study of SMEs in Kuwait

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Ph.D in Management

September 2023

Declaration of Authorship

I Meshal Alameeri hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed:  _____ Date: __15- September -2023__

Declaration of Funding

The Kuwait Public Authority of Applied Education funded this research but has not participated in or influenced the research process or findings in any way.

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DEDICATION

To my loving parents,

To my beloved Aunt,

To my beloved wife Dr. Mesa

To my precious children

To my mentor and father-in-law who passed away.

For all their love, patience and support during this PhD

ACKNOWLEDGEMENTS

First and foremost, I would like to thank Almighty Allah, whose grace and mercy gave me the courage, patience, persistence, and stamina to overcome the challenges to start my PhD and accomplish this research despite some difficult circumstances.

My sincere appreciation goes to my first supervisor, Dr. Robert Lee, for his invaluable guidance and dedicated mentoring during all research stages. Thank you for believing in me. Your supervision made this research such an amazing experience. Praise goes also to my second supervisor, Professor Paul Robson, for his enthusiastic supervision and his insightful comments and suggestions throughout the course of this research. I would like to express my gratitude to both my supervisors for their time and devotion to my work, constant support, and encouragement throughout the years. My greatest thanks go to my parents and my aunt their unconditional love, unending support, and prayers. I would like to thank my mentor and father-in-law, Professor Kamel, who passed away during my PhD journey for his mentorship and support helped carry on in life and education. Many thanks for my friends, Mohammad and Ahmad who supported me during this PhD.

Most profound thanks to the Public Authority of Applied Education for my scholarship and the National Fund for allowing me to access their National Registry database. My Special thanks go to Mr. Adel Alhassawi, Dr. Mohammad Hussain Jassim, and Abdulaziz Al Hazaa for their help during the data collection process.

I am incredibly grateful to my wife, Dr. Mesa, for her support and patience.

Abstract

Despite the increasing evidence in relation to context influencing entrepreneurship, there is a paucity of empirical research that comprehensively considers the effects of multiple contextual dimensions taken together in the entrepreneurial process, while very few studies focus on the specific contextual dimensions relevant to the Arabic, Gulf region. More specifically, contextual dimensions such as technological, entrepreneurial behavioral micro-foundations, social and subjective wellbeing could relate differently to entrepreneurial innovation with varying magnitudes of novelty. As for identifying entirely new contextual dimensions, then, drawing on recent subjective wellbeing and health research in the entrepreneurship literature could provide original and unknown insights. Accordingly, the *aim* of this research is to examine effects of multiple contextual dimensions of entrepreneurship, including technological, entrepreneurial behavioral micro-foundations, social and subjective wellbeing on Kuwait owner managers exploitative and exploratory innovation.

Data collection was conducted through a survey questionnaire. The survey was administered electronically by the National Fund (NF), a Government Institute which brings together policy makers and industry experts and provides funding for Small and Medium Enterprises (SMEs) in Kuwait. A comprehensive convenience sampling approach was adopted and the sample population represented owner managers of SMEs who are registered in the National Ledger. The survey resulted in 139 valid and useable responses, it can be said that this data can help facilitate useful insights into largely unknown relationships.

In the present study of Kuwait SMEs, I contribute exacting new light and findings on the idea that very specific combinations of contextual dimensions predict exploitative and exploratory innovation.

A *first* contribution relates to the key finding that exploratory innovation is strongly predicted by the combined positive effects of the contextual entrepreneurial micro-behavioral foundations of self-efficacy and proactiveness, and also, the technological context of intention to use technology. Although it seems important to note that the important subjective wellbeing context of negative affect-mood and micro-behavioral foundation of need for cognition seem to diminish exploratory innovation.

A *second* contribution concerns the key finding that exploitative innovation is strongly predicted by the combined positive effects of the contextual entrepreneurial micro-behavioral foundations of self-efficacy and proactiveness as well as the technological context of technology performance expectancy. The micro-behavioral foundation of need for cognition has a negative effect, this could impede exploitative innovation.

A *third* contribution relates to the key finding that identification that the context of exploratory and exploitative innovation differs. With respect to similar effects, crucial entrepreneurial micro-behavioral foundations relate to both exploration and exploitation in the same way, with self-efficacy and proactiveness exerting positive effects and need for cognition having a negative influence. Despite some similarities, the technology context of intention to use exerts positive effects on exploratory innovation, in contrast, it is performance expectancy that explains exploitative innovation. The fact that negative affect-mood appears to diminish exploration, but not exploitation, suggests an additional important variation.

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LIST OF ABBREVIATIONS

BI	Behavior intention
CMB	Common Method Bias
CMV	Common method variance
ESE	Entrepreneurial Self-efficacy
FBs	Financial barriers
FF	Fear of failure
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GNI	Gross National Income
ICT	Information and Communication Technology
IT	Information Technology
KBs	Knowledge barriers
MENA	Middle Easter and North Africa
NF	National Fund for Small and Medium businesses.
NFC	Need for Cognition
NR	National Registry
PACI	Public Authority for Civil Information
PANAS	Positive Affect and Negative Affect
PBC	behaviour and perceived behavioural control
PE	Performance Expectancy
QMI	Quality and Methodology Information

RA	Risk avoidance
SA	Stress avoidance
SME	Small and Medium Enterprises
TADU	Technology Adoption Decision and Use
TPB	Theory of Planned Behavior
UAE	United Arab of Emirates
UK	United Kingdom
USA	United States of America
VIF	variance inflation factors

Chapter.1 Introduction

1.1 Overview of Contextual Entrepreneurship

Contextualizing factors and relationships in the entrepreneurial process is an emerging, but growing area of research and scholarship (Autio et al, 2014; Chalmers and Shaw, 2015; Chlosta and Welter, 2017; De Bruin and Lewis, 2015; Patriotta and Siegel, 2019; Wadhvani et al., 2020; Welter, 2011; Zahra and Wright, 2011; Zahra et al, 2014). For Wigren-Kristofersen et al. (2019), entrepreneurship and innovation is a “fundamentally contextualized phenomenon” (p.1011). While Audretsch et al. (2021) recently say, “a narrow and one dimensional view of entrepreneurship not only restricts the analysis to certain theories and contexts but ultimately limits how entrepreneurship is understood” (p.1276). Accordingly, entrepreneurship should be contextualized because it will increase innovation and offer new perspectives on familiar and unfamiliar subjects in the field (Zahra, 2007). Indeed, Wigren-Kristofersen et al. (2019) stress, “entrepreneurship is a fundamentally contextualized phenomenon... and will unfold differently in different contexts” (p.1011). Audretsch et al. (2022) posit that entrepreneurial context could prove to be important for explaining innovative entrepreneurship.

Johns (2006) defines context as “situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables” (p.386). Importantly, researchers should realize that entrepreneurship occurs in various contexts and settings, and also, is influenced by combinations of contextual factors (Welter, 2011). Zahra et al. (2014) argue that context will advance entrepreneurship research to further the understanding of entrepreneurial activities and the challenges entrepreneurs face. In contrast, discrepancies are argued to be acknowledged through contextualization in viewing

entrepreneurs and their businesses and contextualization brings to light new perspectives about well-established entrepreneurship phenomena (Chlosta and Welter, 2017; Welter et al., 2019). The contextualization of entrepreneurship is argued to contribute to entrepreneurship knowledge by answering “when, how, and why” entrepreneurship happens (Welter, 2011, p.176).

Welter (2011) argues to contextualize entrepreneurship from the perspectives of two questions: where and when. Welter (2011) explains that the “where” question is composed of four dimensions: location entrepreneurship “happens in business” (Welter et al., 2019), social, spatial and institutional and “when” is composed of two dimensions: temporal and historical. However, Johns (2006) proposes analyzing the context from a journalistic point of view by answering “who, what, when, where, and why” (p.391). Jia et al. (2012, cited in Shirokova et al., 2022) define “how” as relationships, “why” as arguments and “what” as concepts. Henry and Lewis (2023) and Huang et al. (2020) explain that who, when and where refer to individuals, time or history, and location or local region respectively. Henry and Lewis (2023) add that these three factors are connected because each one of these factors influences the other one.

Further, Welter (2011) says that “conceptually, context is a multiplex phenomenon, which cuts across levels of analysis and influences entrepreneurship directly or indirectly, but which also is influenced by entrepreneurial activities” (p.176). Zahra et al. (2014) claim that contextualization can enhance and improve many theoretical stances and advance theoretical frameworks. They add that contextualization offers “researchers an important foundation to link their questions to the underlying but not easily observable cultural and historical foundations of the setting” (p.482). Scholars stress the importance of linking context to

research questions, observations and methods to theory building and empirical examination (Zahra and Wright, 2011; Rousseau and Fried, 2001).

Additionally, Welter (2011) urges entrepreneurship researchers to focus on the neglected characteristics of contexts, also known as “lens context”, such as social, spatial and institutional context. The author posits that entrepreneurship should be considered a phenomenon that depends on many contexts. Johns (2006) cites Rousseau and Fried (2001), who argue that contextualization links facts and observations. Rousseau and Fried (2001) add that this link can help researchers in hypothesis development, methodology, method choice and discussion. The entrepreneurship research field lacks comprehensive frameworks that account for contextual factors making it easier for researchers to integrate new contextual variables into their research (Autio et al, 2014; Zahra et al., 2014).

Generally, contextualization gives researchers insights about organizations’ origins, types, businesses and outcomes, including key entrepreneurial actions, but to understand these insights, the diversity of entrepreneurial behavioral foundations, technological and social contexts need to be the focus. Thus, contextualization allows researchers to delineate organizational microprocesses to better understand day-to-day entrepreneurial activities more comprehensively (Zahra et al., 2014; Autio et al., 2014). Research implements contextualization to explore variations among people, companies and research sites (Rousseau and Fried, 2001). Conversely, contextualization presents a problem, that of researcher’s assumption of context uniqueness, as Fletcher (2011) calls it “false objectivity” (p.69). Another challenge for contextualizing entrepreneurship research is that the actors and the processes are not static (Zahra and Wright, 2011).

Scholars have suggested dimensions for contextualizing entrepreneurship (Rousseau and Fried, 2001; Welter, 2011; Zahra et al., 2014). Zahra et al. (2014) recommend five dimensions: temporal, industry and market, spatial, social and ownership. In contrast, Welter (2011) recommends three contextual dimensions: social, spatial and institutional. Rousseau and Fried (2001, p.8) suggest four factors that affect organizational context: organizational factors, work-job factors, the external environment, and time. They explain organizational factors such as firm life cycle, firm structure, management turnover and financial health. Work-job factors are described as roles, performance criteria, career paths, demographics, and quality of relations with managers; external environmental factors are explained as economy, relative labor pool, location, legal/institution and nature-culture, and time factors are described as the dates the study was conducted and the relevant events contemporary with the study (Rousseau and Fried, 2001, p.8).

Zahra et al. (2014) explain the temporal dimension as the changes in entrepreneurship over time and the influence of historical events on opportunities and entrepreneurial actions. In comparison, industry and market dimensions are explained as the specific characteristics of each industry type. They define the spatial dimension as the influence of location, geography, culture and network on entrepreneurship. The social dimension that influences entrepreneurship outcomes is described as social norms' influence (social networks). Finally, organizational, ownership, and governance dimensions are explained as follows: organizational factors are explained as firm size; ownership factors are elucidated as ownership types; and governance factors are described as governance mechanisms such as boards' and investors' influence on entrepreneurship. Patriotta and Siegel (2019) posit that "Institutions shape the context of entrepreneurship by providing not only resources and logics of action, but

also a ‘cultural stock of stories’ or cultural accounts that facilitate organizational identity formation and justify action in particular relational spaces” (p.1195). Welter and Xheneti (2013) explain that social context is referred to as social network approaches, including social relationships, and spatial context is described as the geographic and physical location. Lastly, institutional context is explained as government regulations and norms, and attitudes of societies.

Moreover, perhaps most comprehensively, Autio et al. (2014) suggest a framework delineating various contextual dimensions that constitute entrepreneurship and positively influence innovation and performance, including industry, technological, entrepreneurial behavioral microfoundations, social relations and organizational that occur across time and space. Conversely, Welter and Xheneti (2013) argue that entrepreneurial behavior is influenced by contexts whereas contexts are influenced by entrepreneurial behavior. This argument is also supported by Zahra et al. (2014) and Johns (2006). Accordingly, Autio et al. (2014) argue that the effects of behavior should be differentiated. Additionally, Arshi and Burns (2018) recommend that researchers focus on specific assessments for exploratory and exploitative innovation.

1.2 Research Agenda and Gaps in Knowledge

Recently, scholars call for more comprehensive contextual entrepreneurship research (Audretsch et al., 2021; Audretsch et al., 2022; Autio et al., 2014; Welter et al., 2019). Welter et al. (2019) argue that entrepreneurs are not alike. They criticize entrepreneurship research because it assumes entrepreneurship happens only in the western context and the notion of looking at entrepreneurship as “high-growth, technology- driven, and venture capital-backed” (p.320). Su et al. (2015) suggest that contextual dimensions can differ according to different

regions. Also, Shirokova et al. (2022) add that “the use of theories developed in the context of advanced market economies (predominantly United States and Western Europe) often lacks accuracy or explanatory power with regard to entrepreneurial phenomena unfolding elsewhere (Filatotchev et al., 2021)” (p.2). For example, in an emerging economy like China, entrepreneurship is continuously evolving and thus this creates a need for new entrepreneurship regional and country contexts (Huang et al., 2020).

Thomas and Mueller (2000) suggest that the study of entrepreneurship should be extended to different countries and regions (Fritsch and Storey, 2014), as emerging economies, in particular, Gulf countries have different characteristics to developed economies (Abu Bakar et al., 2017; Bruton et al., 2008). Bruton et al. (2008) argue that exploring entrepreneurship in emerging economies will help entrepreneurship researchers revise and extend existing theories considering new context variables, and as a result, “this in turn enables researchers to fine-tune theories by developing context-specific conditions and operationalization of key construct” (p.12). Shirokova et al., (2022) argue that “context-specific research strives to derive new theories of local phenomena in a specific context” (p.4). Additionally, Zahra and Wright (2011) claim that “National cultures and institutions shape people’s reactions to corruption, a key obstacle to entrepreneurship in some economies” (p.73).

Shepherd et al. (2019) suggest that future contextual research should answer: “How do individuals and institutions coevolve in contexts that generate or deny innovation?” (p.180). Autio et al. (2014) raise the questions of “where and when” entrepreneurs innovate and ‘what’ contextual factors influence multiple types of innovation. (p.1098). They claim that the relationship between entrepreneurial innovation and the different contexts which produce innovative actions is not clear and the answer to these questions lies in the influence of context

on innovative activity by entrepreneurs. They add that “the question of contextual influences on entrepreneurial innovation has received surprisingly little attention” (p.1098). According to Arshi and Burns (2018), “It may also be of interest to researchers to investigate specific entrepreneurship measures focused separately for incremental and radical innovations” (p.171).

Zahra and Wright (2011) suggest that more research is required in considering the diversity of contexts in which entrepreneurial innovation occurs. They argue that researchers use context as statistical controls rather than directly testing combinations of contextual dimensions, “this replication and extension research fails to challenge, however, taken-for-granted assumptions about entrepreneurship and entrepreneurs, making it difficult to engage in path-breaking (consensus-changing) research” (p.68). Scholars recommend discussing entrepreneurship from multiple contextual perspectives, not from individual contextual perspectives in isolation (Welter and Gartner, 2016, cited in Welter et al., 2019).

Contextual entrepreneurship studies are argued to be very limited and focused on single components of context (Henry and Lewis, 2023) such as Dencker et al. (2021), Lehmann et al. (2021), Audretsch et al. (2022) and Audretsch et al. (2021). Additionally, entrepreneurship studies focus too much on organisational and social dimensions more than the other dimensions (Welter et al., 2019). Henry and Lewis (2023) argue that “a researcher exploring an unfamiliar context may be more open to the various (previously unnoticed) dimensions that influence the phenomenon under investigation rather than have any preconceived ideas. This could, potentially, allow for a more accurate and balanced interpretation of research findings” (p.2). However, one criticism of the current contextual entrepreneurship research is that the theories

and methods used lack accuracy and distinctness about explaining their outcome relationship and interactions (Cortina et al., 2022).

Zahra and Wright (2011) claim that “engaging the context in future research can also improve our appreciation of the microfoundations of entrepreneurship: individual cognitions, attitudes, beliefs, motivations, and behaviors that create and influence macro structures” (p.74).

In this way, Audretsch et al. (2022) explain that “the cognitive context describes how a (potential) entrepreneur perceives his/her environment and associated entrepreneurial opportunities” (p.3). Renko et al. (2021) suggest that in-depth cognition context research is needed to understand entrepreneurship globally. Wright and Stigliani (2012) argue that more research is needed to shed light on the different cognitive structures and behaviours during uncertain environments and claim that “research on entrepreneurial cognition has failed to develop an understanding of entrepreneur cognitive processes and the interactions between mind, environment and entrepreneurial action” (p.8). Pan et al. (2021) encourages researchers to explore the relationship between need for cognition and exploratory and exploitative creativity.

Technology is another influential entrepreneurial contextual dimension and fosters entrepreneurial innovation (Audretsch et al., 2022). Although Moghavvemi et al. (2017) suggest investigating technology adoption in different contexts and cultures. In addition, Ngoasong (2018) argues that studying the influence of context on technology adoption can shed light on the situation and the chance of discovering, creating, and exploiting entrepreneurial innovations-especially, in emerging country contexts.

Social relations and network conduits are crucial contextual factors in the entrepreneurial process and underline access to important resources (Welter, 2011; Wright and

Stigliani, 2012), though, a better knowledge of their importance for innovation when considered alongside multiple contextual dimensions is needed (Morales et al, 2019; Welter et al, 2019). The importance of accessing information to exploit or explore innovation (March, 1996, cited in Kollmann and Stöckmann, 2010; Cai et al., 2021) influences the adoption of the social network relationship context. Welter (2011) argues that social context may have contradictory effects on entrepreneurship, claiming that research on social context and entrepreneurship has mainly focused on the positive effects. However, *wasta* is claimed to aid in the accessibility of new ideas and insights hindering entrepreneurs' innovation who have no access to *wasta* (AlHussainan et al., 2022; Audretsch et al., 2022). *Wasta* is compared to China's *guanxi* that have been contextualized as a social context in Chinese entrepreneurial research (Huang et al., 2020). Leyden et al. (2014) posit that entrepreneurs innovate within the context of uncertainty, and that a major success factor for them is exploiting networks.

To address new and untested dimensions, Stephan (2018) argues that mental wellbeing differs across various countries and recommended investigating these differences. Following Zahra and Wright (2011) and Welter (2011), Stephan (2018) recommends the contextualization of mental wellbeing. Accordingly, this research adopts Pathak's (2021) and Diener and Ryan's (2009) definitions of subjective wellbeing as a context for testing innovation.

Williamson et al. (2019) claim that entrepreneurial outcomes are influenced by negative affect-mood and positive affect-mood. Notably, anger as a high-activation negative emotion motivates and energizes an individual to solve problems and to be determined to succeed (Russell, 2003, cited in Williamson et al., 2019; Warr et al., 2014, as cited in

Williamson et al., 2022), whereas sadness as a low-activation emotions does the opposite of anger to an individual.

Wiklund et al. (2018) call for more research investigating this relationship. Entrepreneurs' affect experiences can be enhanced or be limited by context thus Williamson et al. (2022) call for researchers to study negative emotions in different contexts and to understand how entrepreneurs succeed in unpleasant environments. Moreover, according to Pathak (2021) researchers are recommended to investigate the role of affect in influencing entrepreneurship. Williamson et al., (2022) suggest that researchers should investigate a different range of entrepreneurs not including western entrepreneurs and "context-specific affect-driven research holds great promise for moving the field forward and for conducting research with impact" (p.28). Relatedly, Shepherd et al. (2019) call for more research focusing on "entrepreneur's psychological outcomes" (p.181).

Consequently, as recommended by Autio et al (2014), Welter (2011) and Zahra et al. (2014) and Autio et al. (2014), the research adopts a theory driven approach to contextualizing entrepreneurship research and embraces the challenge of illuminating the multiplicity and combinations of contextual dimensions that influence different types of innovation outcomes in a specific emerging country-namely, Kuwait. Moreover, four crucial contextual dimensions of entrepreneurship are adopted in an integrative manner: technology adoption; entrepreneurial behavioral microfoundations; social relations; and subjective well-being. Further, this study adopted Kollmann and Stöckmann's (2014) exploitative and exploratory innovation as the outcomes.

1.3 Research Aim and Questions

To address the gaps identified and contribute a better understanding of entrepreneurial innovation and context, the *overall aim* of this research is to examine effects of multiple contextual dimensions of entrepreneurship, including entrepreneurial behavioral micro-foundations, technological, social and subjective wellbeing on Kuwait owner managers exploitative and exploratory innovation. More specifically, the study intends to address the following *three research questions* and contribute exacting findings:

- (1) *What are the effects of technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations on exploratory innovation in the context of SMEs in Kuwait?*
- (2) *What are the effects of technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations on exploitative innovation in the context of SMEs in Kuwait?*
- (3) *Do combined effects of technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations differ between exploratory and exploitative innovation in the context of SMEs in Kuwait?*

1.4 Kuwait Economy, Entrepreneurship Profile and National Fund

Kuwait is classified by the World Bank as a high-income Middle Eastern economy in the Gulf region along with Saudi Arabia, Oman, Qatar and the UAE, and also, is the ninth-largest crude oil producer in the world (Serajuddin, and Hamadeh, 2020; Zainal *et al.*, 2022). According to the World Bank (2023) Kuwait's population of Kuwaiti nationals is approximately 4.2 million and 21% is under 15 years old and 5% is over 64 years old. That said, Kuwait is the only member of the Gulf Cooperation Council (GCC) dependent on oil

revenues, but lately, this dependence on oil has become a concern after the decrease in demand for oil, the fluctuation of oil prices, and the substantial public wage bill costs (OECD, 2021; NCSD, 2023). Oil and gas account for 92% of the country's exports (OPEC, 2020). In addition, Olver-Ellis (2020) indicates that 76% of Kuwaiti citizens work in the public sector. In the 2018-2019 budget, the public wage bill accounted for 54% of the budget (KUNA.,2018). The country is paying high wages to public sector workers, with short working hours (Atkins, 2020; Dudley, 2021; Helal, 2020; Radwan and Malik, 2021).

Entrepreneurship and enterprise are vital for all global economies: however, Kuwait's Small and Medium-Sized Enterprises (SMEs) contribute only 3% of the country's GDP compared to that of the UAE's 40%-60% (Zainal *et al.*, 2022; World Bank, 2016; IMF, 2020). Also, the Global Entrepreneurship Monitor GEM (2021) indicates that the 2020 COVID-19 pandemic negatively affected 54% of Kuwait adults' (18-64 years old) income and perceptions of entrepreneurship and business start-up across age groups. Zainal *et al.* (2022) suggest that most SMEs in Kuwait were hit hard due to the pandemic restrictions and closures. In particular, the GEM (2021) indicates that SMEs in Kuwait have struggled with the payment of salaries and costs, while 50.9% of their sample knows at least one entrepreneur who closed or stopped owning a business due to the 2020 pandemic. Kuwait's government response to the COVID pandemic was not anticipated positively by the private sector, and the GEM (2021, p.32-33) adds that "the private sector has reservations about the government's response to the economic consequences of the COVID-19 pandemic" and "national experts' ratings of the governmental response to the economic impacts of the pandemic, scored as insufficient". Thus, the perception of entrepreneurship in this period is largely negative.

Despite economic challenges and the pandemic, the GEM (2021) indicates that Kuwait's total early-stage Entrepreneurial Activity (TEA) rate recorded the highest rate increase among other GCC economies. For example, Kuwait's TEA rate is 19.2%, while Qatar and Saudi Arabia recorded 17.2% and 17.3%, respectively (GEM, 2021). On a very positive note, Kuwait has a relatively high proportion “of adults who are intending to start a business in the next three years” (OECD., 2021, p.33). Additionally, according to the World Bank (2019), Kuwait's ranking for the ease of doing business improved from 97 in 2019 to 83 in 2020. This jump results from recent business regulatory reform agenda implemented by the government and policymakers (KPMG, 2020). More importantly, the Global Entrepreneurship Monitor GEM (2021) posits that Kuwait has a favorable ecosystem for starting a business.

To further facilitate an entrepreneurial ecosystem and increase rates of private enterprise, national policymakers launched an ambitious socio-economic plan and manifesto called the Kuwait Vision 2035 that targets economic diversification, productivity growth, human and social capital development and private enterprise (New Kuwait, 2022; OECD, 2021; World Bank, 2016, 2021). Prior to this, the Kuwaiti government started supporting SMEs by reducing the licensing times and fees, as well as establishing the National Fund (NF) in April 2013 (Oliver-Ellis, 2020). As such, the government of Kuwait and law makers (the parliament) established the NF as an initiative to help enterprises grow, scale-up and add value to the private sector and society. The fund was established as an independent public corporation and entity (National Fund, 2021). According to the World Bank (2016), it helped the Fund set up a number of support initiatives such as the creation of: a one stop shop for business creation and development; business training, networking and online facilities and spaces; and data collection, monitoring and evaluation systems.

The NF was allocated 2 billion Kuwaiti Dinars (almost US\$ 3 Billion) and targets the small and medium businesses sector. The NF will finance businesses with 80% of their startup capital but for a maximum total cost of 500,000 KWD each. For example, for a small business that requires 100,000 KWD to start, the National Fund will grant the owner an 80,000 KWD loan. The business owner must provide a feasibility study of a three-to-five-year period for sales/production forecasting and projection and prove the cost of building the business (National Fund, 2021).

The definition and characteristics of SMEs are different in Kuwait than in other countries. According to Ministry Law no. 51 for 2018, the small business is defined as a business with no more than 50 employees, with an assets valuation of no more than 250,000 KWD (equivalent to US\$ 830,000) and income of less than 750,000 KWD (equivalent to US\$ 2.5m). A medium business is defined as a business that employs between 51 and 150 employees, assets valuation between 250,001 and 500,000 KWD (equivalent to 1.67m KWD) and annual income of no more than 1,500,000 KWD (equivalent to US\$ 1.5m).

The government has set a general framework definition for SMEs. The business owner must be a Kuwaiti national of at least 21 years of age. The business should be independently owned and if there were other commercial or legal ownership in this business, the assets, employees and the revenue will be consolidated as one business. The Kuwaiti government has set laws and guidelines that defined and organized the small and medium businesses in general and for the NF (National Fund, 2021). The business owner who applied for funding through the NF and works in the public sector can be granted three years leave to start a business, something similar to sabbatical leave in academia.

In 2018, the NF launched the National Registry for small and medium businesses. The National Registry is a collective database for local small and medium enterprises. The database is not only open for businesses that acquired funding from the NF but also for all businesses that meet the definition of small or medium business according to the law. Businesses registered in the database are given a certificate from the National Fund in order to help them in getting projects or services from government entities (Alsinary, 2018).

Reassuringly, the launching of the dedicated National Fund (NF) for SMEs and Kuwait Vision 2035 bodes well for the future of Kuwait (National Fund, 2021; New Kuwait, 2022). For the GEM (2021: p9), “It was noted that a number of new and growing firms adopted new ways of doing business and that the pandemic gave rise to new opportunities for entrepreneurs”. In contrast, according to the OECD (2021), Kuwait's innovation performance is unsatisfactory. Thus, understanding, promoting and supporting innovation by Kuwaiti enterprises is needed.

In the case of this research, a sample and data are drawn from the National Fund (NF) to evaluate the contextual factors that influence the innovation of SMEs. This is in line with previous well-established scholarship that used national level data to test factors influencing entrepreneurship (Dahl and Sorenson, 2009; Zhang and Wong, 2008; Murphy et al., 2016).

1.5 Remainder of the structure of the thesis

The research starts with the Introduction, Chapter 1. Chapter 2 presents the systematic literature review of entrepreneurship in Kuwait. Chapter 3 presents the theoretical framework and hypotheses pertaining to entrepreneurial innovation and contextual dimensions. Chapter 4 is the methodology chapter and presents the philosophy, research design, research method, operationalization of variables and response analysis. Chapter 5 presents the data exploration

and analysis. Regression analysis and results are presented in Chapter 6. Chapter 7 represents the discussion and contributions. Lastly, Chapter 8 presents the Conclusion chapter.

1.6 Conclusion

This chapter refers to the research background and introduction. The first section presents the overview of contextual entrepreneurship in the literature. The second section presents the knowledge gaps and research agenda. The subsequent sections present the research questions and importance of the Kuwait research context.

Chapter.2 Entrepreneurship and the Gulf, Middle Eastern and Arabic Geographic

Region

2.1 Introduction

This chapter represents a systematic literature review pertaining to the state of entrepreneurship research in the MENA/Arab regions and the Gulf Cooperation Council countries (GCC). The MENA/Arab region refers to the Middle East and North Africa Arabic speaking countries including Egypt, Morocco, Algeria, Tunisia, Libya, Lebanon, Syria and Jordan (Global Entrepreneurship Monitor, 2017). The GCC countries comprise Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and the UAE (Hvidt, 2013). By systematically reviewing entrepreneurship research in the GCC countries, with particular emphasis on Kuwait and Arab/MENA regions – a comprehensive account and review of highly relevant and contextual entrepreneurship research is provided.

The systematic review method is adopted, and search strings and database searches are employed to minimize bias and more exhaustively review the current literature (Macpherson and Holt, 2007; Pittaway et al, 2014; Thorpe et al., 2005; Tranfield et al., 2003; Denyer and Tranfield, 2009). Also, a systematic review better enables the identification of current knowledge gaps and the development of a more precise theoretical framework related to the Kuwait entrepreneurial context. The chapter begins by defining the systematic literature review method and outlining review stages' protocols. Furthermore, the systematic literature review is divided into three sub sections: planning the review, conducting the review, and reporting the review.

The planning review sub-section explains the aim and goals of the literature review search. The conducting review subsection addresses implementing the search plan to search

for relevant literature. The conducting process represents where the literature search is conducted. The last subsection refers to the reporting process. The reporting process presents and reviews the literature patterns and trends identified in the conducting process.

The reporting process sub-section consists of six sections. The structure of the reporting process subsection is organized as follows: student entrepreneurship and entrepreneurship in higher education/graduate entrepreneurship; technological, scientific and academic entrepreneurship; gender and religiosity; institutional entrepreneurship; networks, psychological and cognitive factors; and patterns and trends of entrepreneurship in different MENA/Arab and GCC countries. The findings of the review confirm that there is limited entrepreneurship research in the Gulf and the Arab region. Moreover, there is a paucity of entrepreneurial scholarship pertaining to Kuwait.

2.2 Definitions of entrepreneurship

Entrepreneurs and entrepreneurship have been the focus of many of the developed countries such as the USA, the UK, Germany, and France. These countries have understood the value that entrepreneurship and entrepreneurs are adding and will be adding in the future. Entrepreneurs and entrepreneurship can add value for the economy and the society. Developed countries are the major entrepreneurial countries. Such countries have one major common economic objective: that is to create and maintain job opportunities. Jobs are created through two sources: public sector (government) and private sector. The challenge is to sustain and to create new jobs. Most of these countries promote entrepreneurs and entrepreneurship in order to achieve this objective. Entrepreneurs not only create jobs through their ventures, but they also create new markets. According to

Thomas (1987), Schumpeter, the notable economist who defined an entrepreneur in 1939, recognized the entrepreneur as innovator.

Mthanti and Ojah (2017) indicated that Schumpeter entrepreneurship activity is distinct from small business activity. Mthanti and Ojah (2017) added that small business owners do not bring new innovation and do not create new markets. These small business owners simply offer existing goods/services to a mature market. Mthanti and Ojah (2017) argued that small business owners will not drive economic growth.

Mayer et al. (2018) discussed Simon Parker's (2018) work on entrepreneurship economic theory. Parker (2018) argued that economic theories of entrepreneurship originated from three fields of economics: labor economics, microeconomic theories of entrepreneurship and macroeconomic theories of innovation, economic growth, and business cycles. The authors agreed that entrepreneurship influences the economy's growth and jobs creation. In the same context, the authors argued that the job quality the entrepreneurs create is low, however, they create a positive effect on the economy in terms of number of jobs. On the other hand, Birch (1979) proved that there is no correlation between small businesses and job creation. Block, Fisch and Van Praag (2017) argued that young firms are responsible for job creation, not small businesses. In the same context, Shane (2009) mentioned that small businesses do not employ personnel and earn a low income. So, these small businesses will not contribute to economic growth and job creation.

Entrepreneurs and entrepreneurship can affect the economy and the society. Both can influence the society to be more productive and promote work. Entrepreneurship can create jobs, while some argue that the job quality is not high (Mayer et al., 2018.) According to the Department for Business, Energy & Industrial Strategy, the total employment in SMEs in 2018

was over 16 million which accounted for 60% of all private sector employment in the UK (GOV.UK, 2019).

Scholars have widely defined entrepreneurship, entrepreneurial activity, entrepreneurial opportunities and entrepreneurs. The Organization for Economic Co-operation and Development, OECD (2017), defines entrepreneurship as “enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.” Shane and Venkataraman (2000) defined entrepreneurs as individuals who discover, evaluate, and exploit profitable opportunities. Cantillon (1931), Baudeau (1910), Von Mises (1949,1952), Kirzner (1974) and Schumpeter (1934, 1950) all agreed that an entrepreneur is a person who creates new markets and takes risks. Mayer et al. (2018) argued that entrepreneurial activity can be measured through the number of start-ups, self-employment rates and small and medium-sized enterprises (SMEs). They added that an entrepreneur will create and discover new opportunities that may or may not exist.

Henry Ford, founder of Ford Motors, Thomas Edison, founder of General Electric, Sam Walton, founder of Walmart, Sir James Dyson, founder and inventor of Dyson, Cher Wang, founder of HTC, Sara Blakely, founder of Spanx and Sir Richard Branson, founder of Virgin are entrepreneurs that changed and improved our lives. Some of them are inventors and some of them are not, but they are all innovators.

Entrepreneurship is not only about business, but also about creating value. Johann Amos Comenius invented the textbook to standardize the quality of teaching for the Czech education system (Drucker 1985). The quality of teaching can be affected by the teacher's

teaching skills, number of students and material used. So, Comenius invented the textbook to allow teachers to teach any number of students and to level the teaching quality for all teachers.

Entrepreneurship needs an entrepreneurial climate to prosper. An entrepreneurial climate needs policies and practices. Block, Fisch and Van Praag (2017) noted the policies that promote entrepreneurship are education, access to finance, business transfer facilities, lowering the fear of failure and eliminating government bureaucracy to start businesses.

Yet for all the emphasis and talk of entrepreneurs and entrepreneurship, there is disagreement about what the term actually means. Moreover, there is considerable discussion about the role that entrepreneurs, and entrepreneurship, play in the economy. Schools of thought have been developed, debated, and adapted by scholars. Scholars of different schools of thought, who defined entrepreneurship and entrepreneurs, are discussed below:

Scholar	Definition of Entrepreneur
Cantillon	A specialist in taking risk.
Weber	A person who is driven by a protestant work ethic to bear uncertain income.
Schumpeter	The Entrepreneur disrupts the market equilibrium by innovation.
Kirzner	The entrepreneur brings equilibrium to the market by his/her alertness to an opportunity.
Knight	Entrepreneurs bet on uncertainty.

Shane and Venkataraman	Entrepreneurs are defined as the ones who discover entrepreneurial opportunities.
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Cantillon

According to the Encyclopaedia Britannica, Richard Cantillon is an Irish economist and banker. Cantillon was born in the late seventeenth century and was writing primarily in the early eighteenth century, and put forth an economic theory related to population and geography, as well as to economic theory as a whole. Cantillon’s most famous book is “Essai sur la nature du commerce en general.” He was the first to present the term entrepreneur. He defined an entrepreneur as “an agent who contracts with suppliers at known prices in order to produce goods that could be sold later at uncertain prices” (Ricketts, 2008, p.40). Cantillon argued that the entrepreneur should be considered as an arbitrageur or speculator who bears risk by buying and selling goods (Parker, 2018). He used the term “entrepreneur” before John Baptiste Say, although Say is typically credited with its first use (Brown and Thornton, 2013). He was one of the first scholars to discuss the entrepreneurial function (van Praag, 1999). Cantillon’s seminal work was published after his death and did not receive the same attention as other well-known economic theories which came more than a century later, including those of Adam Smith and Karl Marx. Nonetheless, Cantillon’s economic model depends on the role of the entrepreneur as he saw it (Brown and Thornton, 2013).

Cantillon defined entrepreneurs as one of three agents in his economic system. These agents are landowners, entrepreneurs and wage workers (van Praag, 1999; Heertje, 2005). These entrepreneurs are not innovators and can’t affect supply and demand of goods, but they are smart and are risk takers (Parker, 2018). Cantillon added that the entrepreneur differs from the other two agents in that he/she will bear risk and uncertainty. This risk bearing and

uncertainty according to Cantillon will yield a different sort of income. The entrepreneur's income is uncertain and none-contractual while the landowners' and workers' income are fixed by contractual agreement (Van Praag, 1999). Cantillon's entrepreneurs not only engage in trading, but also other professions such as banking and farming (Heertje, 2005). Cantillon argued that the market in his economic system is self-regulated. A self-regulated market means that there is no intervention from the state "government" between the trading parties (van Praag, 1999; Heertje, 2005). The entrepreneur in Cantillon's economic system plays a critical role and is responsible for the exchange and circulation of the economic means (Van Praag, 1999). Cantillon saw the landowners as the only decision makers in his economic system. Thus, the landowner communicates his/her decision to the workers through the entrepreneurs (Murphy and Murphy, 1986).

In addition, the landowner is taking a risk that they will be able to sell their product at a profit. This led to the development of villages in which those who worked the land needed to live close to the land they worked, or the time spent traveling would be inefficient, and they would seek closer opportunities. This need to be close to the land being worked led to the development of villages, comprising workers, artisans, and landowners (Brown and Thornton, 2013). Landowners and workers may bear risks, but the entrepreneurs bear more risk than them because both landowners and workers have a fixed contractual income (Heertje, 2005). For example, landowners not only determine what they will plant, but those decisions lead to additional economic outcomes, including transportation and distribution of goods. Landowners will be able to price their costs and lower their risk then transfer the risk and uncertainty to the entrepreneurs. This, in turn, gives rise to market towns, as entrepreneurs gather to buy goods (including raw materials) and sell goods locally, and buy goods to sell in

more remote locations. As more entrepreneurs gather to exchange goods, services emerge, including financial services, and the towns and cities eventually emerge. Thus, Cantillon's entrepreneur drives the entire economic system through their willingness to assume risk and the decisions that flow from that decision making (Brown and Thornton, 2013).

Schumpeter

According to the Encyclopaedia Britannica, Joseph Schumpeter is an Austrian economist who was born in the Czech Republic. Schumpeter wrote one of the most important books for entrepreneurship: "The Theory of Economic Development" (Bazhal, 2016). In this book, Schumpeter defined the entrepreneur and his/her contribution to the economy. Schumpeter's main contribution to entrepreneurship is establishing the entrepreneurs' innovative activity as creative destruction (Wong et al., 2005). Schumpeter put forth innovation and leadership as key attributes of entrepreneurs; this is a view that continues to persist today and which was in contrast to Weber's religious-based view of entrepreneurship (MacDonald, 1965). For Schumpeter, entrepreneurs only undertake those ventures which will succeed, and their leadership abilities carry others along who help realize the vision. Because change is difficult to introduce entrepreneurs are often viewed with skepticism by others in their community, and the entrepreneurs themselves must be willing to overcome self-doubt that prevents many individuals from daring to shift away from society's norms, even in an economic endeavour (Schumpeter, 1934). In Schumpeter's view of entrepreneurship, individuals who are willing to challenge existing norms are able to discern opportunities that elude more traditional thinkers. These entrepreneurs are able to inspire others to follow them and thus attract workers willing to break the circular flow of an economy by entering previously unknown areas. Financial support comes from wise bankers who are able to identify

these entrepreneurs and provide the funding necessary to support their undertakings (Schumpeter, 1934). Schumpeter views an entrepreneur as an innovator not a manager. He argues that an entrepreneur need not be an inventor (Fogel et al., 2009). But Schumpeter also considers the entrepreneur as a leader (Chell and Karatas-Özkan, 2014). Schumpeter insists that the entrepreneur is special kind of leader who is not an imitator: “Lead the means of production into new channels” (Schumpeter, 1934, p.89). Schumpeter argues that the entrepreneur leads a firm and innovates in this firm; as a result the entrepreneur is the main force to help move the economic system (Van Praag, 1999). Schumpeter adds that the entrepreneur is also driven by personal motivation (Ebner, 2003, p.207). Schumpeter argues that the entrepreneur’s motives are to find his own kingdom, to prove his lead among others, to enjoy success and to enjoy achieving goals: “the dream and the will to found a private kingdom, usually, though not necessarily, a dynasty” (Schumpeter, 1934, p.93).

Schumpeter defines an entrepreneur as the one who carries one of five “new combinations” (Schumpeter, 1934, p.66). Someone to be considered a Schumpeterian entrepreneur should develop a new product, should create or introduce a new way of production, should create a new market, should find/create a new source of supply and should possess a monopolistic position (Schumpeter, 1934). So, the entrepreneur according to Schumpeter is someone who develops a new kind of business that produces or develops new products to replace old products. This process of replacing old products with new products is what Schumpeter called “creative destruction.” As a result, Schumpeter insists that without innovation there are no entrepreneurs (Schumpeter, 1939).

The concept of circular flow is central to Schumpeter’s theories of entrepreneurship. This is used to describe a static economy in which the same processes take place repeatedly.

Prices and quantities remain stable, the interest rate is zero and there are no net investments. When an entrepreneur comes on the scene, there is disruption to this circular flow (Hagedoorn, 1996). New outputs are introduced which serve as new inputs to other activities. Productivity increases occur as entrepreneurial organizations enter the economy and bring disruptive innovation to the production process. Older, more conventional organizations are reluctant to change; this gives the entrepreneurial organization the opportunity needed to establish itself and gain market share. This ‘creative disruption,’ as Schumpeter called it, can cause failure of more established and apparently better funded organizations that are not able to anticipate or even react to the presence of the entrepreneurial disruptor (Schumpeter, 1934).

Schumpeter’s entrepreneur may share a similar work ethic to that of Weber’s entrepreneur, but it is not a work ethic that comes from an austere religious basis. Instead, it is hard work that comes from the creativity that the work brings and the rewards that follow. Schumpeter’s entrepreneur is very much a person who is involved in and part of the community, and who works for the intrinsic reward that creativity and innovation bring as well as the extrinsic reward of profit (Schumpeter, 1934). Nonetheless Schumpeter argues that the entrepreneur does not bear risk and should not be considered as a capitalist (Van Praag, 1999). Kirzner described Schumpeter’s entrepreneur by saying that he or she “acts to disturb an existing equilibrium situation” (Kirzner, 1973, p.72).

Weber

Max Weber is considered one of the most famous German economists and sociologists (Weber, 2017). Weber was the editor of “Archiv fuer Sozialwissenschaft und Sozialpolitik” (“Archives for Social Science and Social Welfare”) at the same time as Schumpeter was writing for the same journal (Brouwer, 2002). Weber’s seminal book is entitled: “Protestant

Ethic and the Spirit of Capitalism”. The book was one of the most influential works for the rise of entrepreneurial capitalism in the 16th and 17th centuries (Ruef and Lounsbury, 2007). The book was translated and published in 1930 by Talcott Parsons (Brouwer, 2002). Kininmonth (2016) argues that the main reason Weber wrote the book was to understand what made capitalism flourish among Protestants in specific countries since the Reformation. In the book Weber argues that the Protestant ethics drove the believers to become entrepreneurs. He also mentioned that in the USA, Benjamin Franklin’s country, “It is further undoubted that capitalism remained far less developed in some of the neighbouring colonies, the later Southern States of the United States of America, in spite of the fact that, these latter were founded by large capitalists for business motives, while the New England colonies were Founded by preachers” (Weber et al., 1930, p.55).

Max Weber suggested that the entrepreneur served as a counterbalance to bureaucrats. Where bureaucrats were satisfied with the status quo, entrepreneurs were the moving spirit of an enterprise. He mentioned, “A man does not ‘by nature’ wish to earn more and more money, but simply to live as he is accustomed to live and to earn as much as is necessary for that purpose” (Weber et al., 1930, p.60). Entrepreneurs seek a profit higher than the prevailing rate of interest and use their creativity and hard work ethic to bring about a shift in the direction of commerce to realize that profit. Weber stressed that the protestant work ethics are the main encourager of entrepreneurship (Basu, 2009). Bureaucrats are not so motivated and lack the positive energy and approach to the commercial enterprise necessary to move the organization forward. Weber said that “Capitalism cannot make use of the labour of those who practise the doctrine of undisciplined liberum arbitrium” (Weber et al., 1930, p.57). It is not creativity or imagination that Weber emphasizes, but rather the ability to direct the work within the

organization in ways that bureaucrats cannot. His focus is not necessarily on individual entrepreneurs, but on capitalist organizations directed by entrepreneurs rather than bureaucrats (Swedberg and Agevall, 2005).

The difference between Max Weber's and Schumpeter's entrepreneurs is that the first was focusing on societal values and not on the entrepreneurial motivations, whereas Schumpeter was interested in the entrepreneurs' motivations (Basu, 2009). Schumpeter refuted Weber's work and argued that innovation, not the protestant work ethic, encourages entrepreneurship (Brouwer, 2002).

Weber was a social scientist as well as a product of his place and time. Living in Germany, Weber saw the success of Western European countries such as Germany and England and equated that success with capitalism and entrepreneurs leading the commercial entities within Western Europe. He determined that Protestantism was key to the success of these countries, compared not only with Catholicism, but more specifically with Islam, Buddhism and especially Hinduism. Weber felt that religions that did not emphasize that individuality could not produce entrepreneurs and thus would remain less competitive and less economically developed. Protestantism was uniquely suited to building wealth emphasizing hard work and achieving success through frugality and prudent spending. He used this to suggest it was not worthwhile to pay Hindu laborers more in India as they would not save the money but would use it to further their leisure activities (Swedberg, 2000).

Kirzner

Israel Kirzner, like Schumpeter, was part of the Austrian economic school of thought and helped to bring about its resurgence (Rocha, 2012). Where Schumpeter focused on the creativity and innovation that entrepreneurs bring to their endeavors to disrupt the economic

environment, Kirzner saw entrepreneurs as those who identified opportunities for arbitrage and who exploited those opportunities. Kirzner's entrepreneurship model was influenced by Mises' "Profit seeking and speculating entrepreneurs" and Hayek's "Mutual learning" (Tiryaki, 2015; Parker, 2018). Kirzner argued that entrepreneurship is important for the market economy and without it the market economy will not work. Kirzner and Knight agreed that entrepreneurship is not about innovation only but about recognizing entrepreneurial opportunities and bearing uncertainty (Brouwer, 2002; Metcalfe, 2006). Kirzner argued that the entrepreneur is an equilibrating force for the market economy (Metcalfe, 2006).

One of the defining characteristics of entrepreneurs for Kirzner is alertness. It is this alertness and attention to opportunities that others miss and the entrepreneur recognizes. However, this alertness goes beyond just identifying arbitrage opportunities, exploiting those and thus eliminating them; entrepreneurs not only see opportunities where others do not, the others are not aware that they are missing the opportunities at all (Kirzner, 1997). Kirzner adds that "The entrepreneur who 'sees' (discovers) a profit opportunity, is discovering the existence of a gain which had (before his discovery) not been seen by himself or by anyone else" (Kirzner, 1997, p. 34-35). Availability of new information does not promote or guarantee exposure to these opportunities. Shane (2003) argues that Kirzner's entrepreneur does not require access to new information to exploit those opportunities. Shane (2003) adds that the Kirzneian entrepreneur exploits opportunities based on information available for everyone, but the entrepreneur accesses it before others and uses it more appropriately than others, such as, "technological changes or regulatory developments" (p.45). Information is not distributed evenly for everyone and not everyone receives it in the same time (Shane and Venkataraman, 2000).

In Kirzner's view, an entrepreneur is not just someone who sees an opportunity and who develops a way to meet that opportunity. An entrepreneur is alert to an opportunity that no one else perceives and finds ways to meet that opportunity. He continues that alertness is the major driver for entrepreneurship. Kirzner defines alertness as, "the kind of 'knowledge' required for entrepreneurship is 'knowing where to look for knowledge' rather than knowledge of substantive market information" (Kirzner, 1978, p.68).

Kirzner was critical in his book about Schumpeter's economic development theory. He contrasted the differences between Schumpeter's definition and his definition of an entrepreneur. Kirzner mentioned that the difference between his definition of an entrepreneur and Schumpeter's is that "the entrepreneur is pictured as initiating change and as generating new opportunities... the entrepreneur is presented as a disequilibrating rather than an equilibrating force... By contrast my own treatment of the entrepreneur emphasizes the equilibrating aspects of his role" (Kirzner, 1978, p. 72-73).

Entrepreneurs succeed by recognizing present causes for future events, thus minimizing or eliminating uncertainty (Kirzner, 1997). In contrast, the Schumpeterian entrepreneur is the driving force of innovation and creative destruction in the economy (Schumpeter, 1934). Kirzner considers the entrepreneur as an alert arbitrageur while Schumpeter considers the entrepreneur as innovator not imitator (Tiryaki, 2005). In addition, Schumpeter considers an entrepreneur as a destructive force while Kirzner considers an entrepreneur as a constructive force (Metcalf, 2006).

Both Schumpeter and Kirzner recognized entrepreneurs as those who are able to take advantage of situations where others cannot. But while Schumpeter views entrepreneurs as disruptors, Kirzner views them as bringing equilibrium. Kirzner's entrepreneurs recognize the

opportunity for arbitrage, exploit that opportunity and eliminate the disequilibrium through their actions. By acting as they do and recognizing what others around them do not, Kirzner's entrepreneurs bring the market back to equilibrium (Boudreaux, 1994).

Knight

Frank Knight was an American scholar who studied chemistry, German drama and philosophy. He was responsible for translating Max Weber's book on economic history (Brouwer, 2002). Knight refined Cantillon's definition of an entrepreneur (Casson et al., 2008). He distinguished between risk and uncertainty, and then used this distinction to predict how entrepreneurs would act with regard to maximizing profit. Casson et al. (2008) adds that, "Knight viewed the entrepreneur as uncertainty-bearer, for which service the entrepreneur received a reward of pure profit" (p.11). Knight argued that uncertainty is the main focus of his theory of entrepreneurship (Brouwer, 2002). One of Knight's most important works is his book "Risk, Uncertainty and Profit". This book is considered an economics classic (Sakai, 2016).

Risk, according to Knight, was measurable and quantifiable. In addition, risk is insurable while uncertainty is uninsurable (Casson et al., 2008). Risk takers would build that risk calculation, "a Priori", into their decision making and economic profit would be eliminated, or at least minimized, as others did the same (Knight, 1921). Because risk could be quantified, it could be protected against, including using insurance, hedging and other means (Emmett, 2010).

Uncertainty, on the other hand, refers to a situation where the probability of a particular outcome is unknown. Uncertainty cannot be protected against in the same way that risk can, and Knight postulated that uncertainty leads the entrepreneur to economic profit by being

willing to venture into situations where the outcome is uncertain (Emmett, 2010). Knight added that “It is this true uncertainty which by preventing the theoretically perfect outworking of the tendencies of competition gives the characteristic form of ‘enterprise’ to economic organization as a whole and accounts for the peculiar income of the entrepreneur” (Knight, 1921, p.232).

It is this uncertainty that is at the heart of Knight’s theory of entrepreneurship. Unlike Weber, who saw entrepreneurship as an outgrowth of a strong work ethic derived from religious principles, Knight suggested that entrepreneurship resulted from the willingness to accept uncertainty and profit would accumulate when the outcomes were positive. For Knight, entrepreneurs were essentially driven by a desire to win a game; that is, to invest in an endeavor with an uncertain outcome, assume the potential for loss that the outcome could be negative, and reap profits if the outcome turned out to be positive (Emmett, 2010). Knight related profit to bearing uncertainty and not to bearing risk (Ricketts, 2008). Pure profit, in another words, is the net compensation to the entrepreneur for bearing the cost of uncertainty (Casson, 2003; Ricketts, 2008).

The ability of people to recognize an opportunity is different between individuals. According to Knight, “There must come into play the diversity among men in degree of confidence in their judgement and powers and in disposition to act on their opinions to ‘venture’” (Knight, 1921, p.269). Thus, the opportunity discovery for Knight is the entrepreneur’s foresight, whereas for Schumpeter it is creativity and innovation and for Kirzner it is the entrepreneur’s alertness (Shane, 2003).

While Knight placed the responsibility for the decision making on the entrepreneur, he also held that the entrepreneur was funded by investors. Investors selected entrepreneurs with

the expectation that they would be able to make a profit in an uncertain economic situation and continue to fund those who are successful and abandon those who are not. This requires a high level of perception skills on the part of the entrepreneur, who is able to discern which uncertainties are worth the profit and which are more likely to fail. Entrepreneurs who lack this perception will ultimately fail (Emmett, 2010). Knight viewed entrepreneurs as individuals who took advantage of opportunities and not individuals who were born as entrepreneurs (Parker, 2018).

Shane and Venkataraman

Scott Shane is Professor of Entrepreneurship at the University of Maryland, USA, and Sankaran Venkataraman is Professor of Entrepreneurship at the University of Virginia, USA. Shane and Venkataraman published one of the most highly cited entrepreneurship articles according to Web of Science and Google Scholar, “The Promise of Entrepreneurship as a Field Of Research” (Shane and Venkataraman, 2000). Shane and Venkataraman are two of the researchers in the field that develop entrepreneurship empirically. Both researchers sought to develop the subject into a conceptual framework (Pittaway et al., 2014). In their article, “The Promise of Entrepreneurship As A Field Of Research”, they developed a framework to study the field of entrepreneurship. Teague and Gartner (2017) described their framework which consists of three parts. The first part focused on entrepreneurial opportunities. The second part focused on the influence of individuals and opportunities. The last part focused on firm creation.

Shane and Venkataraman (2000) defined the field of entrepreneurship as, “The scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited” (p.218). They add that the field covers “the sources of opportunities, the processes of discovery and exploitation of

opportunities, and the set of individuals who discover, evaluate and exploit them” (Shane and Venkataraman, 2000, p.218). They argued that to have entrepreneurship, entrepreneurial opportunities must exist first. In defining entrepreneurial opportunities, Shane and Venkataraman (2000) agreed with Kirzner (1997) regarding the differentiation of entrepreneurial opportunities from other opportunities. They defined it as the opportunities that need, “the discovery of new means-ends relationships” (Shane and Venkataraman, 2000, p.220). Entrepreneurs are defined as those who discover entrepreneurial opportunities (Shane and Venkataraman, 2000).

Scott Shane used more rigorous scientific methodology in his exploration of entrepreneurship and was able to be published in more prestigious journals; in addition to the direct benefit to the field from his research, ancillary benefits accrued to the field of entrepreneurship study as it was taken more seriously by scholars. One of the key features of Shane’s work is his observation that entrepreneurs use prior, private knowledge to identify opportunities that remain hidden to others. Shane (2000) argues that people will not be able to discover the same opportunities because access or exposure to information will be the same. Shane used 3D printing technology which was widely publicized and provided the same technological basis to would-be entrepreneurs and considered how entrepreneurs made use of that technology. He found only eight instances of start-ups based on this technology. Entrepreneurs sought non-obvious ways of using the technology; this is similar to previous thinkers’ use of innovation, alertness and surprise. Entrepreneurship thus depends on opportunity plus individuals able to build on that opportunity (Davidsson and Wiklund, 2009).

Shane’s understanding of entrepreneurship extends to the entrepreneurial process. Where the thinkers mentioned above focused on observing and describing entrepreneurs and

entrepreneurship, Shane moved the field forward by considering specific activities that contribute to the success of the entrepreneurial venture. Business planning, for example, provides a framework that gives concrete actions to abstract visions. This planning needs to take place prior to marketing activities and when carried out, can help ensure the success of the entrepreneurial venture. Shane arrived at this after studying both successful and failed entrepreneurial activities and identifying common factors in both. Lack of planning or an early emphasis on marketing without sufficient business planning is positively associated with the failure of the entrepreneurial venture to be sustained over the long-term (Davidsson and Wiklund, 2009).

Sankaran Venkataraman returns to the very roots of entrepreneurship writing and Cantillon by focusing not on the success or failure of entrepreneurs or their organizations, but rather on how previously unknown and unavailable goods and services come into being and into the market. The “who”, as in who conceives these items, is part of his research but he also calls for studying how, why, when and the consequences of introducing new goods and services. He does this in part to develop a more rigorous and defined field of study for entrepreneurship. He also notes that other fields, such as economics and sociology, do not focus on a single aspect of the field, such as the resource allocator for economics or society for sociologists (Venkataraman, 1997).

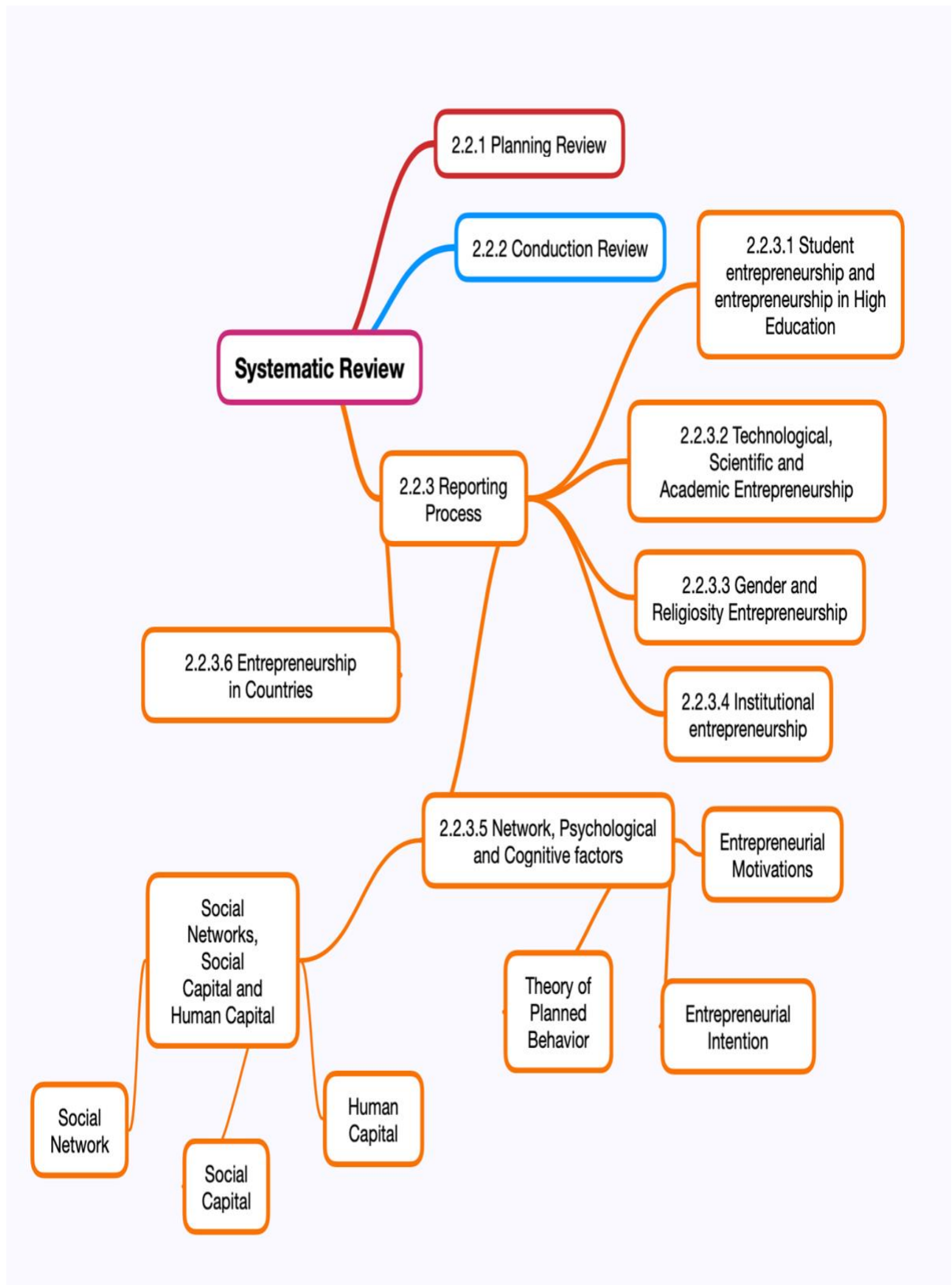
Venkataraman recognizes Kirzner’s view that markets are inefficient much of the time but are brought closer to equilibrium by entrepreneurship, and Schumpeter’s view that disruption by entrepreneurs destroys the equilibrium of markets. Similar to Scott, Venkataraman finds that entrepreneurship is dependent both on opportunities and individuals who can exploit those opportunities. Because each person has a unique background and unique

knowledge, they can view the same set of circumstances very differently. Venkataraman suggests that knowledge and informational differences, cognitive differences and behavioral differences set the entrepreneur apart from others who are in similar circumstances but who fail to take entrepreneurial action. It is these differences in the individual that enable some to be willing to take the risks that are inherent with uncertainty. From this standpoint, Venkataraman builds on Knight's view of uncertainty as being key to understanding entrepreneurship (Venkataraman, 1997).

2.3 Systematic Review Method

Jesson et al. (2011, p.108) define the systematic review approach as “a comprehensive review of all published articles selected to address a specific question using a systematic method of identifying relevant studies in order to minimise biases and error”. The aim of this systematic review is to explore and summarise the state of current research pertaining to entrepreneurship in the Arab context and Gulf Countries, especially Kuwait. The systematic review method was adopted because it promotes the identification and analysis of “high-quality” and relevant evidence (Tranfield et al., 2003). The systematic review approach used for this study is the same systematic review process that was adapted by Kitchenham and Charters (2007) and Tranfield et al. (2003), from the works of Higgins and Green (2003) and Clarke and Oxman (Eds) (2001). The process consisted of three main stages: planning, conducting and reporting (Kitchenham and Charters, 2007; Tranfield et al., 2003). The systematic review map (see Figure 2.1) illustrates the systematic process and reporting structure.

Figure Chapter.2.1: Systematic review map



2.4 Planning the Review

In the planning review stage, the first step is to explore, identify and expand the research to any entrepreneurship themes for the same region in case there is a lack of research covering entrepreneurship for Kuwait. The second step is to expand the review to neighboring regions and include all entrepreneurship themes in case the first step did not yield sufficient research. At the end of the planning review process, keywords for the systematic review were identified (Table Chapter 2.1: Search strings and key words).

2.5 Conducting the Review

The systematic review at this point covers all the neighboring regions to Kuwait and all entrepreneurship themes studies in the aforementioned regions. Table Chapter 2.1: Search strings and key words explains the relevant keywords and search strings used in the review. The systematic literature review spanned all research themes of entrepreneurship in the Gulf and the Arab speaking regions. Thorpe et al. (2005) argued that a systematic review should start with the *transparency* principle. They defined the transparency principle as describing the research's search strings and the rationale behind choosing them.

The systematic literature review's search strings are divided into two search strings: the main search string and the sub search strings. The main search string for this systematic review research is "Entrepreneurship" while the sub search strings consist of eleven keywords representing Arab countries (Table 2.1: Search strings and key words). The Web of Science database was used for this systematic literature research. The conducting review plan of the systematic review research was divided into five phases.

The first phase was to identify the topic. The topic of interest for the research is entrepreneurship in the context of Arabic countries, especially Kuwait. In the planning review

stage, the dearth of research in the subject's region, especially in Kuwait, made it necessary to expand the topic to include more regions for the search. The database yielded 15 studies covering the keywords: Kuwait + entrepreneurship. After eliminating non ranked journals according to the Association of Business Schools ABS journal ranking guide "Academic Journal Guide 2018" (Chartered Association of Business Schools, 2018), Kuwait in combination with entrepreneurship yielded a single research article, "Women in leadership in Kuwait: a research agenda" (Al-Salem and Speece, 2017). This single article is irrelevant to the research subject and had to be eliminated. The ABS Journal Guide offers a wide range of journals, strong internal and external reliability and is widely accepted in the business research community (Morris et al., 2009).

The database did not yield sufficient studies covering "entrepreneurship" + "Kuwait*". The search was expanded to include more regions. The targeted regions for the research include Arab, Bahrain, GCC (Gulf Council Countries), Kuwait, Middle East, Oman, Qatar, Saudi Arabia, and UAE.

The second phase was to search the database for literature by combining the main keyword, entrepreneurship, with the eleven sub search strings. These eleven sub search strings are Arab, Arabia, Bahrain, GCC, Gulf, Kuwait, Middle East, Oman, Qatar, Saudi and UAE. The main keyword, entrepreneurship, and the eleven sub strings were used interchangeably (Table 2.1: Search strings and key words). The search strings were interchanged between searching title/topic*, topic/title*, title/title* and topic/topic*. For example, using entrepreneurship as topic* and Kuwait as title* or entrepreneurship as title* and Kuwait as topic* or entrepreneurship as title and Kuwait* as title. This process was applied for all the main keywords and the eleven sub search strings. The database search aimed to identify studies

covering entrepreneurship in the Arab countries or the nine aforementioned regions (Arab, Bahrain, GCC, Kuwait, Middle East, Oman, Qatar, Saudi Arabia and UAE). The second phase identified 933 articles for the entrepreneurship keyword and the eleven sub strings combined.

To focus on entrepreneurship as the primary goal of the review, a related task was to identify and extract only those studies with a large and pertinent focus on entrepreneurship and start-up/new ventures. The search yield includes articles, books, book chapters, conferences and papers published between 1990 and 2019. The lack of research on entrepreneurship in the MENA region between 1990 and 2006 (Bruton et al., 2008) highlighted the need for the research's period to be expanded beyond 2006.

The third phase was to combine the entrepreneurship keyword with all the eleven sub search strings' results to eliminate any duplication of the articles. Endnote's duplication tool was used to eliminate repeated articles. After eliminating the duplicates, 407 documents were obtained.

The fourth phase was manually eliminating duplicates from the combined third phase results. During the review of the literature at this phase, duplicate articles were found. As a result of Endnote's limitations, it was necessary to eliminate duplicate articles manually. Endnote could not identify duplicate articles with different formats of the author's last name and first name. For example, Alshumaimri et al. (2010) appeared twice in the 407 results because the second author B. Audretsch's name appeared before Alshumaimri's.

The 407 documents were downloaded to Microsoft Excel and manually checked for duplication. The outcome was 210 studies. After eliminating irrelevant studies, the review search resulted in 96 articles. The inclusion criteria for this process was to include studies focusing on entrepreneurship for the targeted regions (the eleven sub strings). The studies

identified were focusing on entrepreneurs developing business ventures, especially, technology and factors affecting entrepreneurship in the targeted regions. The included studies represent Thorpe et al.'s (2005) focus principle. As a result, social entrepreneurship and entrepreneurship that fell outside the eleven sub strings were excluded from the results.

The fifth phase was to screen the journals' ranking consistent with the ABS journal guide (Chartered Association of Business Schools, 2018) and to eliminate non-ranked ABS journals and irrelevant studies, such as non-empirical study books, book reviews, news and conference proceedings. The outcome was 55 articles. These articles were published through ranked journals consistent with the ABS Guide 2018.

Table 2. 1: Search strings and key words

Main keyword	Sub Search String
Entrepreneurship	Arab*
	Arabia*
	Bahrain*
	GCC*
	Gulf*
	Kuwait*
	Middle East*
	Oman*
	Qatar*
	Saudi*
	UAE*

2.6 Reporting Process

The conducting review process yielded 55 studies (see Appendix I). The studies were published between 2010 and 2019. Studies published between the 2014 to 2018 period accounted for 89% of all the 55 published studies. Abu Bakar et al., (2017) affirmed that there is a lack of research on the developing countries focusing on business creation. Table 2.2: Year of publication demonstrates the number of studies published per year between 2010 to 2019. The outcome of the conducting review process is classified into six entrepreneurship related subjects: student entrepreneurship and entrepreneurship in high education, technological, scientific and academic entrepreneurship, gender and religiosity entrepreneurship, institutional entrepreneurship, network, psychological and cognitive factors, and entrepreneurship in countries.

Table 2. 2: Year of publication

Year of publication	Number of articles	Percentage
2010	4	7%
2012	1	2%
2013	1	2%
2014	5	9%
2015	10	18%
2016	8	15%
2017	14	25%
2018	11	20 %
2019	1	2%

2.6.1 Student Entrepreneurship and Entrepreneurship in Higher Education

Studies focusing on student entrepreneurship and entrepreneurship in Higher Education (HE) represent 10 out of the total 55 reviewed studies. Table 2.3: Higher Education and student entrepreneurship presents the studies focusing on student entrepreneurship and entrepreneurship in higher education. These studies account for 18% of the total review outcome. Studies published in 2017 account for more than 50% of the studies in this category. All studies adopt a quantitative methodology and survey design as data collection. The average sample size is 261 participants. The smallest sample is 74 by Thomson and Minhas (2017), while the largest sample is 856 by Almobaireek and Manolova (2013). Studies in this section mainly address the factors affecting students' entrepreneurial intention or students' perception of entrepreneurship. Most of the studies investigate undergraduate students' entrepreneurial intentions and motivation.

The recent shift by Gulf Governments from oil refining as the main source of revenue towards entrepreneurship explains the emergence of entrepreneurship education in Saudi Arabia, Oman and the UAE (Abu Bakar et al., 2017; Bastian and Zali, 2016; Nasra and Dacin, 2010; Hvidt, 2013; Subrahmanian et al., 2017; Tipu and Ryan, 2016). Another factor that encouraged the researchers to target students in their entrepreneurship studies, mentioned in this section, is the young nature of the Gulf states' populations (Hvidt, 2011).

Student perception and interpretation of entrepreneurial training influences entrepreneurial intention and attitudes. For example, Belwal et al. (2015) studied students' perceptions of entrepreneurship in Oman. The authors conclude that students' perceptions of entrepreneurship is positive. Likewise, Subrahmanian et al. (2017) explain the influencing factors affecting students' intention in HE Institutions in Oman. The researchers demonstrate

that Ajzen's model explains the entrepreneurial intention of Omani students, that is, government and HE institutions instill an entrepreneurship culture amongst Omani students.

In terms of psychological and socio-cognitive factors, then, entrepreneurial attitudes and effectual learning each, respectively, influence entrepreneurial intention. In this way, Aloulou's (2016a) study investigates the factors affecting Saudi students' entrepreneurial intention by applying the Entrepreneurial Attitude Orientation model. The findings of this study state that there was a relationship between entrepreneurial attitudes, student background factors and entrepreneurial intention. Furthermore, Aloulou (2017) explains the entrepreneurial intentions and behaviors of Saudi distance learners. The author concludes that two of TPB's antecedents can predict Saudi distance learners' entrepreneurial intentions. These two antecedents are attitudes toward behavior and perceived behavioral control. Additionally, Kebaili et al.'s (2017) research how the entrepreneurial intention of Qatari male students can be affected by psychological and institutional barriers. The authors conclude that three psychological barriers of risk avoidance (RA), fear of failure (FF) and stress avoidance (SA), and two institutional barriers of financial barriers (FBs) and knowledge barriers (KBs) are negatively affecting Qatari students' entrepreneurial intentions. Related to cognition, Aloulou (2015) investigated the impact of the determinants of a positive attitude and self-efficacy on intention, while Jabeen et al. (2017) studied factors influencing the entrepreneurial mindset of the UAE youth. Their study suggests that Emirati youth consider entrepreneurship and self-employment as a main choice of employment after graduation.

Few of the studies address students' entrepreneurial motivation and thus, the importance of intrinsic drive. With this in mind, Almobaireek and Manolova (2013) researched the entrepreneurial motivations of Saudi female students. Their main objective was to explore

the key factors that motivate young Saudi females to start a business or involve themselves in entrepreneurial activities. The study stresses that Saudi females have high entrepreneurial intentions for personal reasons. Moreover, Thomson and Minhas (2017) researched the motivational and environmental factors influencing entrepreneurial intentions of Emirati undergraduates. The study indicates that motivational factors, such as attitude towards the (entrepreneurial) behaviour and perceived behavioural control (PBC), have positive effects on Emirati students' entrepreneurial intentions.

Table 2. 3: Higher education and student entrepreneurship

Author	Theory	Sample	Methodology	Findings
Belwal, R., Balushi, H. and Belwal, S. 2015	Theory of Planned Behavior	200 Omani students from Sohar University's five faculties (business, engineering, computing and IT, English studies and art and law)	Quantitative survey design	The students' perception of entrepreneurship is positive (Attitude towards entrepreneurship and social norms), but there is a negative relationship between fear of failure and the desire to run a business.
Jabeen, F., Faisal, M. N. and Katsioloudes, M. I. 2017	Entrepreneurial mindset	244 first- and second-year Emirati students of two public and private universities in Abu Dhabi and Dubai	Quantitative survey design	The UAE young people prioritized entrepreneurship as a career choice.
Kebaili, B., Al-Subyae, S. S. and Al-Qahtani, F. 2017	Entrepreneurial Intentions	155 Qatari male students in the final year of a management bachelor degree	Quantitative/ Survey design	Qatari male students hold high entrepreneurial Intentions. (Five entrepreneurial intention variables were significant: financial barriers, knowledge barriers, risk aversion, fear of failure and stress avoidance).
Subrahmanian, M., Subramanian, K., Al-Haziazi, M.	Theory of Planned Behavior	334 Omani prospective graduates from leading	Quantitative/ Survey design	The study shows that the Ajzen's model best explains Entrepreneurial Intent (personal attitudes, subjective norms and perceived

and Herimon, P. C. 2017		universities and colleges in Oman		behavioral control effectively predicts entrepreneurial intent and has a positive and strong relationship).
Thomson, G. S. and Minhas, W. 2017	Entrepreneurial Intentions through the use of Linan's 2011 entrepreneurial intention questionnaire	74 Emirati undergraduate business students from the Higher Colleges of Technology (HCT)	Quantitative/ Survey design	Emirati undergraduates hold high entrepreneurial intentions (motivational factors positively correlated with entrepreneurial intention: attitude towards behavior, subjective norms, and perceived behavioral control) and (environmental factors: social valuation and closer valuation are positively correlated with entrepreneurial intentions).
Almobaireek, WN and Manolova, TS 2013	Entrepreneurial Motivations	856 undergraduate students at King Saud University, Saudi Arabia	Quantitative/ Survey design	Saudi female students have high entrepreneurial intentions and low entrepreneurial motivations. Saudi female students are necessity motivated whereas male Saudi students were financially motivated.
Aloulou, W. J. 2015	Theory of Planned Behavior	289 Saudi Students of Al Imam Mohammad Ibn Saud Islamic University	Quantitative/ Survey design	Some aspects of Theory of Planned Behavior are applicable to the Saudi context (perceived attitude and perceived self-efficacy).
Aloulou, W. J. 2016b	Theory of Planned Behavior	177 final-year business students of the College of Economics and Administrative Sciences at Al	Quantitative/ Survey design	The Theory of Planned Behavior predicts entrepreneurial intentions of Saudi students. (Subject norms are highly associated with entrepreneurial intentions for Saudi students rather than attitudes toward behavior and perceived behavioral control).

		Imam Muhammad Ibn Saud Islamic University, Saudi Arabia		
Aloulou, W. J. 2016a	Entrepreneurial attitude orientation, Entrepreneurial Intention	103 Saudi Freshmen students of Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia	Quantitative/ Survey design	There is a relationship between entrepreneurial attitude and entrepreneurial intentions. Entrepreneurial intention is positively correlated to (the affective, behavioral and cognitive) achievements and innovation attitudes.
Aloulou, W. J. 2017	Theory of Planned Behavior	178 final-year distance business administration learners of the Deanship of E- learning and Distance Education at Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia	Quantitative/ Survey design	Behaviour and perceived behavioural control were significantly associated with entrepreneurial intentions.

2.6.2 Technological, Scientific and Academic Entrepreneurship

Studies on technological, scientific, and academic entrepreneurship are limited in the target region and context of this systematic review. The review identified three empirical studies. Table 2.4: Technological, Scientific and Academic Entrepreneurship presents technological, scientific, and academic entrepreneurship studies. The studies adopt both qualitative and quantitative methodology and provide policy recommendations. The studies were conducted between 2010 and 2018.

Indeed, Alshumaimri et al. (2012) argue that, in their seminal research pertaining to science entrepreneurship in Saudi universities, there is a lack of research on this topic for the Middle East and Gulf context. They define a university scientist as an academic that engages in the process of firm creation. The core finding of the study is that universities are the main force for entrepreneurship. The authors concluded that the scientists' entrepreneurship in the Middle East is distinct from that in other parts of the world. In the Middle East younger scientists with less published research are more driven to engage in entrepreneurial activities than senior scientists who have published more research. Senior scientists in the Middle East are focusing more on research publications than engaging in entrepreneurial activities. While in the Western world, the more the scientists are publishing research, the more they are willing to engage in entrepreneurial activities.

In an earlier study, Alshumaimri et al. (2010) discuss and recommend policies on how technology transfer and entrepreneurship should evolve in Saudi Arabia. They explain and suggest policies and institutions that could help the technology transfer process and knowledge spillovers. The authors argue the government should increase its investment in creating knowledge resources by investing in universities' educational and research capabilities. In

addition, they recommend the government should create and invest in key institutions to facilitate technology transfer from universities for commercialization and spillover of knowledge to drive innovation activities and economic growth.-Similarly, Iqbal et al., (2018) examine the research driven technology transfer office in the UAE. The authors suggest that the Technology Transfer Office helped researchers and scientific/academic entrepreneurship in various ways. The Technology Transfer Office was founded to help scientists to transit their innovative research to product lines.

Two non-empirical studies were identified in the review. Khorsheed and Al-Fawzan (2014) presented the importance of collaboration between universities and the private sector in Saudi Arabia. The article explains how the Saudi government is promoting and stimulating entrepreneurship in the knowledge-based economy. The article presents a model for collaboration between universities and the private sector called the Technology Innovation Centers program. Furthermore, Khorsheed et al. (2014b) provides an overview of the role of BADIR for technology incubation in Saudi Arabia. The program, BADIR, was developed by King Abdulaziz City for Science and Technology. The main goals are to promote, help and support the development and establishment of technology incubator industries in Saudi Arabia.

Table 2. 4: Technological, Scientific and Academic Entrepreneurship

Author	Theory	Sample	Methodology	Findings
Alshumaimri, A., Aldridge, T. and Audretsch, D. B. 2012	Human Capital, Social Capital	288 scientists from three Saudi universities (King Abdulaziz University, King Fahad	Quantitative/ Survey design	The study found that the number of scientist publications is positively related to scientists' entrepreneurship and younger scientists are more likely to engage in entrepreneurial activities.

		University and King Saud University)		
Alshumaimri, A., Aldridge, T. and Audretsch, D. B. 2010			Discussion and policy recommendation	The paper finds that a technology transfer revolution in Saudi Arabia is taking place, with the goal of leapfrogging from the factor-based stage of economic development to the innovation-based stage of economic development, while bypassing the intermediary efficiency-based stage of economic development.
Iqbal, F., Hung, P. C. K., Wahid, F. and Mohammed, S.M.Q.A. 2018	Technology Transfer Office	Two case studies (Etisalat BT innovation Center at Khalifa University and Masdar Institute, UAE	Qualitative/ Case study	The findings suggest that the Technology Transfer Office assists university researchers in many ways. (commercializing university research, policy recommendations for commercializing of university IP).

2.6.3 Gender and Religiosity Entrepreneurship

Research on gender and religiosity and entrepreneurship account for nearly 50% of the studies in the review. The total number of studies is 26 out of 55 studies. Table 2.5: Gender and religiosity presents the gender and religiosity entrepreneurship studies. In addition, Table 2.6: Country research – gender and religiosity present the number of gender and religiosity studies for each country/region. The UAE has the greatest number of studies in this section. The UAE research accounts for 30% of the total studies focusing on gender and religiosity. The studies in this section focus on motivational factors of female entrepreneurs, female

entrepreneurial intentions, empowerment, and religion. The studies mainly focus on female entrepreneurship in a specific country. The studies include eleven qualitative studies, ten quantitative studies and one mixed methodology study. In addition, there are four literature reviews and one research agenda.

Studies that adopted a qualitative methodology adopted semi-structured, in-depth interviews and case studies, while studies that adopted a quantitative methodology used survey designs. The quantitative studies had an average sample size of 223 excluding two studies, (Bastian and Zali, 2016; Bertelsen et al., 2017). These analyze secondary data from GEM's survey, 15,551 and 16,365 respectively.

The nature and culture of Islamic and patriarchal societies in the Middle East influences this stream of research (Barragan et al., 2018; Mehtap et al., 2017; Tlaiss, 2014). Naguib and Jamali (2015) argue that positive changes in the Middle East are changing women's entrepreneurship. While a major portion of the review yielded gender and religiosity research, it is considered small compared to gender focused western research especially, with regards to the challenges they face (Hasan et al., 2016).

Technology has helped women entrepreneurs in overcoming barriers to start their businesses (Ameen and Willis, 2016; Mathew, 2010). Technology has been considered one of the major factors in supporting and developing female entrepreneurial activities (Jose, 2018; Mathew, 2010). Information Communication Technology (ICT) is used as a tool to close the gap between female entrepreneurship and male entrepreneurship (Mathew, 2010). In the Arab region, there are a few studies that address the role of technology in entrepreneurship in general and specifically for women. In one of the few studies, Ameen, and Willis (2016) investigate the use of mobile phones in supporting women entrepreneurship in Arab countries. They

suggest that female entrepreneurs face micro and macro level challenges in starting businesses in the Arab world e.g., gender gaps, cultural barriers and norms, social and family barriers, lack of government support and policies and a lack of access to Information and Communication Technology (ICT) and of information on how to use them in entrepreneurship. Another study confirms how the lack of support and bureaucracy undermines female entrepreneurship in Saudi Arabia (Sadi and Al-Ghazali, 2010).

With regards to digital technologies, Jose (2018) examines the role of social media and chat applications in promoting women entrepreneurs' businesses in the UAE and the motives in using these digital tools. The authors show that digital tools have a positive effect on women entrepreneurs' ventures. However, Mathew (2010) argues that the number of women in the Middle East that have access to ICT and ICT tools is very limited.

Women in the Arab world and Gulf countries are less engaged in entrepreneurial activities than men (Ameen and Willis, 2016; Bastian and Zali, 2016; Faisal et al., 2017; Mehtap et al., 2017). In patriarchal societies like the Middle East, female entrepreneurs face barriers to succeed and develop as entrepreneurs (Mehtap et al., 2017; Panda, 2018). As such, Naguib and Jamali (2015) show that women entrepreneurs in the UAE face stereotyping and constraints to express their entrepreneurship. Kalafatoglu and Mendoza (2017) identify other barriers that female entrepreneurs in the Middle East are facing, such as family cultural norms, access to funding, a lack of training and barriers in the business environment.

There are also macro-economic and societal factors that drive female entrepreneurship in the Gulf region (Jabeen and Faisal, 2018). According to Gupta and Mirchandani (2018), government training and support are influential drivers of successful women's entrepreneurship. For Mehtap et al. (2018) Jordanian women entrepreneurs' characteristics,

motives, barriers and challenges in informal business activities are often driven by profit and necessity.

Entrepreneurial activities can be directly affected by the level of training and the level of education (Abu Bakar *et al.*, 2017; Kalafatoglu and Mendoza, 2017; Mathew, 2010). Mehtap *et al.* (2017) studied women entrepreneurship motivation in Jordan. They demonstrate that the education system may impact female entrepreneurs' motivation. Importantly, Abu Bakar *et al.* (2017) affirm that the more educated an individual the more likely he/she is to start a business.

Building on this, Saviano *et al.* (2017) address the financial gap for women in the MENA region. The authors stress the fact that governments in the MENA region should work on increasing women's financial inclusion to improve competitiveness. Women entrepreneurs need to be financially educated to improve their entrepreneurial activity (Bodolica and Spraggon, 2015). Furthermore, Mathew (2010) stresses the importance of access to finance for women, he said that a "Lack of availability of finance to the women started project will lose its charm to attract customers, suppliers, distributors and channel members too" (p.169). Additionally, Abu Bakar *et al.* (2017) stress that access to finance is a major obstacle for individuals in the Middle East to start a business. Ghouse *et al.* (2017) studied the challenges faced by rural female entrepreneurs in Oman. They argue the Omani government should ease the access to funding and target special entrepreneurship training for women. In contrast, western women entrepreneurs such as those in the USA, find it less challenging to access funding than Middle Eastern women entrepreneurs such as those in Lebanon (Zgheib, 2018).

Gender studies also focus on women's entrepreneurial intentions and motivations (Bastian *et al.* 2018). Bastian and Zali (2016) study how women's entrepreneurship motivations can be affected by educational level, educational accomplishment, and

entrepreneurial competencies. The study concludes that education influences female entrepreneurial motivations more than male entrepreneurial motivations. On the other hand, Mathew (2010) argues that in the Middle East, women's entrepreneurial motivation is low. Tlaiss (2015) studied the motives of Emirati women's entrepreneurship in the UAE. The author suggests that Emirati women entrepreneurs' motivation factors are different from those of women entrepreneurs in the west. While Zgheib (2018) show that American entrepreneurs have strong pull factors, Lebanese women entrepreneurs have strong push factors. Also, Sadi and Al-Ghazali (2010) stress that Saudi women entrepreneurs are motivated by self-achievement.

Women's entrepreneurship is helping women in patriarchal societies to drive social change and empower them. Alkhaled and Berglund (2018) studied the difference between women's empowerment and emancipation. They suggest that entrepreneurship does not only drive economic growth but also drives social change. Barragan et al. (2018) also studied the micro-emancipation from an Islamic perspective. They focus their study on Emirati female entrepreneurs by analyzing micro-emancipation and patriarchal constraints in their society. But to empower women entrepreneurs, Jabeen et al. (2015) suggest that Emirati women entrepreneurs should seek advice and should find it easier to access funds. Another way to empower women is an informal way of self-employment such as starting home businesses or starting unregistered businesses (Mehtap et al., 2018). In a rural context, Mehtap et al. (2018) found that women residing in rural areas are empowered by entrepreneurship.

In a patriarchal country such as the Kingdom of Saudi Arabia, Saudi women entrepreneurs share similar challenges that are faced by Middle Eastern/Arabian women entrepreneurs. Saudi Women entrepreneurs are challenged by the culture norms, government

laws, Islamic values, and business barriers (Sadi and Al-Ghazali, 2010; Welsh et al., 2014). Kalafatoglu and Mendoza (2017) affirm that culture norms and values affect women's entrepreneurship in the MENA region. In another study, Bodolica and Spraggon (2015) identify family responsibilities as a barrier for female entrepreneurship.

Social networks are one of the most important factors for female entrepreneurs in Arab and Middle Eastern societies. Kalafatoglu and Mendoza (2017) argue that women entrepreneurs rely on their social networks for valuable resources and support. For Welsh et al. (2014), the knowledge base and family and friends' support play a major role in women's entrepreneurial success. In a study of multiple motivations, Baranik, Gorman, and Wales (2018) explore the factors that affect Muslim Tunisian women. They stress that social capital is considered an asset and driver for Tunisian Muslim females, but religiosity does not influence their entrepreneurial performance. In a comparative study, Bertelsen et al. (2017) analyzed the difference between female and male entrepreneurs' networking in China, Yemen, Iran, Saudi Arabia, Qatar, and the United Arab Emirates. The study concluded that female entrepreneurs have larger private networks than male entrepreneurs' in the studied countries except in Yemen. The study adds that female entrepreneurs have smaller public networks than male entrepreneurs have in Saudi Arabia and Qatar.

The linkage between religiosity and women's entrepreneurship are not widely studied in the Middle East/Arab region (Baranik et al., 2018). For instance, Barankik et al (2018) studied the role of religiosity on women's entrepreneurial performance in Tunisia. They concluded that religiosity and entrepreneurial performance are statistically insignificant. On the other hand, Islamic values may affect entrepreneurs' decisions and performance. Conversely, Tlaiss (2014) studied how Islamic business ethics and values can affect and

influence Muslim women entrepreneurs in the Arab world. The study targeted four Arab countries: the UAE, Lebanon, Kuwait, and Oman. The study found that women entrepreneurs in the Arab world are driven by Islamic values to run their businesses. The author demonstrates that Islam did not constrain women entrepreneurs in doing business. Women entrepreneurs in the study agree that Islamic values are the core success factors of their businesses.

Table 2. 5: Gender and religiosity

Author	Theory	Sample	Methodology	Findings
Alkhaled, S. and Berglund, K. 2018	Emancipation and empowerment	26 women entrepreneurs in the two national contexts of Saudi Arabia and Sweden (13 for each country)	Qualitative/unstructured and semi-structured inter- views, focus- group interviews, observations, and participant observations	Women entrepreneurship is a vehicle for women’s empowerment and social change.
Faisal, M.N., Jabeen, F. and Katsioloudes, M.I. 2017	Female entrepreneurship	N/A	Literature Review to identify barriers to female entrepreneurship in the GCC region	The study identified barriers for women’s entrepreneurship: a lack of a supportive regulatory environment, culture and religious beliefs, gender bias and lack of family support.
Bastian, B. L. and Zali, M. R. 2016	Entrepreneurial motivations	1,551 early-stage and established female entrepreneurs from 13 MENA countries, notably, Algeria, Egypt, Iran, Jordan, Lebanon, Morocco, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey, United Arab Emirates and Yemen.	Quantitative/Survey design Global Entrepreneurship Monitor (GEM) Data	Education has a more positive effect on women’s entrepreneurial motivation than men’s entrepreneurial motivation. Also, competencies have a more positive effect on men’s entrepreneurship.
Gupta, N. and Mirchandani, A.	Entrepreneurial success	289 UAE based women entrepreneurs	Quantitative/Survey design	The personal, environmental factors and government support positively affect women’s entrepreneurship success.

2018				
Jabeen, F. and Faisal, M.N. 2018	Enablers of female entrepreneurship	224 Emirati female entrepreneurs through Abu Dhabi Businesswomen Council	Quantitative/Survey design	Female entrepreneurs considered spotting market trends and customer needs, management skills, attaining sustainable competitive advantage, social networks, and community involvement as major enablers. In addition, government support and community involvement are considered as important female entrepreneurship enablers.
Jabeen, F., Farouk, S. and Katsioloudes, M. I. 2015	Entrepreneurial Success Factors and Advice factors	224 Emirati female entrepreneurs	Quantitative	Emirati female entrepreneurs considered three main success factors: “management skills and customer support”, “community involvement, personnel, capital, training, government” and “reputation factors.” The study revealed that the Emirati women now seek advice for their startups and find it easier to raise finance for a new business, particularly from banks.
Saviano, M., Nenci, L. and Caputo, F. 2017	Women’s financial inclusion	N/A	Quali-Quantitative: a review of previous literature, a critical analysis based on secondary data (World Bank Reports)	The paper highlights the need for a more systemic approach and long-term vision to support a more extensive women’s financial inclusion in MENA regions.
Kalafatoglu, T. and Mendoza, X. 2017	Social Capital, Social Network Theory	25 women entrepreneurs living and operating businesses in Turkey and in four countries of the Middle East and	Qualitative/Semi-Structured interviews	The results indicate that being a woman entrepreneur in a highly patriarchal society limits entrepreneurial activities due to culture and social norms. However, networking appears as the key factor for these women entrepreneurs to overcome the barriers that they face, such

		North African region, namely, Lebanon, Saudi Arabia, Morocco, and Egypt.		as access to capital, financial information, resources, and new business opportunities.
Naguib, R. and Jamali, D. 2015	Female entrepreneurship, Institutional theory	15 female entrepreneurs and five male partners in the UAE	Qualitative/in-depth interviews	Micro-level factors through push and pull factors are incentivizing females to seek entrepreneurship. UAE female entrepreneurs face meso and micro level factor constraints to seek entrepreneurship: restricted access to network and capital to patriarchal religious interpretations and cultural norms that disapprove of a purely independent and emancipated role for women in business.
Jose, S. 2018	Female entrepreneurship	20 in-depth interviews with immigrant women entrepreneurs in the United Arab Emirates.	Qualitative	All the expatriate women interviewed are using social media and chat applications to promote their business. Facebook is used for brand creation and WhatsApp is used as a direct marketing tool to evoke purchase response. Though traditional promotional tools are far from redundant, their role is more supplementary. The increasing trend is a combination of traditional tools and digital tools. Digital tools seem to have an upper hand in their business promotions.
Ameen, N. A. and Willis, R. 2016	Female entrepreneurship	N/A	An in-depth analysis of the existing literature and recent reports on women's entrepreneurship and on	The findings of this research indicate that female Arab entrepreneurs are interested in using mobile phones. However, they have not yet realized the full potential of mobile technology in empowering them

			the adoption and use of mobile phones in Arab countries.	beyond its basic use. Several challenges facing women entrepreneurship in the Arab countries were identified. Mobile phones can be used to overcome these challenges.
Baranik, L. E., Gorman, B. and Wales, W. J. 2018	Social Capital, Religiosity	84 female entrepreneurs participating in entrepreneurship training programs across Tunisia	Quantitative/Survey Design	Social capital (wasta) is a critical asset for Muslim women entrepreneurs. Religiosity, on the other hand, had no statistically significant relationship with entrepreneurial performance.
Barragan, S., Erogul, M. S. and Essers, C. 2018	Emancipation and agency	22 in-depth interviews in the UAE	Qualitative/in-depth interviews	Females in the UAE face boundaries imposed by their society (family and the men). The study argues female entrepreneurs turn the barriers into resources by engaging in both strategic obedience and disobedience.
Bastian, B. L., Sidani, Y. M. and El Amine, Y. 2018	Female entrepreneurship	N/A	Systematic and Narrative review	Important gaps in the field are a lack of theoretical foundations; an over emphasis on macro level indicators, such as culture and religion and an under emphasis on organizational level variables; a lack of studies that analyze female entrepreneurship within ethnic groups, or studies that acknowledge the complex social, cultural and religious diversity of the region; and inattention to particular regional experiences (e.g. refugees crises) and emerging trends.
Bertelsen, R.G., Ashourizadeh, S., Jensen,	Female entrepreneurship, Network	16365 Global Entrepreneurship Monitor (GEM) for China and Yemen,	Quantitative/Survey Design	Analyses show that female entrepreneurs tend to have slightly larger private sphere networks than male entrepreneurs. The differences between male and female

K.W., Schött, T. and Cheng, Y. 2017		Iran, Saudi Arabia, Qatar and the United Arab Emirates.		entrepreneurs' networking in the public sphere are considerably larger. Societal differences in the relative prominence of networking in the public and private spheres, and the gendering hereof, correspond well to cultural and socio-economic societal differences. In particular, the authors found marked differences among the religiously conservative and politically autocratic Gulf states.
Bodolica, V. and Spraggon, M. 2015	Entrepreneurship process	1 case study Heels and Deals' (H&D) Dubai, UAE	Qualitative/ Narrative Case study	The narratives of the case protagonists allow contrasting the discovery and creation views of entrepreneurship and examining the role of leadership skills and personality characteristics in entrepreneurial success.
Mathew, V. 2010	Female entrepreneurship	N/A	Agenda	The women in various Gulf countries are facing socio cultural challenges which restrict them from doing business.
Mehtap, S., Ozmenekse, L. and Caputo, A. 2019	Female entrepreneurship /informal entrepreneurship	14 female informal entrepreneurs in Amman, Jordan.	Qualitative/Semi-structured in depth-interviews	The study revealed that informal female entrepreneurs tend to be both opportunity- and necessity-driven. Generating profit and contributing to the household income seems to be their main motive. Their businesses were funded either through personal savings or from their social network (e.g. husband, family and friends).
Mehtap, S., Pellegrini, M. M., Caputo,	Entrepreneurial intentions/ female entrepreneurship	254 female business students from two universities in Jordan	Quantitative/Survey Design	The study identified two main factors affecting entrepreneurs: external factor and internal factors. The internal factors: self-efficacy, access to education, fear of

A. and Welsh, D. H. B. 2017				failure. The external factors are divided into macro factors like access to finance and micro factors like family and community. Jordanian female students participated.
Panda, S. 2018	Female entrepreneurship	N/A	Systematic Literature Review	Constraints faced by women entrepreneurs in developing countries arise from gender discrimination, work-family conflict, difficulty in raising capital, lack of infrastructure, unstable business, economic and political (BEP) environments, lack of training and education and personality differences. The study suggests that in addition to financial constraints, unstable BEP environments need to be addressed as top priorities.
Sadi, M. A. and Al- Ghazali, B. M. 2010	Female entrepreneurship	150 men and women supplied by the Eastern Region Chamber of Commerce Center at Dammam.	Quantitative/Survey Design	The results reveal that self-achievement is the most motivational factor for businesswomen in Saudi Arabia. The barriers include a lack of market studies, a lack of governmental support, a lack of coordination among government departments, a lack of support from the community, society restrictions and the oligopolistic attitude of the investors.
Tlaiss, H. A. 2015	Entrepreneurial motivation/Female entrepreneurship	20 local Emirati women entrepreneurs	Qualitative/in-depth interviews	The findings illustrate how the entrepreneurial motivations of Emirati women unfold in a complex interplay between pull (non-economic) and push (dissatisfaction) motivational factors within the Arab patriarchal and Islamic contexts, thus lending credence to the

				post-materialism, legitimation, and dissatisfaction theories, which collectively help explain the entrepreneurial motives of women in this context.
Tlaiss, H. A. 2014	Female entrepreneurship/religiosity	30 Muslim women entrepreneurs from 4 countries: 20 from UAE, 4 from Lebanon, 4 from Kuwait and 2 from Oman	Qualitative/in depth semi-structured interviews	The results portray how Islamic work values and ethics are embedded in the entrepreneurial activities of these Arab women. The results also illustrate how Muslim women entrepreneurs seek well-being (falah) in their life and excellence (itqan) in their work while running their businesses.
Welsh, D. H. B., Memili, E., Kaciak, E. and Al Sadoon, A. 2014	Female entrepreneurship/entrepreneur's knowledge base	164 Saudi female entrepreneurs	Quantitative/survey Design	The findings reveal that women are the principal in the majority (55%) of women-owned businesses. A total of 70% of the women own more than 51% of the business and 42% started the business by themselves. Saudi Arabian businesswomen are highly educated, receive strong support from family and friends, and rate themselves as excellent in people skills and innovation.
Zgheib, P. 2018	Entrepreneurial Motivation	102 women entrepreneurs from the USA and Lebanon	Qualitative/extensive in-depth interviews	Emerging patterns of female business entrepreneurship in this analysis demonstrate that forced push entrepreneurship is more prevalent among women from a developing economy such as Lebanon than in the industrially advanced USA. By contrast voluntary pull entrepreneurship claims more global validity as discovered in the US business culture.

Ghose, S., McElwee, G., Meaton, J. and Durrah, O. 2017	Female entrepreneurship	57 rural women entrepreneurs registered as business owners in the rural areas of Dhofar, Omani entrepreneurs participated in structured questionnaire and 5 case studies through an open-ended interview	Mixed Methodology (Quantitative: survey design and Qualitative: open ended interviews and case studies)	The findings exhibit socio-cultural concerns which hamper women entrepreneurial venture creations and their subsequent success. The findings of the research are discussed using the three dimensions of entrepreneurship identified by Wenneker and Thurik (1999). The three dimensions are: conditions leading to entrepreneurship, characteristics of entrepreneurship and outcomes of entrepreneurship.
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Table 2. 6: Country research – gender and religiosity

Country/Region	Number of research items	Percentage
Arab world	3	11%
Bahrain	1	4%
GCC	2	7%
Jordan	2	7%
Lebanon	1	4%
Middle East	5	19 %
Oman	1	4%
UAE	8	30%
Saudi Arabia	3	11%
Tunisia	1	4%
Total	27	

2.6.4 Institutional entrepreneurship

Entrepreneurship has a major role in promoting innovation. Innovation drives firms and institutions during critical and uncertain times to compete and to gain competitive advantage (Arshi and Burns, 2018). The number of studies in this sub-section was n=7. Five studies used qualitative methodology and two studies used quantitative methodology. Table 2.7: Institutional entrepreneurship presents the institutional entrepreneurship studies.

Entrepreneurial architecture is an important driver of start-ups. Entrepreneurial architecture (EA) is a multidimensional framework that measures firms' innovation outputs. The EA is measured by four entrepreneurial dimensions: entrepreneurial culture, entrepreneurial structure, entrepreneurial strategies, and entrepreneurial leadership (Arshi and Burns, 2018). According to Arshi and Burns (2018) the relationship between entrepreneurship and innovation in large Omani firms is influenced by entrepreneurial architecture. The authors conclude that firms can maintain entrepreneurship in their organizational structure and entrepreneurship is an antecedent of innovation.

Scholars have developed Entrepreneurial Orientation Theory to evaluate firms' entrepreneurship (Covin and Lumpkin, 2011). For Martens et al. (2016), they argue that there is a lack of research on entrepreneurial orientation for the Middle East/Arab region. One study examines the impact of network capability on small enterprises through entrepreneurial orientation and knowledge creation (Zacca et al., 2015). The study shows that entrepreneurial orientation positively impacts small businesses.

Institutions not only maintain entrepreneurship internally but can also help in developing entrepreneurs (Bastian and Zali, 2016; Zacca et al., 2015). Bastian and Zali (2016) study the role of the quality of institutions in developing social network choices for

entrepreneurs in the Middle East and North Africa. The study tests the relationship between social networking and entrepreneurs' performance. It suggests that institutional quality is positively correlated with entrepreneurial performance and social network choices. In another study, Bastian and Tucci (2017) investigate the important antecedents of entrepreneurs' options toward social relations in the Middle East and North African (MENA) countries. They concluded that as the entrepreneurs' ventures age their social interactions decline.

Governments have a critical role in promoting firms' and institutional entrepreneurship (Erogul, 2014; Hvidt, 2013). Nasra and Dacin (2010) examine the role of the state as institutional entrepreneur in the UAE. Dubai was used as a case study. The authors adopt International Entrepreneurship and Institutional Theory. The study argues that the state can act as both an entrepreneur and institutional entrepreneur. The authors explain that due to the monarchical system in the UAE, some individuals can represent the state as entrepreneurial actors. Similarly, the state can act as institutional entrepreneur by developing institutional infrastructure to promote entrepreneurial opportunities for international entrepreneurs.

For governments to promote entrepreneurship, they must lower the bureaucracy in business registrations and improve regulations and policies (Sadi and Al-Ghazali, 2010). For example, in Al-Mataani et al.'s (2017) study on hidden entrepreneurs in Oman they define hidden entrepreneurship as business owners who "unofficially collaborate in a business partnership that is registered solely under the passive local entrepreneur's name, but is unofficially owned and operated by the international hidden entrepreneur" (p.327). The authors demonstrate that hidden entrepreneurs took advantage of weak regulations and policies to succeed.

Table 2. 7: Institutional entrepreneurship

Author	Theory	Sample	Methodology	Findings
Arshi, T. and Burns, P. 2018	Entrepreneurial architecture	580 large firms based on an Institutional Standards Classification by Oman’s Chamber of Commerce and Industry	Quantitative/ Survey Design	The results confirmed that entrepreneurship is a precursor to innovation. The EA framework, through its four dimensions: <i>entrepreneurial culture, entrepreneurial structure, entrepreneurial strategies and entrepreneurial leadership</i> , creates a collaborative and complimentary intensity that promotes innovation outputs, which may not be possible from the isolated effects of individual factors.
Bastian, B. L. and Zali, M. R. 2016	Social networks, entrepreneurial performance, institutional theory	11,823 early stage and established entrepreneurs for the years 2010–2012 covering 13 MENA countries, notably Algeria, Egypt, Iran, Jordan, Lebanon, Morocco, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey, UAE, and Yemen from two data sources: (1) the Global Entrepreneurship Monitor (GEM)	Quantitative/ Survey Design	The results of this study reveal that institutional quality is positively correlated with entrepreneurial performance, as well as with social network choices. This research confirms that entrepreneurs use strong social ties to offset deficiencies from a suboptimal institutional. This study reveals that individuals, such as entrepreneurs, who feel less assured about the willingness of other individuals to enforce their rights, will most likely continue to rely on the tradition of strong ties even when institutional settings change for the better.

		(2) the International Country Risk Guide (ICRG)		
Naguib, R. and Jamali, D. 2015	Female entrepreneurship, institutional theory	15 female entrepreneurs and five male partners in the UAE	Qualitative/in-depth interviews	Micro-level factors through push and pull factors are incentivizing females to seek entrepreneurship, while UAE female entrepreneurs face meso and micro level factor constraints to seek entrepreneurship: restricted access to network and capital to patriarchal religious interpretations and cultural norms that disapprove of a purely independent and emancipated role for women in business.
Tlaiss, H. A. 2014	Female entrepreneurship	30 Muslim women entrepreneurs from 4 countries: 20 from UAE, 4 from Lebanon, 4 from Kuwait and 2 from Oman	Qualitative/in depth semi-structured interviews	The results portray how Islamic work values and ethics are embedded in the entrepreneurial activities of these Arab women. The results also illustrate how Muslim women entrepreneurs seek well-being (falah) in their life and excellence (itqan) in their work while running their businesses.
Al-Mataani, R., Wainwright, T. and Demirel, P. 2017	Informal entrepreneurship, institutional theory	38 interviews with senior and middle manager level public officials who were recruited from a number of government agencies that are considered to be the key supporting	Qualitative/semi-structured interviews/document analysis (policy analysis)	The study provided evidence on how hidden entrepreneurs persist in utilizing the prevailing institutional configurations, such as weak regulations and policies at the regulative level, anti-entrepreneurship societal mindset at the normative level, and deficiencies in business knowledge and skills amongst passive entrepreneurs at the cognitive level.

		agencies for SMEs in Oman. The sample included active entrepreneurs from various businesses, along with other stakeholders including bankers, academics, support programs managers, consultants, venture capitalists, and business associations.		
Nasra, R. and Dacin, M.T. 2010	Institutional theory	1 case study Dubai, UAE	Qualitative/case study	They argued that the states can act as both entrepreneurs, recognizing opportunities in their environment, as well as institutional entrepreneurs, crafting the institutions required to capitalize on these opportunities.
Kalafatoglu and Mendoza 2017	Institutional and Social Network Theory	25 interviews with women entrepreneurs from Turkey, Morocco, Egypt, Saudi and Lebanon	Qualitative/semi-structured interviews	The results indicate that being a woman entrepreneur in a highly patriarchal society limits entrepreneurial activities due to culture and social norms. However, networking appears as the key factor for these women entrepreneurs to overcome the barriers that they face, such as access to capital, financial information, resources, and new business opportunities.

2.6.5 Networks, Psychological and Cognitive factors

Studies in this sub-section use and test cognitive and psychological behavior theories that can affect or may affect entrepreneurship and entrepreneurs. The most used theories are the Theory of Planned Behavior, Entrepreneurial intention, Entrepreneurial motivations, Social Network and Social Capital. TPB, Entrepreneurial Motivation and Entrepreneurial intentions (see Table 2.8: TPB, Entrepreneurial Intention and Motivation) and Social Networks, Social Capital, and Human Capital (see Table 2.9: Human Capital, Social Networks and Social Capital).

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) by Azjan (1991) was used in seven articles which represents 13% of the total articles yielded in the review. Some of the studies test the TPB in addition with other theories. The theory of Planned Behavior explains the factors that affect intentions. Azjan (1991) explains that the intention of a person to conduct a behavior comes before this planned behavior. There are three factors that affect intention: attitude toward behavior, subject norms and perceived control.

Perceived behaviour and the ability to perceive control facilitate entrepreneurship and venture outcomes. In their study, Belwal et al. (2015) report that Omani students' perception of entrepreneurship was high, but the intention was affected by perceived behavior control, specifically, fear of failure. In Aloulou's (2015) study, he added a gender variable to the TPB, in order to assess the influence of gender difference on Saudi freshman students' entrepreneurial intentions. Similarly, Aloulou (2016b) affirm that Saudi students' entrepreneurial intention is affected by perceived attitude, perceived self-efficacy and social norms. In an earlier study, Aloulou (2015) added that perceived social efficacy has the greatest

influence on students' entrepreneurial intention. Another study supporting TPB was conducted by Aloulou (2017). He studied the entrepreneurial intentions and behaviors of Saudi distance learners. The author concludes that behavior and perceived behavioral control are affiliated with positive entrepreneurial intentions.

Some research fuses TPB and complementary theories. For example, Subrahmanian et al. (2017) study the factors affecting students' intention in higher education institutions in Oman. The researchers used two theories: the TPB and Entrepreneurial Intention. They conclude that attitudes, subjective norms, and perceived behavior control predict entrepreneurial intentions. TPB cannot measure the change of events for an entrepreneur, such as unemployment or war (Touzani et al., 2015). Touzani et al. (2015) combined the TPB with Shapero and Sokol's (1982) Entrepreneurial Event Model. They investigate the elements of TPB with changes of events in Tunisia. The authors affirm the general situation of Tunisia post-evolution and that cultural factors impact entrepreneurial intentions. Government policy should harness and promote entrepreneurial attitude and activity (Erogul, 2014).

Entrepreneurial Intention

Entrepreneurial intentions have been widely studied by scholars (Ajzen, 1991; Davidsson, 1995; Krueger and Brazeal, 1994; Krueger and Carsrud, 1993; Robinson et al., 1991; Shapero and Sokol, 1982), and these scholars developed entrepreneurial intentions models to help to understand the factors affecting entrepreneurs' intentions.

Internal and external factors can influence entrepreneurial intention. A particular internal factor that influences entrepreneurial intentions is personal values or moral levels, but there is a lack of research focusing on personal values that link to entrepreneurial intention (Tipu and Ryan, 2016). Tipu and Ryan (2016) based their study on the work of Miller et al

(2002), who studied the multidimensional work ethic in relation to entrepreneurial intentions. The study concludes that there is a link between work values and entrepreneurial intentions. As such, Aloulou (2016a) shows the effects of personal background on entrepreneurial attitudes on Saudi freshmen students.

A large research focus represents addressing the combined effects of internal and external factors. That is, Thomson and Minhas (2017) examine the motivational and environmental factors influencing the entrepreneurial intentions of Emirati undergraduates. The authors use Liñán et al.'s (2011) and Liñán (2005) Entrepreneurial Intention Questionnaire (EIQ) to test the effects of social and cognitive values on the Emirati students. The EIQ integrates three intentional models: TPB, EEM and Bandura and Walters's (1977) social cognition theory. Thomson and Minhas (2017) found that environmental factors were positively correlated with entrepreneurs' intentions, while perceived behavioural control (PBC) and attitude towards behavior from motivational factors were highly positively correlated with Emirati student entrepreneurial intentions. Additionally, Thomson and Minhas (2017) found that subjective norms had a low positive relation with intention. In another study, Abu Bakar *et al.* (2017) demonstrate the factors affecting Saudi start-ups. The authors show that education level, social status, fear of failure, personal traits and knowing an entrepreneur influence the intention to start a business. They conclude that Saudi individuals with a higher income, a higher level of education, a lower level of fear of failure and who view entrepreneurship as high social status are more likely to become entrepreneurs.

The combined effects of psychology and institutional factors facilitate entrepreneurship and innovation. In a pertinent study, Kebaili et al. (2017) show how entrepreneurial intentions of Qatari male students can be affected by psychological and institutional factors. The authors

define psychological factors as attitude towards change, risk avoidance, fear of failure and stress avoidance. They also define institutional factors as financial factors, market barriers and knowledge barriers. They suggest that three psychological factors and two institutional factors are related to entrepreneurial intentions. The related psychological factors to entrepreneurial intentions are risk avoidance, fear of failure and stress avoidance. The institutional factors that affect entrepreneurial intentions are knowledge barriers and financial barriers.

Another study by Mehtap et al. (2017) investigates the factors affecting Jordanian female business students' perceptions of entrepreneurship. The study identifies two main factors affecting entrepreneurs: external factors and internal factors. The internal factors are explained as self-efficacy, access to education, fear of failure, etc. The external factors are divided into macro factors like access to finance, while micro factors are areas like family and community. The results show that the education system, socio-cultural factors, and personal characteristics affect entrepreneurial intentions of Jordanian female students.

While previous studies research the entrepreneurial intentions of starting classical forms of businesses, Dutot, and Van Horne (2015) address the role and importance of digital entrepreneurship intention. The authors compare France and the UAE, and they develop a conceptual model for digital entrepreneurial intentions. The model consists of three constructs: agility, digital options, and entrepreneurial characteristics. Agility is divided into three groups: operational agility, partnering agility and customer agility. Digital options are the IT-enabled capabilities. The study concludes that agility is considered an important antecedent to the digital entrepreneurial process.

Entrepreneurial Motivations

Human motivations influence start-up (Almobaireek and Manolova, 2013). There are two types of motivations that drive an entrepreneur to start a business: economic and non-economic (Tlaiss, 2015). Studies of entrepreneurs' motivations in the review were mainly focused on female entrepreneurs and students (Almobaireek and Manolova, 2013; Bastian and Zali, 2016; Gupta and Mirchandani, 2018; Sadi and Al-Ghazali; Tlaiss, 2015; Zgheib, 2018).

In a study of young female Saudi entrepreneurs, Almobaireek and Manolova (2013) show that they are more likely to engage in entrepreneurial activities than Saudi males to achieve self-independence. The study concludes that the entrepreneurial intention of Saudi women is higher than men while their entrepreneurial motivation is lower than their male counterparts. On the other hand, Bastian and Zali (2016) show that education affects female entrepreneurial motivations more than male entrepreneurial motivations in the Middle East.

The climate, in particular the temperature, can influence entrepreneurial motivation. Indeed, Janssen and Van der Vegt's (2016) studied how the climate impacts entrepreneurs' decisions to launch a new venture. They show that a hard climate, with a high temperature or cold temperature, and richer countries are easier for entrepreneurs to start a business. A study of female entrepreneurs in the UAE investigates entrepreneurial motivations as one of the personal factors (Gupta and Mirchandani, 2018). The study argued that personal motivations are divided into push and pull factors. The push factors are the situations that forced entrepreneurs to start businesses and the pull factors are associated with entrepreneurial aspirations and factors of choice (Tlaiss, 2015). In a related study, Zgheib (2018) defines the push factors as forced factors and pull factors as voluntary factors that influence entrepreneurship. Gupta and Mirchandani (2018) conclude that personal factors influence women entrepreneurs the most. On the other hand, Zgheib (2018) compared the push-pull

factor for female entrepreneurs between two different economies: developing; Lebanon and developed; America. The study affirms that forced factors, push factors, are stronger in developing countries than in developed countries, while the pull factors are stronger in developed countries than developing countries.

Entrepreneurial motivation can be influenced by education level and training (Almobaireek and Manolova, 2013; Bastian and Zali, 2016). In the MENA (Middle East and North Africa) region, a study by Bastian and Zali (2016) shows that opportunities motivate individuals with higher levels of education rather than necessities. The study also demonstrates that education level influences women's entrepreneurial motivations more than men's. Women entrepreneurs are found to be motivated by the opportunity of self-independence and self-achievement (Bastian and Zali, 2016; Gupta and Mirchandani, 2018; Sadi and Al-Ghazali, 2010).

Table 2. 8: TPB, Entrepreneurial Intention and Motivation

Theory	Author	Sample	Methodology	Findings
Theory of Planned Behavior	Belwal, R., Balushi, H. and Belwal, S. 2015	200 students from Sohar University's 5 faculties in Oman: Engineering, Art and Law, Business, Computing and IT and English studies.	Quantitative/ Survey Design	Willingness to take risks, a lack of know-how and fear of failure are obstacles for the Omani students to start a business. The authors did not find a relationship between students having a family business and their desire to start a business.
	Subrahmanian, M., Subramanian, K., Al-Haziazi, M. and Herimon, P. C. 2017	334 Omani prospective graduates from leading universities and colleges in Muscat, Oman	Quantitative/ Survey design	Personal attitudes, subjective norms and perceived behavioral control effectively for Omani students predicts entrepreneurial intent and has a positive and strong relationship.
	Aloulou, W. J. 2015	289 Saudi Students of Al Imam Mohammad Ibn Saud Islamic University	Quantitative/ Survey Design	Saudi Students are intended to start a business because of their perceived positive attitude toward starting a business and self-efficacy and social norm. Social norm has more influence than attitude on entrepreneurial intention. Saudi male students are found to exhibit a positive

				attitude towards entrepreneurship with a higher social norm and a higher entrepreneurial intention. Female students have higher self-efficacy than male students. But both are less self-confident to raise funds to start their businesses.
	Aloulou, W. J. 2016b	177 final-year business students of the College of Economics and Administrative Sciences at Al Imam Muhammad Ibn Saud Islamic University, Saudi Arabia	Quantitative/ Design Survey	Subject norms are highly associated with entrepreneurial intentions for Saudi students rather than attitude toward behavior and perceived behavioral control.
	Aloulou, W. J. 2016a	103 Saudi freshmen students of Al Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia	Quantitative/ Design Survey	Students' entrepreneurial intentions were high. Saudi students also possess high entrepreneurship attitudes. The study found a relationship between having a relative who is an entrepreneur and entrepreneurial intention and entrepreneurship training. Relatives as entrepreneurs and entrepreneurship training contribute to the development of an

				achieving attitude, personal control and an innovative attitude which influence EIs.	
	Aloulou, W. J. 2017	178 final-year distance business administration learners of the Deanship of E-learning and Distance Education at Al Imam Mohammad Ibn Saud Islamic University in Riyadh, Capital of Saudi Arabia	Quantitative/ Design	Survey	Behaviour and perceived behavioral control were significantly associated with the entrepreneurial intentions of Saudi distance learners. Distance business learners were committed to starting a business after thinking about it and perceiving that they have the needed skills, and they can perform those behaviors.
	Touzani, M., Jlassi, F., Maalaoui, A. and Hassine, R. B. H. 2015	38 interviews with new graduates in entrepreneurship from alumni networks of two major business schools in Tunis	Qualitative/ interviews	in-depth	Tunisians are willing to start their own businesses. Tunisians are optimistic toward the future and economic changes, where financial and governmental obstacles could be lifted. But their perceived risk was found to be very strong. Creating a firm is perceived as a hazardous task for them.
Entrepreneurial Motivation	Almobaireek, W.N., Manolova, T.S	856 undergraduate students at King Saud	Quantitative/ design/	Survey	Female university youth in Saudi Arabia are more likely than men to start an

	2013	University, Saudi Arabia		entrepreneurial venture out of necessity, whereas men are more likely to have a financial success motivation.
	Bastian, B. L. and Zali, M. R. 2016	15,551 entrepreneurs from 13 MENA countries: Algeria, Egypt, Iran, Jordan, Lebanon, Morocco, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey, United Arab Emirates and Yemen conducted by Global Entrepreneurship Monitor	Quantitative/ Survey Design	This study shows that education has a more positive effect on women's entrepreneurial motives compared with men. On the other hand, there is a greater positive effect of competencies on men's motives.
	Gupta, N., Mirchandani, A 2018	289 female successful entrepreneurs in the UAE	Quantitative/ Survey Design	The results suggested that the personal and environmental factors and government support affect positively and significantly to the success of women-owned SMEs in UAE.
	Sadi, M., Al-Ghazali, B. 2010	150 men and women supplied by the Eastern Region Chamber of Commerce Center at Dammam.	Quantitative/ Survey Design	The results reveal that self-achievement is the most motivational factor for businesswomen in Saudi Arabia. The barriers include a lack of market studies, a lack of governmental support, a lack of coordination among

				government departments, a lack of support from the community, society restrictions and the oligopolistic attitude of the investors.	
	Tlaiss 2015	20 local Emirati women entrepreneurs	Qualitative/ interviews	in-depth	The findings illustrate how the entrepreneurial motivations of Emirati women unfold in a complex interplay between pull (non-economic) and push (dissatisfaction) motivational factors within the Arab patriarchal and Islamic contexts, thus lending credence to the post-materialism, legitimation, and dissatisfaction theories, which collectively help explain the entrepreneurial motives of women in this context.
	Zgheib 2018	102 women entrepreneurs from the USA and Lebanon	Qualitative/ interviews	extensive in-depth	Emerging patterns of female business entrepreneurship in this analysis demonstrate that forced push entrepreneurship is more prevalent among women from a developing economy such as Lebanon than in the industrially advanced USA.

				By contrast voluntary pull entrepreneurship claims more global validity as discovered in the US business culture.
Entrepreneurial Intentions	Abu Bakar, A.R., Ahmad, S.Z., Wright, N.S., Skoko, H., 2017.	2000 Saudi entrepreneurs conducted by Global Entrepreneurship Monitor	Quantitative/ Design Survey	The study shows that entrepreneurship in Saudi Arabia is more likely among high income individuals with lower levels of fear of failure, who view entrepreneurship as high status among the community and are also embedded in social circles characterized by other entrepreneurs.
	Dutot, V. and Van Horne, C. 2015	10 interviews with French and Emirati digital entrepreneurs	Qualitative/Semi-structured interviews	Agility, entrepreneurial alertness and entrepreneurial characteristics influence entrepreneurial intentions.
	Kebaili, B., Al-Subyae, S. S. and Al-Qahtani, F. 2017	155 Qatari male students in the final year of a management bachelor degree	Quantitative/ design Survey	Qatari male students hold high entrepreneurial intentions. (Five entrepreneurial intention variables were significant: financial barriers, knowledge barriers, risk aversion, fear of failure and stress avoidance).

	Mehtap, S., Pellegrini, M. M., Caputo, A. and Welsh, D. H. B. 2017	254 female business students from two universities in Jordan	Quantitative/ Design	Survey	The study identified two main factors affecting entrepreneurs: external factors and internal factors. The internal factors: self-efficacy, access to education, fear of failure. The external factors are divided into macro factors like access to finance while micro factors are family and community. Jordanian female students participated.
	Thomson, G. S. and Minhas, W. 2017	74 Emirati undergraduate business students from the Higher Colleges of Technology (HCT)	Quantitative/ design	Survey	Emirati undergraduates hold high entrepreneurial intentions (motivational factors positively correlated with entrepreneurial intention: attitude towards behaviour, subjective norms, and perceived behavioural control) and (environmental factors: social valuation and closer valuation are positively correlated with entrepreneurial intentions).
	Tipu, S. A. A. and Ryan, J. C. 2016	309 UAE national students in senior classes in two large business colleges in the UAE.	Quantitative		The study found that there is a relationship between work values and entrepreneurial intentions.

Social Networks, Social Capital and Human Capital Human Capital

Human capital in the context of the Middle East in this review reflects a mere one article (AlShumaimri et al., 2012). The study shows that the number of scientific publications is positively related to scientific entrepreneurship and younger scientists are more likely to engage in entrepreneurial activities.

Social Networks and Social Capital

In this section social network and social capital studies will be discussed. One study in this review that covers social capital mainly focuses on women entrepreneurs' social capital (Baranik et al., 2018), and another study found studies scientific entrepreneurship (AlShumaimri et al., 2012). The review found six studies focusing on the subject of social networks (Abu Bakar et al., 2017; Bastian and Tucci, 2017; Bastian and Zali, 2016; Bertelsen et al., 2017; Kalafatoglu and Mendoza, 2017; Mehtap et al., 2018).

Like the established research on social networks and connectivity in the western context, Kalafatoglu and Mendoza (2017) argue that women entrepreneurs in Turkey, the Middle East and North Africa (Lebanon, Saudi Arabia, Morocco and Egypt) are less likely to use their networks effectively than their male counterparts. Bertelsen et al. (2017) argued that men are networking to seek advice in the public circle and women are networking to seek advice in the private circle in China, Iran, Saudi Arabia, Qatar, and the UAE. Mathew (2010) concluded that women's social networking is different from men's social networking in Oman and the UAE. He argued that women's social networking is tied toward family and personal interests. Bastian and Zali (2016) insisted that networking helps women entrepreneurs in enhancing their entrepreneurial journey.

Different ties influence entrepreneurship, that is, stronger and closer ties such as private connections with family and friends and weaker distant ties with public organisations and industry experts. Building on this, Bertelsen et al. (2017) define the public circle of an entrepreneur as the circle of members that surrounds him/her in the workplace, the professions, the market and the international environment, while the private circle of an entrepreneur is the circle of family and friends surrounding him/her. Mehtap et al. (2018) affirm that the social network of family and friends is one of the main sources for female entrepreneurs in Jordan to be successful. While Kalafatoglu and Mendoza (2017) affirm that social networks are important for female entrepreneurs in patriarchal societies like the Middle East to overcome social barriers.

The usage of strong private and weak public networks also differs by gender and country context. In a study focused on gendering of networks in the private and public spheres, Bertelsen et al. (2017) investigated the difference between the two spheres for females and males in the Gulf region and China. The authors use GEM data for China and five Gulf countries: Yemen, Iran, Saudi Arabia, Qatar, and the UAE. The study concludes that male entrepreneurs network more in public spheres, while female entrepreneurs are networking more in private spheres. The study also affirms that the size of the public and private spheres is different between the studied countries. The study finds that the size of public and private spheres in China are the same for men and women while in Qatar and Saudi Arabia men have a larger public sphere than women.

On the other hand, Bastian and Zali (2016) explain that social networks consist of formal and informal links. These links are also overlapped with weak and strong social ties (Bastian and Zali, 2016). They explain that weak ties are divided into international and

domestic ties. These ties are like what Bertelsen et al. (2017) call public spheres, while strong ties are individuals who share similar interests, backgrounds and experiences that are similar to private ties. In the MENA region entrepreneurs benefit from strong ties because of cultural issues and the quality of institutions (Bastian and Zali, 2016).

Social capital is developed through building trust and norms in networks. Cultural trust and the lack of quality institutions make MENA's entrepreneurs focus on strong social relations to seek advice and to access resources – this is like bonding homogeneous social capital and tapping into the strong trust of family and friends (Bastian and Tucci, 2017; Bastian and Zali, 2016). Bastian and Tucci (2017) explain how the choices of entrepreneurs to seek advice from sources depend on organizational conditions. Entrepreneurs use their social contacts to seek advice through their entrepreneurial process journey (Bastian and Tucci, 2017). They conclude that in the MENA region, unlike the western region, entrepreneurs seek private advice sources across all stages of their entrepreneurship ventures (Bastian and Tucci, 2017).

Using the social network of family and friends, Baranik et al. (2018) studied the role of “Wasta” and marital status on Tunisian women's entrepreneurship. They define wasta as by using social capital and their social network to gain advantage, to achieve goals and to access resources. The study concludes that social capital through wasta and marital status affect Muslim women's entrepreneurial performance. They found that married Muslim women entrepreneurs are more successful than unmarried Muslim women entrepreneurs. As Abu Bakar et al. (2017), cited from Cunningham and Sarayah (1993) and Tlaiss and Kauser (2011), wasta is like a glue and code that bonds close private relations in the Arab world and plays an important role for individuals in deciding career choices and starting up businesses.

Public networks and weaker connections with other entrepreneurs in industry can serve as role models. As such, Abu Bakar et al. (2017) studied the influence of social networks on entrepreneurial intentions. The authors affirm that individuals who know a successful entrepreneur are more likely to start a business. The authors consider the successful entrepreneur as a role model for the individual who intends to start a business.

One study tests the social capital correlation with scientific entrepreneurship (Alshumaimri et al., 2012). Thus, Alshumaimri et al. (2012) investigated the role of scientists' social capital in entrepreneurship, for example, engaging in board of directors' activities or research related to the industry needs (Alshumaimri et al., 2012). Surprisingly, they suggest that there is little link between social capital and scientific entrepreneurship.

Table 2. 9: Human Capital, Social Networks and Social Capital

Theory	Author/s	Sample	Methodology	Findings
Human Capital	Alshumaimri, A., Aldridge, T. & Audretsch, D.B 2012	288 scientists from three Saudi universities (King Abdulaziz University, King Fahad University and King Saud University)	Quantitative/ Survey design	The study found that the number of scientist publications is positively related to scientists' entrepreneurship and the younger scientists are more likely to engage in entrepreneurial activities.
Social Capital	Alshumaimri, A., Aldridge, T. & Audretsch, D.B 2012	288 scientists from three Saudi universities (King Abdulaziz University, King Fahad University and King Saud University)	Quantitative/ Survey design	The study found that the number of scientist publications is positively related to scientist's entrepreneurship and the younger scientists are more likely to engage in entrepreneurial activities.
	Baranik, L. E., Gorman, B. and Wales, W. J.2018	84 female entrepreneurs participating in entrepreneurship training programs across Tunisia	Quantitative/ Survey Design	Social capital (wasta) is a critical asset for Tunis Muslim women entrepreneurs.
Social Network Theory	Abu Bakar, A.R., Ahmad, S.Z., Wright, N.S., Skoko, H., 2017	2000 Saudi entrepreneurs, conducted by Global Entrepreneurship Monitor	Quantitative/ Survey /Secondary Data (GEM)	The research shows that knowing other entrepreneurs is positively and significantly related to starting a business in Saudi Arabia. Wasta (social network) is an important element for Arab entrepreneurs in their entrepreneurial journey.
	Kalafatoglu, T. and Mendoza, X. 2017	25 interviews with women entrepreneurs from Turkey, Morocco, Egypt,	Qualitative/ Semi-structured interviews	Networking appears as the key factor for these women entrepreneurs to overcome the barriers that they face, such as access to capital, financial information,

		Saudi and Lebanon		resources, and new business opportunities.
	Bertelsen, R.G., Ashourizade, S., Jensen, K.W., Schott, T., and Cheng, Y. 2017	16,365 Global Entrepreneurship Monitor (GEM) for China and Yemen, Iran, Saudi Arabia, Qatar and the United Arab Emirates.	Quantitative/ Survey Design	Female entrepreneurs have a larger private network than male entrepreneurs, while male entrepreneurs have a larger public network.
	Mehtap, S., Ozmenekse, L., Caputo, A., 2018	14 female informal entrepreneurs in Amman, Jordan.	Qualitative/ Semi-structured in-depth interview	A lack of a social network and business skills are the main challenges for Jordanian female informal entrepreneurs in starting/running their businesses.
	Bastian, B.L. and Zali, M.R. 2016	11,823 early stage and established entrepreneurs for the years 2010–2012 covering 13 MENA countries, notably Algeria, Egypt, Iran, Jordan, Lebanon, Morocco, Pakistan, Saudi Arabia, Syria, Tunisia, Turkey, UAE, and Yemen from two data sources: the Global Entrepreneurship Monitor (GEM) and the International Country Risk Guide (ICRG)	Quantitative/ Survey Design	Social networks and social relations consist of formal and informal links that the entrepreneurs maintain: family, friends, business and other contacts. The authors found that institutional quality is negatively correlated with strong network ties such as family.

	Bastian, B.L., and Tucci, C.L. 2017	13,251 of future start-ups (prospective entrepreneurs), start-ups and owner-managers of operating businesses from 13 Middle East and North African (MENA) countries	Quantitative/ Survey Design	Social networks give access to resources, information and social status. This study shows that social interactions decline in quantity the more the venture progresses in age.
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2.6.6 Entrepreneurship in Countries

This sub-section will identify the patterns and trends of entrepreneurship articles in different Gulf and Middle Eastern countries. The review targets countries that have similarities to Kuwait in terms of language and social practices or are geographically close to Kuwait. The target countries are presented in the Keywords (see Table Chapter 2.1.)

The UAE and Saudi Arabia are the most studied countries. These two countries represent 55% of all the studies in the review. The review did not yield any article for entrepreneurship in Kuwait and Bahrain. Table Chapter 2.10: Country focus presents the number of studies in the review for each country and region.

The UAE has the greatest number of articles in the review. The UAE accounts for 30% of the total studies. The number of articles is 17 out of 55. Gender entrepreneurship studies were the most studied subject for the UAE. The number of gender studies is 8 out of 17 – that is 47% of the UAE's focused studies. The UAE gender studies mainly focus on female entrepreneurial intentions and motivations (Barragan et al., 2018; Bodolica and Spraggon, 2015; Gupta and Mirchandani, 2018; Jabeen and Faisal, 2018; Jabeen et al., 2015; Jose, 2018; Naguib and Jamali, 2015; Tlaiss, 2015). The rest of the studies focus on entrepreneurial intentions, entrepreneurship in education, TPB, technology transfer offices, institutional entrepreneurship, entrepreneurial orientation, and the effect of environment on entrepreneurship (Dutot and Van Horne, 2015; Erogul, 2014; Iqbal et al., 2018; Jabeen et al., 2017; Nasra and Dacin, 2010; Thomson and Minhas, 2017; Tipu and Ryan, 2016; Van de Vliert et al., 2016; Zacca et al., 2015).

Saudi Arabia is the second most researched country in the review. The number of Saudi entrepreneurship studies is 13 out of 55. The studies in the context of Saudi Arabia focus on

entrepreneurship in education. There are five studies that investigate student entrepreneurial intentions and motivations (Almobaireek and Manolova, 2013; Aloulou, 2016a; Aloulou, 2015; Aloulou, 2016b; Aloulou, 2017). There are also two studies focusing on scientist entrepreneurship (Alshumaimri et al., 2010 and 2012). Four gender entrepreneurship studies are identified (Alkhaled and Berglund, 2018; Almobaireek and Manolova, 2013; Sadi and Al-Ghazali, 2010; Welsh et al., 2014).

Oman appeared in five articles in the review. Two of the articles focus on students' entrepreneurial intentions and perception of entrepreneurship (Belwal et al., 2015; Subrahmanian et al., 2017). One article addresses female entrepreneurship, another studies institutional entrepreneurship and the last one studies informal entrepreneurship (Arshi and Burns, 2018; Ghouse et al., 2017; Al-Mataani et al., 2017).

Jordan appears twice in the review. The two articles study female entrepreneurship (Mehtap et al., 2019; Mehtap et al., 2017). Lebanon and Qatar appear once in the review. The Lebanese article explains female entrepreneurship and the Qatari article addresses the entrepreneurial intentions of Qatari students (Kebaili et al., 2017; Zgheib, 2018). Tunisia appears twice in the review. The first article researches entrepreneurial motivations and the second female entrepreneurship (Baranik et al., 2018; Touzani et al., 2015).

The MENA region is studied in eight articles. Most of these studies research female entrepreneurship. The number of female entrepreneurship studies is five out of eight. The rest of the studies represent entrepreneurship orientation, institutional entrepreneurship, and how social networking influences entrepreneurship in the region (Bastian and Zali, 2016; Bastian et al., 2018; Kalafatoglu and Mendoza, 2017; Mathew, 2010; Saviano et al., 2017).

The Arab and the GCC region reflect three studies each. The Arab region studies focus on female entrepreneurship (Ameen and Wills, 2016; Tlaiss, 2014; Panda, 2018). The GCC region studies emphasized female entrepreneurship and networking effects (Bertelsen et al., 2014; Faisal et al., 2017).

Table 2. 10: Country Focus

Country/Region	Number of research studies	Percentage
Arab	3	5%
GCC	3	5%
Jordan	2	4%
Lebanon	1	2%
MENA	8	15%
Oman	5	9%
UAE	17	31%
Qatar	1	2%
Saudi Arabia	13	24%
Tunisia	2	4%
Total	55	100%

2.6.7 Current State of Research and Landscape

The systematic literature review reveals a paucity of research on Kuwait. Entrepreneurship is an under-researched academic discipline not only in Kuwait, but also in the MENA region. The studies in this systematic literature review focused on six entrepreneurship-related subjects: (1) student entrepreneurship and entrepreneurship in higher education; (2) technological, scientific and academic entrepreneurship; (3) gender and religiosity entrepreneurship; (4) institutional entrepreneurship; (5) network, psychological and cognitive factors; and (6) entrepreneurship in countries. Many of these studies used secondary data, such as the Global Entrepreneurship Monitor, and recruited students as their study sample

(Bastian and Zali, 2016; Bertelsen et al., 2017; Abu Bakar et al., 2017; Kebaili et al., 2017; Mehtap et al., 2017).

Student entrepreneurship and entrepreneurship in higher education studies investigate the factors affecting students' entrepreneurial intention or perceptions of entrepreneurship. While a large proportion of these studies widely adopted the theory of planned behavior (Aloulou, 2016b; Aloulou, 2015; Belwal et al., 2015; Faisal et al., 2017) the rest of these studies have adopted either entrepreneurial intention theories or motivation theories. Studies that adopted entrepreneurial intention focus on the relationship between entrepreneurial intentions, work values (Tipu and Ryan, 2016), personal background (Aloulou, 2016a) and motivational and environmental factors (Thomson and Minhas, 2017), while studies that adopted entrepreneurial motivation focus on the relationship between entrepreneurial motivation, human motivations (Almobaireek and Manolova, 2013), economic and non-economic factors (Tlaiss, 2015), female entrepreneurs and students (Bastian and Zali, 2016; Gupta and Mirchandani, 2018; Sadi and Al-Ghazali; Tlaiss, 2015; Zgheib, 2018). However only three studies were identified on technological, scientific, and academic entrepreneurship (Alshumaimri et al., 2012; Alshumaimri et al., 2010; Iqbal et al., 2018). Gender and religiosity entrepreneurship studies are the main focus of researchers in the MENA/Arab/GCC region, accounting for 50% of systematic research studies.

Gender and religiosity entrepreneurship focuses on female entrepreneurship, and female entrepreneurship coupled with religiosity entrepreneurship. Institutional entrepreneurship is another under-studied subject, with the systematic review yielding only seven studies (Arshi and Burns, 2018; Bastian and Zali, 2016; Naguib and Jamali, 2015; Tlaiss, 2014; Al-Mataani et al., 2017; Nasra and Dacin, 2010; Kalafatoglu and Mendoza, 2017). Most

of them used qualitative methods and recruited females in the study sample. Network, psychological and cognitive factor studies are mainly testing four theories: the theory of planned behavior, entrepreneurial intention, entrepreneurial motivations, and social networks. Most of them used either a female or student sample. Studies on entrepreneurship in countries mainly focus on the United Arab Emirates (UAE) and Saudi Arabia, while no study covering Kuwait's entrepreneurship has been found.

Several studies in the review relied on student and female samples, affecting the generalizability of the findings (Tipu and Ryan, 2016; Barragan et al., 2018; Bodolica and Spraggon, 2015; Gupta and Mirchandani, 2018; Jabeen and Faisal, 2018; Jabeen et al., 2015; Jose, 2018; Naguib and Jamali, 2015; Tlaiss, 2015; Bertelsen et al., 2017; Welsh et al., 2014). Highly ranked articles relied on secondary data or qualitative methods (Nasra and Dacin, 2010; Al-Mataani et al., 2017; Barragan et al., 2018; Tlaiss, 2014; Van de Vliert et al., 2016).

Bastian et al. (2018) claim that, in general, theoretical foundations in entrepreneurship studies are lacking. While a considerable amount of research has focused on entrepreneurial intention or motivation (Tipu and Ryan, 2016; Bastian and Zali, 2016; Almobaireek and Manolova, 2013; Gupta and Mirchandani, 2018; Sadi and Al-Ghazali, 2010; Tlaiss, 2015; Zgheib, 2018; Abu Bakar et al., 2017; Dutot and Van Horne, 2015; Kebaili et al., 2017; Mehtap et al., 2018; Thomson and Minhas, 2017) Tipu and Ryan (2016) claim that there is a paucity of research linking personal characteristics with entrepreneurial intention.

Alshumaimri et al. (2012) suggested a lack of research pertaining to science entrepreneurship in the Middle East and Gulf contexts. Zahra (2011) called for researchers to investigate the role of Arab countries in promoting innovation and entrepreneurship as large-scale empirical studies on organizations in the Arab region are limited. Autio et al. (2014) posit

that entrepreneurial innovation can differ in country, region and industry. Some studies generalized their findings to the entire MENA region; however, there are differences in wealth level skills and resources among countries such as Kuwait, Saudi Arabia, the UAE, Egypt, Morocco and Tunisia (World Bank, 2020; Zahra, 2011; Jose, 2018; Bastian and Zali, 2016; Bertelsen et al., 2017; Tlaiss, 2014). According to Arshi and Burns (2018), very little research considers the evolution of entrepreneurial innovation in the MENA and Gulf region, and also, the patterns and combinations of context within which innovation takes place.

2.7 Conclusion

The systematic literature review research demonstrated the scarcity of research covering Kuwaiti entrepreneurs' intentions and motivations of starting technology related ventures. Because of this limitation, the research was expanded to include other neighboring regions. The same applied to other regions; there was a paucity of studies covering entrepreneurs' intentions and motivations of starting technology related ventures. Again, the research was expanded to include all the entrepreneurship subjects.

The research yielded articles investigating entrepreneurship that focus on gender, religiosity, country specificity and education. The gender entrepreneurship studies focused on female entrepreneurship in specific countries. The religiosity entrepreneurship articles studied the influence of religion on female entrepreneurs in managing and starting their entrepreneurial journey. The country's specific entrepreneurship articles focused on encouraging and promoting entrepreneurship in specific countries such as Saudi Arabia and the UAE. The education articles studied how to promote entrepreneurship to students, the factors affecting students' entrepreneurial intentions and motivations and scientific entrepreneurship at universities. The conceptual framework and hypotheses will be discussed in the next chapter.

Chapter.3 Theoretical Framework and Hypotheses

3.1 Introduction

One of the major factors driving economic growth is innovation (Autio et al., 2014; Jin, 2007; Metcalfe, 2001; Aldieri et al., 2021; Ahlin et al., 2014). Innovation can be a product of either organizations or individuals who turn it into businesses. Autio et al. (2014) argue that there is a difference between innovation and entrepreneurship. They add that not all entrepreneurs can be innovators and claim that most of new ventures are not innovative. The Global Entrepreneurship Monitor (GEM) survey reports that less than 30% of new businesses revealed introducing new products to their markets and most entrepreneurial countries are the poor and less developed countries, while the most innovative countries are the richer and more developed countries (Binder, 2013; Reynolds et al., 2005; Bosma et al., 2008; cited in Autio et al., 2014). Autio et al. (2014) also argue that “Innovation is associated with activities taking place at technological frontiers, leading to equating innovation narrowly with invention” (p.1099). This chapter presents the conceptualisation of innovation and hypotheses pertaining to effects of entrepreneurial contextual dimensions on different types of innovation, and consequently, uncovering the multiplicity and complexity of entrepreneurship in Kuwait.

3.2 Entrepreneurial Innovation and Contextual Influences

Innovation is one of the factors that affects firm performance (Stearns and Hills, 1996, cited in Kickul and Gundry, 2002). Accordingly, Forbes (2005) suggests that performance of new ventures is linked with their managers' or founders' cognitive characteristics. Small and medium businesses or new businesses, because of their size and age, tend to provide their managers with a great level of freedom to make decisions (Hambrick and Finkelstein, 1987, cited in Forbes, 2005). Gardner (1994, cited in Kickul and Gundry, 2002) argues that

innovation is an effective vision to meet market needs. Meeting market needs is considered a competitive advantage. Competitive advantage is considered a major pillar of innovation (Baumol, 2002, cited in Autio et al., 2014). Maintaining competitive advantage is done through continually searching for innovative ideas (Lichtenthaler and Muethel, 2012, cited in Craig et al., 2014). Furthermore, maintaining market competitiveness requires continuous improvement and experimentation of products, services and processes (Krueger Jr. and Dickson, 1994; March, 1991).

This research adopted a contextual framework to contextualize the factors affecting entrepreneurial innovation (Autio et al., 2014; Zahra et al., 2014; Sarasvathy and Venkataraman, 2011; Venkatesh et al., 2016). Zahra et al. (2014) argue that contextualization permits researchers to understand their work through different microprocesses. Johns (2006, cited in Venkatesh et al., 2016, p.340) defined context as “situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables”.

Innovation is considered the core of entrepreneurship (Covin and Miles, 1999; Schumpeter, 1934; Kollmann and Stöckmann, 2014). Schumpeter (1939) defines innovation as the introduction of a new product, process or service; he also insists that without innovation, there are no entrepreneurs. The essence of competitive advantage is entrepreneurial innovation (Baumol, 2002, cited in Autio et al., 2014). In contrast, innovation is defined by Rogers (1995) as “an idea, practice or object that is perceived as new by an individual or other unit of adoption” (p.11). Straub (2009) insists that an innovative idea may not be new or beneficial; instead, it is the individual perception of newness. The individual perception of newness is the judgement for whether the innovative idea will be better than other ideas in the market.

Bandura (1997) argues that innovativeness “largely involves restructuring and synthesizing knowledge into new ways of thinking and of doing things” (p.239). Contrarily, Baron and Tang (2011) insist that creativity plays a major role in innovation. Stopford and Baden-Fuller (1994, cited in Covin and Miles, 1999) argue that innovations are the products of all types of entrepreneurships.

However, to understand entrepreneurial behavior leading to innovation, the study adapts Kollmann’s and Stöckmann’s (2014) theory of innovation. The theory differentiates innovation into one of two types: *exploratory* and *exploitative* innovation. Kollmann’s and Stöckmann’s (2014) scale is adapted originally from Jansen et al. (2006) and Lubatkin et al. (2006). The scale consists of four items for exploratory innovation, which are: “We always accept demands that go beyond existing goods and services, we regularly approach new opportunities in new markets, we regularly experiment with new products and services in existing markets and we perpetually develop creative ways to satisfy customer needs” and three items for exploitative innovation, which are: “We continuously improve the efficiency of the creation of goods or services, we perpetually reduce the costs of the creation of goods or services without quality loss and we continuously increase the levels of automation in the creation of goods or services.” The scale has been adapted by number of studies investigating exploratory and exploitative innovations (Ko and Liu, 2019; Xue and Swan, 2020). Kollmann and Stöckmann (2014) claim that there is not a major scale for exploration and exploitation innovations.

The concept of exploration and exploitation was initiated by March (1991). The author defines exploration as “things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation” (p.71) and exploitation as “such

things as refinement, choice, production, efficiency, selection, implementation, execution” (p.71). Likewise, Kollmann and Stöckmann (2014) and Kuckertz et al. (2017) explain that exploratory innovation is about the development and commercialization of new products or services, while exploitative innovation is about improving existing processes, technologies, products or services. But it is argued that each type of innovation requires different knowledge and organizational practices (March, 1996, cited in Kollmann and Stöckmann, 2010).

Exploration activities are expected to generate new knowledge, while exploitation activities are expected to enhance the current knowledge for firms (Ahsan et al., 2022). Cai et al. (2021, p.1366) explain that exploratory innovation is linked with search, experiment, and novelty, while exploitative innovation is about efficiency, scale of economy and improvement. March (1991, cited in Hong et al., 2018) suggests that exploration innovations are more likely to fail than exploitation innovations. March (1991) adds that it is not easy for organizations to add a new market, produce a new product or adapt new technology.

Researchers suggest that the *two types* of innovations can help in accessing important resources and generate different impacts on ventures (Ozer and Zhang, 2015; Kammerlander et al., 2015, cited in Cai et al., 2021). Ahsan et al. (2022) note that exploration and exploitation activities complement each other and will lead to firm innovation. Conversely, studies have found that small businesses can perform both types of innovation: exploration and exploitation (Voss and Voss, 2013; Chang and Hughes, 2012; Ebben and Johnson, 2005; He and Wong, 2004, cited in Soetanto and Jack, 2018).

To explain *contextual influences* on the *two types* of entrepreneurial innovation, I adopt highly relevant multiple contextual dimensions based on Autio et al’s (2014) approach that occur across time and space. For Autio et al (2014), it is combinations of contextual conditions

such as technology, entrepreneurial behavioral microfoundations and social relations in specific geographical regions and space that underline entrepreneurial innovation. Scholars suggest that time and location are important influential factors for entrepreneurship (Wadhvani et al., 2020; Shirokova et al., 2022; Dahl and Sorenson, 2009). However, Wadhvani et al. (2020) contend researchers should consider that time in entrepreneurship contexts is flexible. Finally, spatial contexts are explained, as geographic location influencing a firm's processes.

The *technology* context is adopted from Autio et al. (2014) and Welter (2011). Information Technology (IT) is considered to be one of the important tools or components for facilitating innovation (Zhang et al., 2016). New ideas produce technological innovations that subsequently transform into products, services or processes (Kleis et al., 2012). Wheadon and Duval-Couetil (2019) assert that technological context influences entrepreneurship. In this regard, this research is contextualizing technology adoption to test its influence on innovation.

Autio et al. (2014) explain that “perceptions of feasibility and desirability would ultimately reflect contextual factors rather than individual-specific characteristics” (p.1100). Zahra et al. (2014) and Autio et al. (2014) stress the importance of studying *entrepreneurial behavioral microfoundations* as a context. In this context, this research investigates entrepreneurial passion, entrepreneurial self-efficacy, entrepreneurial proactiveness, need for cognition and entrepreneurial resilience. These individual level characteristics are considered as important influential factors for entrepreneurial behaviors and entrepreneurial innovations (Bandura, 1977; Shane and Venkataraman, 2000; Moore, 1986; Bird and Schjoedt, 2017).

Additionally, following Welter (2011), Autio et al. (2014) and Zahra et al. (2014), the *social context* is adopted in this research. Henry and Lewis (2023) assert that social context explores entrepreneur's network relationships and networking behavior. Additionally, the

exploitation of social networks is considered an important element in the success of entrepreneurs (Leyden et al., 2014; Huang et al., 2020). As a result, the role of *wasta*, like the Chinese *guanxi*, is investigated as social relationship context (Huang et al., 2020).

As regards the identification and integration of new dimensions to augment Autio et al.'s (2014) frame, then, *subjective wellbeing context* seems appropriate to weave and is influenced by Diener and Ryan's (2009) explanation of subjective wellbeing. Diener and Ryan (2009, p.391) explain that subjective wellbeing is an "umbrella" encompassing health, happiness and affect (positive and negative). The context is adapted from Pathak (2021). The author explains that wellbeing is classified into two classifications: physiological and psychological. Accordingly, physiological pertains to an "individual's physical state" and the psychological category pertains to hedonic wellbeing that is concerned with emotions and happiness, and eudaimonic wellbeing that is concerned with life satisfaction (p.1994).

As a result, entrepreneurial innovation will be studied through the *lens* of the following crucial and relevant contexts: technology; subjective well-being; entrepreneurial behavioral microfoundations; and social relations. Accordingly, figure 3.1 and figure 3.2 represent the framework and predicted exploratory and exploitative innovation process.

Figure Chapter.3.1: Conceptual Framework Exploratory Innovation (adapted from Autio et al, 2014)

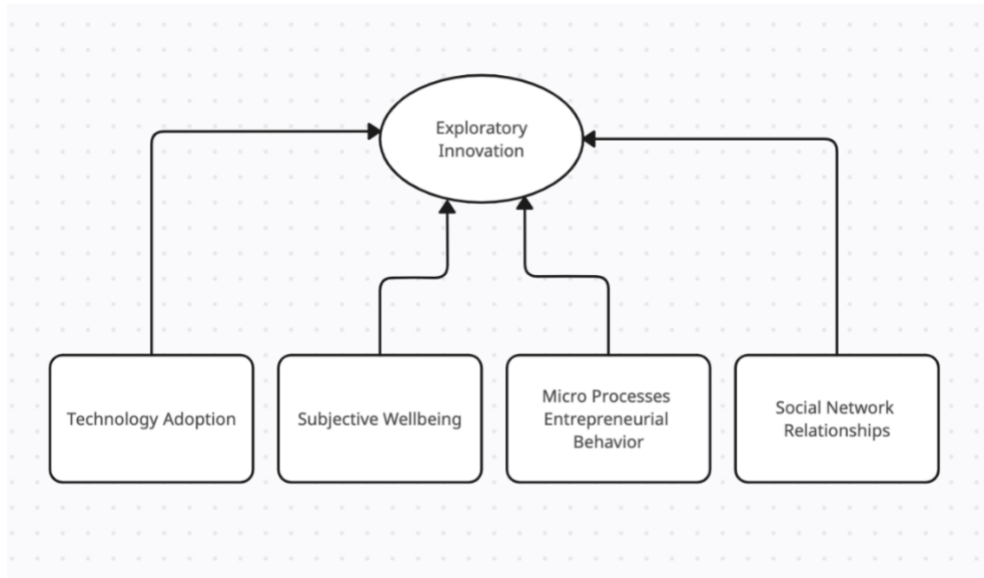
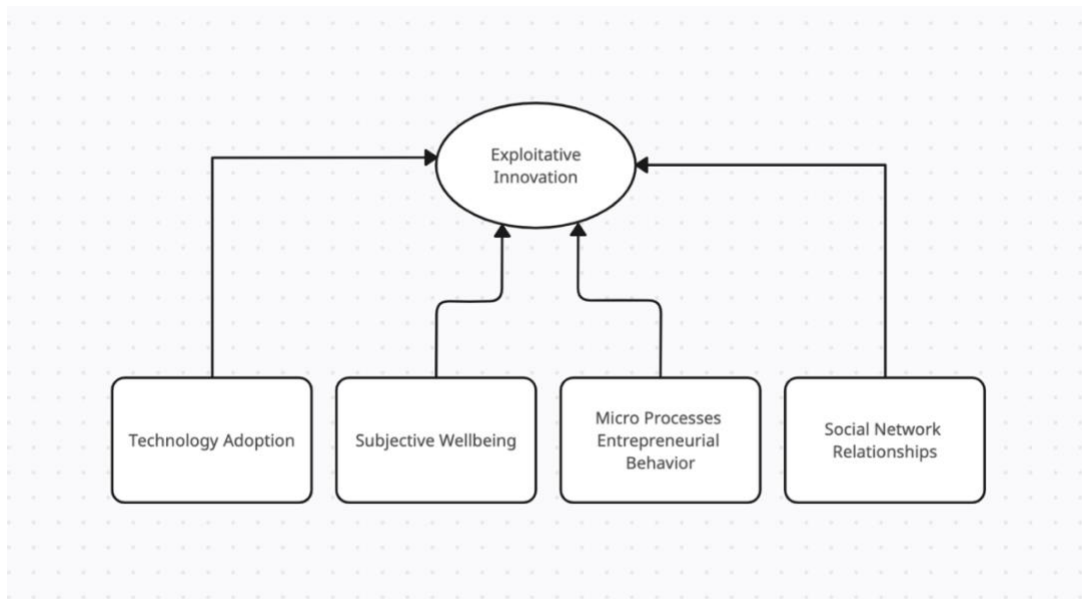


Figure Chapter.3.2: Conceptual Framework Exploitative Innovation (adapted from Autio et al, 2014)



3.3 Contextual Dimensions and Hypotheses

Recent studies have stressed the importance of contextualizing entrepreneurship research (Chalmers and Shaw, 2015; De Bruin and Lewis, 2015; Welter, 2011; Zahra and Wright, 2011; Chlosta and Welter, 2017; Patriotta and Siegel, 2019; Wadhvani et al., 2020).

Contextualizing entrepreneurship research is claimed to help shed light on research concerns and questions to be studied and link them to theoretical initiation and empirical examination (Zahra and Wright, 2011; Zahra et al., 2014; Rousseau and Fried, 2001). According to Zahra (2007), contextualization of entrepreneurship research increases innovation in entrepreneurship research and offers new views on well-known and unfamiliar subjects. Hodges and Link (2018, cited in Welter, 2011) urged entrepreneurship researchers to increase their focus on entrepreneurial innovation. Likewise, Welter et al. (2019) argue that entrepreneurship research is not sufficiently contextualized.

Zahra and Wright (2011) suggest that “entrepreneurship research can grow by pursuing creative and important questions while increasing its attention to methodological rigor that starts by paying careful attention to the context of research to identify relevant questions and factors like the context when developing theory and methods” (pp.68-69). Additionally, according to Autio et al. (2014), “the question of contextual influences on entrepreneurial innovation has received surprisingly little attention” (p.1098). Conversely, entrepreneurial context is essential in explaining entrepreneurial innovation (Audretsch et al., 2022).

Scholars suggest investigating entrepreneurship contexts from a dimensional standpoint, such as a social, spatial and institutional context (Welter, 2011); temporal, industry and market, spatial, social and ownership (Zahra et al., 2014); and organizational factors, work-job factors, external environment and time (Rousseau and Fried, 2001). However, this study adopted Autio’s et al. (2014) six contexts. They suggest that entrepreneurial innovation behavior is influenced by industry and technological, organizational, institutional and policy, social, and temporal and spatial contexts. Scholars argue that context and behavior affect each other (Welter and Xheneti, 2013; Zahra et al., 2014; Johns, 2006). Consequently, this study

proposes four contexts: subjective wellbeing context, technology adoption context, entrepreneurial behavioral microfoundations context and social relations context.

3.4 Technology Context:

It is argued that Information Technology (IT) is an important instrument or element for innovation (Zhang et al., 2016). Technological innovations are the products of new ideas or concepts that have been transformed into products, services or processes (Kleis et al., 2012). IT adoption has become an important research topic in recent years (Grinstein, 2008; Simmons et al., 2008; Sundaram et al., 2007, cited in Peltier et al., 2012; Zhang et al., 2016). The purpose of this section is to define and discuss the literature on IT adoption. IT is considered one of the most important strategic tools and resources for business competitiveness, especially for small and medium enterprises (SMEs) (Jin, 2007; Haro-Domínguez et al., 2010). The dissemination, use and involvement of digital technologies in many products or services have enhanced the role and the importance of IT in innovation (Nambisan, 2013). Jin (2007) argues that information technology can influence and enhance productivity and encourage innovation (p.4345). Zhang et al. (2016) mention that IT can increase efficiency and effectiveness and drive innovation. Ko and Liu (2019) claim that managers started to adopt IT to support innovation for increasing their firms' competitiveness. Zammuto et al. (2007, p.750) explain the role of IT in organizations as viewed by Galbraith (1973, 1977): "Galbraith saw information technology (IT) as a tool to enhance vertical information processing whereas horizontal information processing could be increased by creating linkages between people who possessed part of the information required for a specific decision-making activity."

IT has one major flaw that is the "cycle of continual technology implementation," that is, the emergence of new or updated technology during initial implementation (Straub, 2009,

p.643). Straub (2009) encourages the research community to focus on adoption and readoption of technology and the difficulties of readoption. Venkatesh et al. (2003) claim that technology will reach a point where its adoption will be easy. This claim can be supported with the emergence of cloud computing.

3.4.1 Technology adoption

Jin (2007) argues that the rate of IT adoption in SMEs is lower than that in larger businesses. Moghavvemi et al. (2016) also claim that Malaysian SMEs' rate of IT adoption is slower than larger businesses. Technology adoption is claimed to improve the innovation process, but it also increases costs, risks and shortens products/services lifecycles (Kleis et al., 2012; Haro-Domínguez et al., 2010). A technology strategy gives firms the ability to identify, acquire, develop and use technology to gain a competitive edge (Lanctot and Swan, 2000, cited in Haro-Domínguez et al., 2010).

In this study, the relationship between IT adoption and innovation is examined. Specifically, this study will investigate technology adoption's constructs: performance expectancy and intention to use and have a positive relationship with exploratory and exploitative innovations. Previous studies have focused on the influence of related variables on IT adoption, but not the influence of IT adoption on these variables (Venkatesh et al., 2003, 2008, 2016). Additionally, there is a lack of studies that assess the impact of IT competency on both types of innovation in a single study (Limaj et al., 2016; Soto-Acosta et al., 2018, cited in Ko and Liu, 2019).

As explained and defined in section 3.1 exploratory innovations are concerned with the development and commercialization of new products or services. Exploratory innovations are also concerned with acquiring new knowledge, search, and experimentation. Conversely,

exploitative innovations are concerned with enhancing, improving and refining current processes, technologies, services and products (March, 1991; Ahsan et al., 2022; Kollmann and Stöckmann, 2014; Kuckertz et al., 2017). Exploitative innovations are concerned with increasing efficiency and improving the current state (Cai et al., 2021). Hong et al., (2018) claim that exploratory innovations are involved in divergence from existing technologies and skills to develop new products and services. They also argue that exploratory innovation will result in gaining new knowledge. They claim that exploitative innovations build on the current technologies, skills and knowledge to efficiently improve on existing processes, products and services.

This study adopts the Technology Adoption Decision and Use (TADU) model developed by Moghavvemi et al. (2016). The model is an updated version of the Unified Theory of Acceptance and Use of Technology versions 1 and 2 (UTAUT1/2). It consists of 10 attributes: performance expectancy, perceived desirability, perceived feasibility, social influence, propensity to act, use behavior, effort expectancy, facilitating condition, intention to use and precipitating events. The adaptation of TADU is necessary mainly because of the lack of focus on business context from UTAUT and its extensions. Venkatesh et al. (2016) admit that “we found only one study that applied UTAUT in its original research context” (p.332). Moghavvemi et al. (2016) updated the measurements in the model to fit the business context and specifically entrepreneurs’ use. The study will use two attributes of the TADU model: performance expectancy and intention to use. Venkatesh et al. (2016) claim that this omission/deletion of attributes is common in UTAUT extension research.

Eight attributes have been dropped and are considered to be outside of the scope of this study. Five of these attributes are measuring individual perceptions (perceived desirability,

perceived feasibility, and social influence) and environmental factors (facilitating conditions) (Moghavvemi et al., 2016; Venkatesh et al., 2012). Facilitating conditions are considered as external factors (Venkatesh et al., 2008) and explained as the availability of infrastructure or resources to determine the use of IT (Venkatesh et al., 2003). The other three dropped attributes are propensity to act, use behavior and effort expectancy which measure individual qualities that influence his/her decision to use the IT, the ease of use of an IT and use behavior as an endogenous variable (Sitar-Taut and Mican, 2021). Use behavior is determined by UTAUT's four core constructs: performance expectancy, effort expectancy, social influence and facilitating condition (Hoi, 2020).

The use of only these two attributes is driven by the focus of this study. The major reason to use only two of the attributes is that UTAUT examines the behavior of intention to use technology and actual technology mainly at the organizational level, not at the individual level: "we found one UTAUT extension that examined the impact of technology use on individual performance" (Venkatesh et al., 2016, p.348). According to Venkatesh et al. (2012) performance expectancy is one of the three factors that influence behavioral intention (BI), while BI (intention to use) is one of the factors that determines technology use. Venkatesh et al. (2016) argue that "higher values of performance expectancy will tend to be associated with high values of behavioral intention" (p.340), and they call them the main effect in their baseline model. Venkatesh et al. (2003, p.447) explain that performance expectancy is the most relevant predictor of BI. Figures 3.3 and 3.4 present the technology adoption context hypotheses.

Figure Chapter.3.3: Technology Adoption Exploratory Innovation

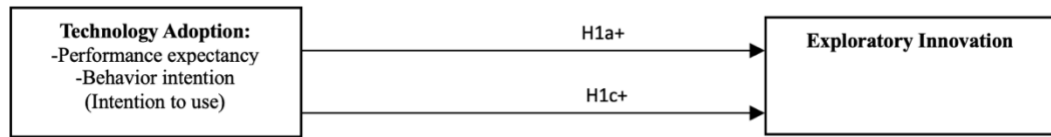
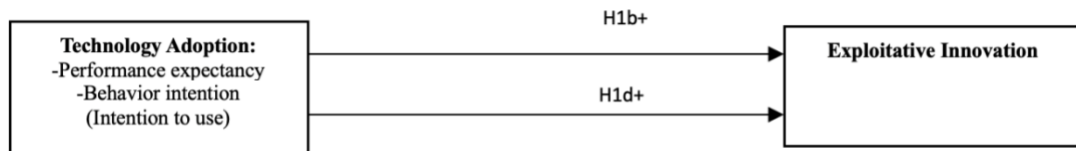


Figure Chapter.3.4: Technology Adoption Exploitative Innovation



3.4.2 Performance expectancy

Performance expectancy is defined as “the degree to which an individual believes that using the system will help him or her attain gains in job performance” (Venkatesh et al., 2003, p.447). Moghavvemi et al. (2012) also defined performance expectancy as “the degree to which an SME owner perceives using IT innovation would be free of effort or takes less effort or is user-friendly” (p.235). In this study, performance expectancy means that entrepreneurs will assess adopting new technology if the new technology will transform changes in their businesses and will improve performance (Mensah et al., 2021). According to Venkatesh and Speier (1999, cited in Zuiderwijk et al., 2015) the influence of making more money and the improvement in job performance are the drivers of IT use. The scale consists of five items and starts with “I find the Information Systems innovation to be useful in my business” (Moghavvemi et al., 2012).

Performance expectancy is one of the most important influential factors affecting users’ decisions to use information technology (Venkatesh et al., 2003; Moghavvemi et al., 2011; Ibrahim et al., 2018). Studies have confirmed that performance expectancy is the strongest

predictor of adoption behavior (Wang and Shih, 2009, cited in Chiu and Hofer, 2015; Zhou et al., 2010). Zuiderwijk et al. (2015) also confirm that performance expectancy is the strongest predictor of IT using behavior. Hoi (2020) reports that performance expectancy has a positive relation with intention behavior to use IT.

Performance expectancy is constructed from several theories: perceived usefulness (TAM/TAM2), relative advantage (diffusion theory) and outcome expectations (social cognitive theory) (Venkatesh et al., 2003; Chiu and Hofer, 2015; Patil et al., 2020). Clearly, one of these items (relative advantage, diffusion theory) is a trait of innovation (Jeyaraj et al., 2006).

Performance expectancy will be investigated regarding whether it has a positive relationship with improving, enhancing, and refining products, services and processes (exploitative innovations) and whether it has a positive relationship with acquiring new knowledge and creating and commercializing new products and services (exploratory innovations). In the technology adoption literature, the relationship between technology adoption and innovation have been investigated through the influence of several IT tools and new technology systems such as big data, artificial intelligence (AI), email, product design software and the Internet of Things (IoT) (Gobble, 2013; Upadhyay et al., 2021; Zhang et al., 2016; Nambisan, 2013; Ceipek et al., 2021; Durmuşoğlu and Barczak, 2011).

Big data acts as exploratory innovations and exploitative innovations at the same time. Big data improves processes and decision-making and creates new knowledge. Gobble (2013) argues that big data has developed new lines of knowledge that were not available before. The author adds that big data helps in creating new businesses, improving processes, and reducing costs and risk (p.64). To test the relationship between small and medium businesses' adoption

of E-commerce as a domain of information technology, Mensah et al. (2021) report that the performance expectancy of Chinese small and medium businesses predicts E-commerce adoption. Upadhyay et al. (2021) confirm that performance expectancy influences the adoption of AI technology and has the highest influence on AI acceptance intention. They add that entrepreneurs adopting AI technology will help them in supporting, assisting, and influencing their business activities. Rahi et al. (2019) found that performance expectancy predicts user adoption of IT innovation such as online banking.

An example of the influence of IT on exploitative innovation, is what Zhang et al. (2016) have explained about how the social network services have influenced the innovation in social network productivity. Nambisan (2013) argue that the use and the deployment of IT tools and applications have enhanced the efficiencies and effectiveness of new product development activities. Chiu and Hofer (2015) note that the deployment of an innovative service technology will result in higher service quality. The authors report that performance expectancy is positively related to consumer intentions to adopt retail service innovation.

Another technology that presents the two types of innovations is IoT. It is argued that IoT has paved the way for the exploration and exploitation of new business opportunities, such as “greater efficiency/reliability of existing business or novel differentiated advantages” (Ceipek et al., 2021, p.143). Ceipek et al. (2021) claim that this technology can improve existing products or services (exploitative innovation) and can develop new disruptive uses for existing products or services (exploratory innovation). Entrepreneurs who have high expectations for innovative technology are more likely to explore or exploit it (Chiu and Hofer, 2015). This means that the performance expectancy of IT adoption is important for SMEs to either improve existing products/services or create new products/services. Ratten (2015)

explains: “Technological innovations that explain how they are to be utilized by individuals will be impacted by performance expectations” (p.87). Moghavvemi et al. (2011) argue that performance expectancy is an important element for SME owners in order to decide whether to adopt IT.

Contrarily, another study conducted by Moghavvemi et al. (2017) concludes that performance expectancy does not influence the intention to use IT innovation. Moghavvemi et al. (2017) claim that male and younger entrepreneurs are more likely to use IT innovations if they expect high performance. This claim is in line with Venkatesh and Zhang’s (2010) findings. Also, Kabra et al. (2017) investigated IT users’ innovativeness as a moderator to the relationship between performance expectancy and behavior intention to use IT. They report that it is not significant for IT users’ innovativeness to moderate the relationship between performance expectancy and behavior intention. Ratten (2015) investigates the relationship between performance expectancy and purchase intention of consumers for cloud computing services. Ratten (2015) report that performance expectancy does not predict the purchase intention of cloud computing services in the USA, while it predicts it in Turkey.

This leads to the following hypotheses:

Hypothesis 1a: Entrepreneur technology adoption-performance expectancy is positively and significantly related to exploratory innovation.

Hypothesis 1b: Entrepreneur technology adoption-performance expectancy is positively and significantly related to exploitative innovation.

3.4.3 Intention to use

Intention to use is defined as the “behavior intention indicating how SME owners are willing to try and exert effort in order to perform the behavior” (Moghavvemi et al., 2012,

p.236). Intention to use (BI) will determine technology use (Venkatesh et al., 2012). Davis et al. (1989) and Shiau (2014) argue that BI is a major predictor of usage behavior. Shiau and Chau (2014) claim that BI is major factor in the use of IT. Patil et al. (2020) report that BI positively influences use behavior of IT innovation. To understand how technology influences or has an influence on innovation behavioral intention (intention to use), the relationship between them will be tested.

Behavior intention is also defined by Warshaw and Davis (1985, p.214) cited by Venkatesh et al. (2008), as “the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior” (p.484). According to Chiu and Hofer (2015) innovative individuals are more likely to use new technology than un inventive individuals. The authors report that personal innovativeness positively moderates individual’s performance expectancy and intention to use. The main point of this construct is whether the entrepreneur will use or reject new technology (Moghavvemi et al., 2016).

The intention to use construct is adapted from Moghavvemi et al. (2016). The scale was originally developed by Davis et al. (1989) and then tested and used by Venkatesh (2003). The scale consists of five items and starts with “I find the Information Systems innovation to be useful in my business” (Moghavvemi et al., 2012). Ibrahim et al. (2018) report that BI to use technology is a predictor to technology use. In their recent work, Sitar-Taut and Mican (2021) have reported that BI influences the use behavior. Patil et al. (2020, citing Ajzen, 1991) state that high intentions will result in high behavior intentions or high probability of performing the behavior. Venkatesh et al. (2008) and Venkatesh et al. (2003) report that BI alone has been used to predict system use. Venkatesh et al. (2008) propose that (BI) has major flaws. They argue that BI does not measure external factors, does not predict and explain the

uncertain and unforeseen events happening between forming the intention and the behavior, and does not predict behaviors that cannot be controlled by individuals.

Behavior intention will be investigated on whether it has a positive relationship with improving, enhancing, and refining products, services and processes (exploitative innovations) and on whether it has a positive relationship with acquiring new knowledge and creating and commercializing new products and services (exploratory innovations). In addition, exploration stresses “scanning slowly for answers to any questions”, while exploitation focuses on “executing, conducting, and realizing with speed” (Koo et al., 2015, p.137).

Durmuşoğlu and Barczak (2011) explain that the adoption of email and product design software tools has driven the new product development process forward. They add that these low-cost IT tools have shortened the time for teams to get feedback and approval, while making it easier for teams to share knowledge and technical expertise. Sivathanu (2019) reports that the behavior intention influences the adoption of digital payment systems. The author adds that consumers adopt the new technology because it enhances the ease of doing their daily financial transactions. Hoi (2020) reports that BI has a positive relation with intention behavior to use IT.

Durmuşoğlu and Barczak (2011) also prove in their study that the use of email during the development and commercialization of products enhances both product quality and market performance. They also found that the use of product design software enhances innovativeness during the product development process. Contrarily, Slade et al. (2015) report that innovativeness influences BI of adopting of remote mobile payments.

Sivathanu (2019) argues that digital payments give the financial institutions the access to their customers’ private lives. The author adds that cash gives the bank client the “assurance

of anonymity” (p.164). Digital technologies can improve business processes, operations, and solutions by converting business activities from offline to online (Upadhyay et al., 2021). Dasgupta et al. (2009) investigated the behavior intention of pharmacists to use personal digital assistants (PDAs). They conclude that BI influences the intention of pharmacists to use the technology because it will improve the patient care process.

Another emerging technology is cloud computing. Shiau and Chau (2014) state that cloud computing can help in developing online classes and facilitate student learning. The authors explain that cloud computing is a new technology while cloud computing classrooms are a learning environment. They found a positive relationship between two characteristics of Roger’s (2003) Diffusion of Innovation (DoI) theory and BI.

However, Kabra et al. (2017) report that personal innovativeness does not influence behavioral intention to use IT. They also report that IT users’ innovativeness does not moderate the relationship between performance expectancy and behavior intention to use IT. There is a relatively small body of literature that is concerned with the negative relationship or lack of relationship between behavior intention to use IT and innovation. Kabra et al. (2017) assert that “no study has investigated the effect of trust in technology and moderating role of personal innovativeness on behavioural intention to adopt IT” (p.1257). Kleis et al. (2012) argue that IT alone does not contribute to radical or breakthrough innovations. Nordhoff et al. (2021) claim that performance expectancy is a stronger predictor of BI, while effort expectancy and facilitating conditions have no influence on BI. There is a relatively small body of literature that is concerned with the negative relationship or lack of relationship between behavior intention to use IT and innovation. To understand how technology BI (intention to use) influences or has an influence on innovation, the relationship between them will be tested.

Accordingly, this research will investigate the relationship between intention to use and innovation, exploring the following hypotheses:

Hypothesis 1c: Entrepreneur technology behavior intention is positively and significantly related to exploratory innovation.

Hypothesis 1d: Entrepreneur technology adoption behavior intention is positively and significantly related to exploitative innovation.

3.5 Subjective wellbeing context

Entrepreneurs face a highly unpredictable and uncertain environment (Baron, 2008; Baron et al., 2012; Shepherd and Patzelt, 2018; Santos et al., 2020; Foo, 2011). Subjective wellbeing (SWB) can arguably be categorized into two categories: physiological and psychological (Pathak, 2021). The author explains that the physiological category is about an “individual’s physical state” and the psychological category is classified into hedonic and eudaimonic wellbeing (p.1994). The first classification is concerned with feelings and happiness, while the latter is concerned with life satisfaction and emotions, positive and negative affect. Studies have found links between mood and emotion and entrepreneurial processes (Baron, 2008). Entrepreneurial emotion is referred to “the affect, emotions, moods, and/or feelings—of individuals or a collective—that are antecedent to, concurrent with, and/or a consequence of the entrepreneurial process, meaning the recognition/creation, evaluation, reformulation, and/or the exploitation of a possible opportunity” (Cardon et al., 2012, p.3). Some researchers measure subjective well-being “by simply asking people about their happiness” (Dolan et al., 2011, p.4). However, Diener and Ryan (2009, p.391) consider subjective well-being as an “umbrella” encompassing health, happiness and affect (positive and negative).

Arguably, a business's success is linked with an entrepreneurs' personal characteristics because the process of entrepreneurship can produce different emotions (Cardon et al., 2012). Research has shown that some entrepreneurs quit their entrepreneurial journey after facing risk, challenges and suffering from negative emotion such as stress (Bradley and Roberts, 2004; Kasouf et al., 2015, cited in Wei et al., 2020). Cardon et al. (2012) argue that affect can influence entrepreneurial process during starting or exiting a business. Accordingly, entrepreneurs need to be excited to keep running their businesses. (Foo, Sin and Yiong, 2006, cited in Cardon et al., 2012). The purpose of this subsection is to define affect/mood, health and happiness and to discuss these factors and how they may have an influence on innovation. Figures 3.5 and 3.6 present the subjective wellbeing context hypotheses.

Figure Chapter 3.5: Subjective Wellbeing Exploratory Innovation

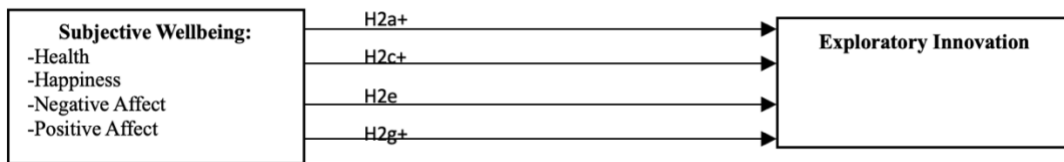
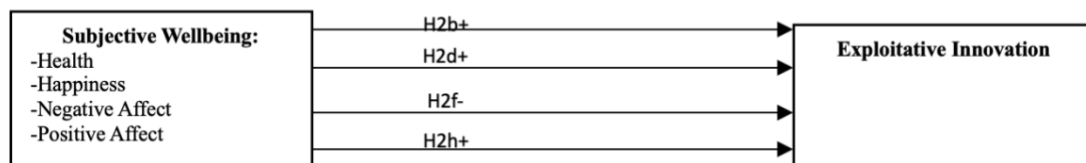


Figure Chapter.3.6: Subjective Wellbeing Exploitative Innovation



3.5.1 Health

This subsection will discuss the influence of general health on entrepreneurial innovation. Entrepreneurs may face health difficulties as result of the uncertain and

unpredictable environment they face (Baron, 2008). These difficulties may affect the quality of entrepreneurs' wellbeing (Mensmann and Frese, 2019). Madrid and Patterson (2016) draw on the works of Baumeister et al. (1998), Hobfoll (1989) and Muraven et al. (1998), who suggest that intensive thinking exhausts mental resources and increases fatigue and distress (p.413). Stephan et al. (2020) investigated the difference in health quality between self-employed individuals and employed individuals. Their study concluded with no difference between the two groups. Conversely, Binder and Coad (2013) conclude that self-employed individuals who leave their employment jobs to seek entrepreneurial opportunities have higher self-satisfaction than those who are unemployed. Stephan and Roesler (2010) confirm that entrepreneurs have higher life satisfaction than employees.

A study found that the wellbeing for established entrepreneurs is higher than the wellbeing for nascent entrepreneurs (Gong et al., 2022). Health is found to be influenced by SWB (Diener and Chan, 2011). Stroe et al. (2020) claim that early-stage entrepreneurs are more likely to experience negative affects than established entrepreneurs. Levasseur et al. (2019) argue that high levels of stress can lead to poor health and poor health can prompt unfavorable outcomes. However, Zhou et al. (2022) report that entrepreneurship has no direct relationship with health. Yet, it is argued that stress recovery can prevent burnout and exhaustion and enhance creativity (White and Gupta, 2020). Weinberger et al. (2018) report that physiological and mental recovery are the drivers of daily creativity.

This study measures general health through one question: "In general, would you say that your health is:" with five options: "poor, fair, good, very good, excellent". The health question is adopted from the 36-item Rand health survey 1.0 (Hays et al., 1993). Mensmann and Frese (2019) argue that entrepreneurs' wellbeing is understudied. As to this study's

knowledge, there is a paucity of research studying the relationship between entrepreneurs' general health and entrepreneurial innovation. A bibliometric analysis that uses the terms "well-being" and "entrepreneur*" (p.16967) found that the literature did not include general health (Sánchez-García et al., 2018). Sánchez-García et al. (2018) defined wellbeing according to two approaches: hedonic and eudaimonic.

Binder (2013) suggests that the hedonic experience is defined as enjoyment. Hedonic wellbeing is defined as the happiness of achieving satisfaction and avoiding pain (Sánchez-García et al., 2018; Kahneman et al., 1999, cited in Stephan, 2018). Sánchez-García et al., (2018) explain that an eudaimonic definition of wellbeing as the extent to which a person is fully functional and self-realized. Binder (2013) argues that innovation may impact individual and societal wellbeing, for example new technologies may require new high level technological skills that may increase unemployment for the general population and increase pressure on the skilled force. Hedonic wellbeing is defined as the happiness of achieving satisfaction and avoiding pain (Sánchez-García et al., 2018).

This research investigates whether general health has a positive relationship with improving, enhancing and refining products, services and processes (exploitative innovations) and whether it has a positive relationship with acquiring new knowledge and creating and commercializing new products and services (exploratory innovations). However, Meijer et al. (2009) note in their study that innovation positively influences individuals' physical health. They explain that the introduction of new innovative office concepts has influenced the employees' general health positively. Liu and Munier (2019) point out that innovation positively influences life satisfaction.

Therefore, it is hypothesized that:

Hypothesis 2a: Health is positively and significantly related to exploratory innovation.

Hypothesis 2b: Health is positively and significantly related to exploitative innovation.

3.5.2 Happiness

Happiness is also called subjective wellbeing that is simply “good life” (Diener, 2000). This subsection discusses happiness’s influence on entrepreneurial innovation. Here, happiness was adapted from the subjective well-being scale developed by the Office of National Statistics. The question is adopted from the personal wellbeing questions developed by the Office of National Statistics (ONS). The happiness question is one of four questions to measure personal wellbeing called ONS4 (Eddolls and Rees, n.d). The four measures of personal wellbeing constructed are “Overall, how satisfied are you with your life nowadays?, Overall, to what extent do you feel the things you do in your life are worthwhile?, Overall, how happy did you feel yesterday? and Overall, how anxious did you feel yesterday?” (Personal wellbeing in the UK Quality and Methodology Information (QMI) - Office for National Statistics, n.d.). Diener (2000) argues that it is common to use a one item construct for subjective wellbeing (SWB). The downside of using the scale is that “people may respond to SWB scales in socially desirable ways” (Diener, 2000, p.35).

Entrepreneurs are humans, and for most of their intense time running their ventures, they will experience feelings or emotions that may affect their judgment (Baron, 1998). Excitement is an important factor for entrepreneurs to continue managing their ventures (Foo, Sin and Yiong, 2006, cited in Cardon et al., 2012). Lyubomirsky et al. (2005) defined happy individuals as “those who experience a preponderance of positive emotions—tend to be successful and accomplished across multiple life domains” (p.803). Aristotle viewed happiness as “the supreme good” (Myers and Diener, 1995, p.10). Happiness is argued to be an important

factor that affects or influences entrepreneurial decision-making and firm performance (Sherman et al., 2016). Usai et al. (2020) suggest that happy individuals are more likely to start new businesses.

March (1991, cited in Hong et al., 2018) argues that exploration innovations are riskier than exploitation innovations. As mentioned by (Baron, 1998), emotions and feelings influence the entrepreneur decision-making process. As result, it is hard for companies to adapt to new markets or develop new product because of high chances of failure (Hong et al., 2018). Exploratory innovation is considered a long-term strategic objective, while it is considered risky and highly uncertain (Hou et al., 2019).

Furthermore, Sherman et al. (2016) note that happiness is an antecedent of successful outcomes. Diener (1984) defines happiness as three parts: possessing desirable quality, life satisfaction and individuals' evaluation of a good life, and pleasant emotional experience (p.543). Happiness is considered a hedonic wellbeing (Stephan, 2018; Sánchez-García et al., 2018; Pathak, 2021). In conclusion, happiness is made of positive feelings and positive moods (Teixeira and Vasque, 2020).

Metcalfe (2001, cited in Binder 2013) argues that innovation's influence on SWB is not well defined; however, innovation's influence on economic growth is well defined. The influence of innovation on SWB can be multidimensional: it can have negative and positive effects on individual and societal SWB. Binder (2013) explains that citizens acceptance and acknowledgment of innovations can put pressure on employment, the environment and cultural identity for society in general. Myers and Diener (1995) claim that happy individuals are optimists. Gong et al. (2022, p.8) argues that well-established entrepreneurs are more satisfied

than nascent entrepreneurs. Research has also found that Schumpeterian creative destruction positively influences SWB (Aghion et al., 2016).

Sen (1993, cited in Usai et al., 2020) argues that happiness is the main drive to unleash potential. Lyubomirsky et al. (2005) found that a happy individual is successful in many aspects of his/her life. Further, the authors posit that positive emotions influence the individual to look for new ideas rather than avoid them. Positive emotions may influence entrepreneurs to focus on positive aspects of the business or the idea, while negative emotions may do the opposite (Foo, 2011). Wiklund et al. (2019) suggest that happier individuals are more likely to be more creative and productive. Additionally, happy individuals are more likely to assess their situations as pleasant (Pathak, 2021). A systematic literature review of SWB conducted by Stephan (2018) reports that happier entrepreneurs manage higher performing firms where performance, for example, is measured as innovative behavior (Stephan, 2018).

Dolan and Metcalfe (2012, p.1490) say that there is a paucity of research providing evidence of a relationship between happiness and innovation. They argue that there is a lack of research on the impact of SWB on innovation, although Binder (2013) investigates the impact of innovation on subjective wellbeing. Binder's (2013) study investigates the impact of innovative change on subjective wellbeing (happiness) and welfare of society. Lenzi and Perucca (2020) support Dolan and Metcalfe's claim that there is a lack of research on the relationship between innovation and subjective well-being. Lenzi and Perucca (2020) claim that the Dolan and Metcalfe (2012) and Binder (2013) studies are the two exceptions.

In their study Dolan and Metcalfe (2012) suggest that happiness is an antecedent of creativity (p.1490). They claim that "a 33% increase in life satisfaction is associated with 8% higher imagination" (p.1497) and improving individuals' SWB will drive productivity and

economic growth. Happiness (subjective well-being) is considered a positive affect (Diener, 1984). Happiness is also argued that it “requires total satisfaction, that is satisfaction with life as a whole” (Tatarkiewicz, 1976, p.8, cited in Diener et al., 1985, p.71).

In this regard, individuals with high levels of happiness look for details and information more loosely because they consider their environment as pleasant (George and Zhou, 2007). Individuals with negative affect are, in general, dissatisfied (Watson and Pennebaker, 1989). George and Zhou (2007) argue that negative affect is influencing individuals to develop creative solutions for their problems because they focus more on details and the available information. Usai et al. (2020) suggest that excess happiness or creativity is useless and has no influence on innovation capital. Furthermore, Cardon et al. (2012) argue that “It is somewhat limiting to ask people how they feel because they do not always know” (p.5).

Accordingly, this research investigates whether happiness has a positive relationship with improving, enhancing and refining products, services and processes (exploitative innovations) and whether it has a positive relationship with acquiring new knowledge and creating and commercializing new products and services (exploratory innovations).

Hypothesis 2c: Happiness is positively and significantly related to exploratory innovation.

Hypothesis 2d: Happiness is positively and significantly related to exploitative innovation.

3.5.3 Affect/mood (PANAS)

Entrepreneurs spend their time, effort and financial resources and exhaust their emotions and feelings to start new businesses in a highly unpredictable environment; as a result, Foo et al. (2009) argue that the role of affect in entrepreneurship should be studied and discussed. Strong presence emotions either negative or positive may impact entrepreneurs’ decisions to acquire or to dedicate resources due to their uncertainty about the environment

(Sweida and Sherman, 2020). Baron et al. (2012) defined affect as two parts of mood and that it is “often relatively long-lasting but not focused on specific events or objects” (p.312). Cardon et al. (2012) suggest that affect and emotion are similar in explaining individuals’ feeling reactions.

Affect is “antecedent to, concurrent with, and/or a consequence of the entrepreneurial process, meaning the recognition/creation, evaluation, reformulation, and/or the exploitation of a possible opportunity” (Cardon et al., 2012, p.3). Affect is found to be either positive or negative (Diener and Emmons, 1984; Watson et al., 1988). Positive and negative affects have been defined by researchers such as Diener (2000), Santos et al. (2020) and Watson et al. (1988).

Diener (2000) defines positive affect as “experiencing many pleasant emotions and moods” (p.34) and negative affect as “experiencing few unpleasant emotions and moods” (p.34). Positive affect has also been defined as enthusiasm, joy or passion (Santos et al., 2020; Cardon et al., 2009). Baron (1998) argues that positive affect stimulates happy thoughts and satisfying memories, while negative affect does the opposite. Watson et al. (1988) explain that positive affect occurs when a person feels “enthusiastic, active, and alert” (p.1063). In contrast, negative affect is “a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness” (p.1035).

The Positive Affect and Negative Affect (PANAS), developed by Watson et al. (1988), is the most widely used scale for measuring positive and negative affect. The scale consists of 10 positive and 10 negative affect items. Table 3.2: PANAS Items presents the 20 items of PANAS measurement. It uses adjectives to indicate positive and negative affect, such as

excited, proud, irritable and ashamed. This measure is considered relevant for measuring the mood of entrepreneurs involved in starting new ventures because it is concerned with high-activation types of positive affect, such as feelings of excitement, elation and alertness (Baron et al., 2012).

Positive affect increases alertness to the external environment and broadens the scope of thinking in each situation to assess a wider range of possibilities (Baron et al., 2012; Baron, 2008). In addition, Watson et al. (1988) argue that high positive affect is a condition of highly energetic and pleasurable or pleasant experiences, while negative affect is the opposite, such as feeling sadness or lack of energy. Positive affect broadens entrepreneurs' awareness for exploring new innovative ideas (Pathak, 2021).

George and Zhou (2007) argue that positive affect may negatively affect creativity. They explain that individuals with high positive mood consider their environment as pleasant. This consideration affects the individual systematic and effortful information processing. The authors claim that individuals with high negative mood consider their environment as unpleasant. So, individuals in this unpleasant environment will focus on finding solutions to fix the problems in their environment. In contrast, Foo et al. (2009) and Baron and Tang (2011, cited in Baron, Tang and Hmieleski, 2011) argue that positive affect can enhance creativity and focus. Positive affect signifies that the environment is pleasant so it will influence individuals' perception and will result in exploratory creative ideas (Williamson et al., 2019). Lyubomirsky et al. (2005) proposed that positive affect leads to success. Stroe et al. (2020) found that early-stage entrepreneurs are more likely to experience negative affect than advanced-stage entrepreneurs. The authors explain that during early-stage entrepreneurship, entrepreneurs face a number of risky decisions such as purchasing equipment, hiring

employees and securing funds. They also add that entrepreneurs face commitment issues, personal struggles and a heavy workload. Gong et al. (2022) claim that nascent entrepreneurs are more likely to suffer from stress than established entrepreneurs.

Mood can be influenced by other factors, such as experience, environment, and context (George and Zhou, 2007). Dolan and Metcalfe (2012) argue that “the link between positive affect and innovation is not straight-forward” (p.1490). The authors explain that task perceptions may affect the influence of positive and negative affect on creativity. Unpleasant tasks will diminish the influence of positive affect on creativity.

Positive affect may increase the confidence of an individual in assessing situations that hinder their efforts to develop new products, that is, their level of innovation (Oishi, Diener and Lucas, 2009). Studies have found that individuals who experience positive affect become more supportive and cooperative with others to produce innovative products (Davis et al., 2017).

The effects of experiencing positive affect may cause an individual to favorably incline toward specific ideas that he/she may not incline towards when experiencing negative affect (Baron, 2008). This is because the individual perceives the world positively (Forgas, 1995, 1998b, cited in Davis et al., 2017). Foo (2011) argues that positive affect recalls more pleasant thoughts and memories, whereas negative affect recalls the opposite. As a result, Baron et al. (2011) found that positive affect generates more new ideas and increases cognitive flexibility. Contrarily, Madrid and Patterson (2016) draw on the works of Baas et al. (2008), De Dreu et al. (2008) and George and Zhou (2007) and suggest that positive affect influences the thinking process of generating new ideas while negative affect evokes creative solutions. However,

Williamson et al. (2022) assert that “negative affect followed by positive affect positively impacts creativity and work engagement” (p.27).

Baron et al. (2012) claim that positive affect may produce a high number of creative ideas, but the quality of these creative ideas is low because positivity neglects the negative aspects of these ideas. DeYoung (2011) refers to this phenomenon as impulsiveness. Amabile (1996, cited in Baron et al., 2011) agrees that creativity contributes to the basis of innovation. Lyubomirsky et al. (2005) suggest that positive affect increases the pursuit of goals for individuals and involvement with the environment.

The drawback of high positive affect is that the individuals fall into the trap of cognitive errors, such as optimistic bias and planning fallacy (Baron, 2008; Isen, 2000, cited in Baron et al., 2011). However, Stroe et al. (2020) argue that negative affect can hurt learning. Tian et al. (2016 cited in Berraies, 2022) argue that the learning process drives exploitative and exploratory innovations. Stroe et al. (2020) add that negative affect can hurt learning by disrupting entrepreneurs’ motivation and focus. Usai et al. (2020) agree that negative feelings are obstacles to learning.

Optimistic bias is defined as the expectations of positive future outcomes and events without any explanation or support for these positive expectations (Busenitz and Barney, 1997; Simon et al., 2000, cited in Baron et al., 2012; Baron et al., 2011). Positive affect gives the individuals the feeling that they are in control of their situation (Pathak, 2021). Foo et al. (2009) suggest that negative affect may signal an entrepreneur to expend more effort working on their tasks, while positive affect may send signals to the entrepreneur to spend less effort working on their tasks.

The planning fallacy is defined as the underestimation of time to finish a job or a task (Buehler et al., 1994; Roy et al., 2005). Consequently, entrepreneurs can face obstacles that jeopardize their entrepreneurial processes.

Accordingly, this research investigates whether positive affect and negative affect have a relationship with refining and improving existing products, services, and processes (exploitative innovations) and whether they have a relationship with acquiring new knowledge and creating and commercializing new products and services (exploratory innovations).

Hypothesis 2e: Negative affect is negatively and significantly related to exploratory innovation.

Hypothesis 2f: Negative affect is negatively and significantly related to exploitative innovation.

Hypothesis 2g: Positive affect is positively and significantly related to exploratory innovation.

Hypothesis 2h: Positive affect is positively and significantly related to exploitative innovation.

3.6 Entrepreneurial behavioral/microprocesses context

Entrepreneurial behavior is explained as “vision focused on innovations that meet market needs more effectively” (Gardner, 1994, cited in Kickul and Gundry, 2002, p.86). Covin and Slevin (1989) argue that entrepreneurial behaviors demand more risk than traditional behaviors. The section discusses different behavioral influential factors that may influence innovation. For example, entrepreneurial passion’s influence on entrepreneurial behaviors (Cardon and Kirk, 2015, cited in Luu and Nguyen, 2021). This section defines four entrepreneurial behaviors: need for cognition, entrepreneurial self-efficacy, entrepreneurial passion and entrepreneurial proactiveness. Figures 3.7 and 3.8 present the entrepreneurial behavioral context hypotheses.

Figure Chapter.3.7: Entrepreneurial Behavior Exploratory Innovation

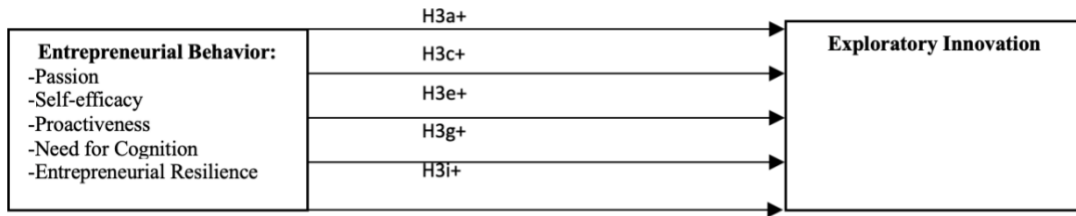
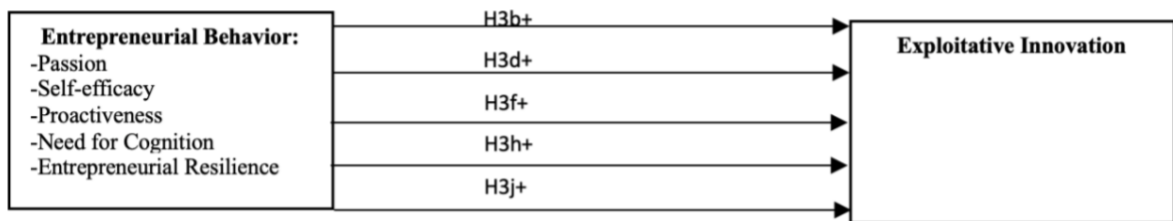


Figure Chapter.3.8: Entrepreneurial Behavior Exploitative Innovation



3.6.1 Entrepreneurial Passion

Passion is the core of entrepreneurship, and can drive and influence creativity (Cardon et al., 2013; Luu and Nguyen, 2021). Entrepreneurial passion is defined as “(1) a consciously accessible, intense positive feeling, and (2) entrepreneurial passion results from engagement in activities with identity meaning and salience to the entrepreneur” (Cardon et al. 2009, p.515).

Studies have explained that passion empowers entrepreneurs to focus on work and remain determined, thereby influencing creativity (Chang, 2001, cited in Kiani et al., 2020; De Mol et al., 2018, cited in Luu and Nguyen, 2021). Cai et al. (2021) claim that firm growth is driven by innovation, and this is the main reason CEOs are motivated to engage in innovative activities. Davila et al. (2006) as cited in Baron and Tang (2011) support this claim that innovation is a major factor in attaining growth in an uncertain environment. Baron and Tang

(2011) explain that the environmental uncertainty faced by CEOs drives them to use their passion to seek innovative resources.

Cardon et al. (2013) claim that there is a lack of empirical research on the role of passion in entrepreneurship. Luu and Nguyen (2021) also argue that there is scant evidence of how entrepreneurial passion influences firm innovation. However, Damanpour and Schneider (2006) and Alexiev et al. (2010, cited in Cai et al., 2021) indicate that interest in the drivers of firms' innovation have increased in innovation literature.

This study investigates the entrepreneurial passion relationship to entrepreneurial innovation. The study adapted the 13-item' entrepreneurial passion scale used by Costa et al. (2018) and originally developed by Cardon et al. (2013). The scale's 13 items are "It is exciting to figure out new ways to solve unmet market needs that can be commercialized, searching for new ideas or products/services to offer is enjoyable to me, I am motivated to figure out how to make existing products/services better, scanning the environment for new opportunities really excites me, inventing new solutions to problems is an important part of who I am, establishing a new company excites me, owning my own company energizes me, nurturing a new business through its emerging success is enjoyable, being the founder of a business is an important part of who I am, I really like finding the right people to market my product/service to, assembling the right people to work for my business is exciting, pushing my employees and myself to make our company better motivates me, nurturing and growing companies is an important part of who I am." This scale captures "the experience of innovation in different domains of entrepreneurship (inventing, founding and developing)" (Cardon et al., 2013, p.374). This study is investigating the three domains.

Research has explained that innovations are characterized into two types: exploitation innovations focusing on amplifying efficiency and productivity, and exploration innovations focusing on attaining new knowledge, new product/services and processes (March, 1991; Hirst et al., 2018). Luu and Nguyen (2021) suggest that the difference between exploitative and exploratory innovations is that exploitative innovations will produce certain and immediate results. Radical innovations are exploration innovations and incremental innovations are exploitation innovations (De Visser et al., 2010; De Visser and Faems, 2015). Incremental innovations introduce minor changes to the existing product, while radical innovations create new substitutes that are developed from learning or attaining new knowledge (Dess and Beard, 1984; Tushman and Anderson, 1986, cited in De Visser and Faems, 2015; De Visser, Faems and van den Top, 2011). Kiani et al. (2020) explain that radical innovations are the use of new technologies or processes that have never existed before. Ratten (2015) suggests that incremental innovation “involves a gradual improvement of a technology with minor changes and a low level of knowledge required to process the change” (p.81).

Studies have claimed that entrepreneurial passion enables innovation (Atuahene-Gima and Murray, 2007; Li and Yeh, 2017, cited in Kiani et al., 2020). Zahra and Newey (2009, cited in Luu and Nguyen, 2021) explain that passion is an entrepreneurial resource. Cai et al. (2021, p.1364) claim that CEOs’ passion influences both types of innovations: exploitation innovations and exploration innovations. A study conducted by Luu and Nguyen (2021), found a positive relationship between entrepreneurial passion and exploratory innovation, while an inverted U-shaped relationship existed between entrepreneurial passion and exploitative innovation. They explain that entrepreneurs choose exploitative innovations if they have a lower degree of passion because a high degree of passion will increase entrepreneurs’

expectations for exploitative innovations outcomes. As a result, entrepreneurs will not limit themselves to existing knowledge or products. The authors also argue that high entrepreneurial passion will not influence exploitative innovation to the same level it does with exploratory innovation. This influence is explained by the inverted U-shaped relationship between passion and exploitative innovation. The degree of entrepreneurial passion will reach a level where the entrepreneurs will have high expectation outcomes for the exploitative innovation, and as a result the entrepreneur will shift to exploratory innovation strategies. Furthermore, Kiani et al. (2020) report that entrepreneurial passion influences radical innovation (exploration innovations). But radical innovations may increase financial risk and new product failure (Isabel Jiménez-Zarco et al., 2012). Accordingly, this study investigates the relationship between entrepreneurial passion and entrepreneurial innovation, specifically exploratory and exploitative innovation:

Hypothesis 3a: Entrepreneurial passion is positively and significantly related to exploratory innovation.

Hypothesis 3b: Entrepreneurial passion is positively and significantly related to exploitative innovation.

3.6.2 Entrepreneurial Self-efficacy

Self-efficacy is an important factor for shaping an individual's decision to become and to continue to be an entrepreneur (Zhao et al., 2005, cited in Dimov, 2010; Rauch and Frese, 2007, cited in Drnovšek et al., 2010). The definition of self-efficacy was pioneered by Albert Bandura. Bandura (1977) defined it as an individual's confidence in their abilities to perform a task. According to Bandura (1986, cited in Zhao et al., 2005, p.1266) there are four processes that influence individuals' sense of self-efficacy: enactive mastery, role modelling and

vicarious experience, social persuasion and judgments of one's own physiological state. Studies argue that there is a relation between self-efficacy and performance (Bandura and Locke, 2003, cited in Hopp and Stephan, 2012). This research adopted the entrepreneurial self-efficacy measure used by Hopp and Stephan (2012) as a specific measure, instead of the generalized measure developed by Bandura (1997). Phillips and Gully (1997, cited in Drnovšek et al., 2010) argue that a specific self-efficacy measure promotes better understanding. The 5-item scale was originally developed by Dimov (2010) and measures how confident the entrepreneur is in starting a successful business. The measure consists of five following questions: "Starting this new business is much more desirable than other career opportunities I have, If I start this new business, it will help me achieve other important goals in my life, Overall, my skills and abilities will help me start this new business, My past experience will be very valuable in starting this new business, I am confident I can put in the effort needed to start this new business."

Haase et al. (2018) note that the expectation of positive outcomes will motivate individuals' behavior. Entrepreneurial self-efficacy is entrepreneurs' belief that they have the skills to develop a working business (Hopp and Stephan, 2012). Scholars have also defined entrepreneurial self-efficacy as "the strength of a person's beliefs that he or she is capable of successfully performing the various roles and tasks of entrepreneurship" (Boyd and Vozikis, 1994; Chen et al., 1998, cited in Ahlin et al., 2014, p.104).

Decisions to improve, experiment and develop new products, services and processes are associated with risk (Krueger Jr. and Dickson, 1994; Kleis et al., 2012; March, 1991). Individuals' positive perception of their abilities to perform a task can influence their decision

to take action (Bandura, 1997). As a result, entrepreneurs' decision to explore or to exploit an innovation can be driven by their level of self-efficacy.

This study investigates the relationship between entrepreneurial self-efficacy and innovation. Innovations are differentiated into exploration innovations and exploitation innovations (March, 1991). Exploratory innovations are concerned with the development of new means such as new products, services and processes and attaining new knowledge, while exploitative innovations are concerned with improving current products or services and increasing efficiency (Cai et al., 2021; March, 1991; Ahsan et al., 2022; Kollmann and Stöckmann, 2014; Kuckertz et al., 2017). The difference between exploration and exploitation can be explained as “exploration of new possibilities” and “exploitation of existing capabilities” (Huang et al., 2017, p.759).

Bandura (1997) explains that without strong self-efficacy, individuals face difficulties in becoming innovative. Developing new products or services or adopting new technologies (exploratory innovations) can be risky for some (Kleis et al., 2012; March, 1991) but entrepreneurs with high entrepreneurial self-efficacy are more confident and more able to overcome challenges and difficulties (Wei et al., 2020). Inspired individuals who feel high self-efficacy are likely to be innovative and to expect success (Spreitzer, 1995, cited in Ahlin et al., 2014, p.104). Studies have reported that the creative self-efficacy can predict creativity (Haase et al., 2018; Mittal and Dhar, 2015; Richter et al., 2012, cited in Pan et al., 2021). Research has claimed that entrepreneurs with high entrepreneurial self-efficacy have a high probability of setting innovative goals for their companies and are more likely to exhibit entrepreneurial behavior (Drnovsek and Glas, 2008; Chen and Zhou, 2017, cited in Wei et al., 2020, p.2). Krueger Jr. and Dickson, (1994) argue that managers who doubt themselves are

obsessed with their failures, whereas Hirst et al. (2018) claim that individuals with high self-efficacy do not need a high level of motivation to achieve their goals.

The weakness of entrepreneurial self-efficacy is that it is biased by entrepreneurial knowledge level. Nascent entrepreneurs have no entrepreneurial experience to judge their evaluation of self-efficacy and experienced entrepreneurs may exaggerate their entrepreneurial self-efficacy scores (Khedhaouria et al., 2015). However, Bandura (1997) argues that focus specific measures are better at predicting efficacy. Drnovšek et al. (2010) add that the self-efficacy construct should be divided into two distinct measures: business startup self-efficacy and business growth self-efficacy. They argue that business startup self-efficacy involves entrepreneurs' confidence in exploring and converting new technologies into businesses, while business growth self-efficacy involves their confidence in exploiting current products and services (Drnovšek et al., 2010, p.337).

Hallak et al. (2018), in their study of upscale restaurants, note that creative self-efficacy has a positive relationship with innovation. Creative self-efficacy occurs when the individuals believe in generating creative ideas (Tierney and Farmer, 2011, cited in Hallak et al., 2018). Ahlin et al. (2014) suggest that there is a link between entrepreneurial self-efficacy and entrepreneurial outcomes such as entrepreneurial innovation. Research has found a positive relationship between entrepreneurial self-efficacy and innovation behavior (Wei et al., 2020). Accordingly, this research investigates the relation between entrepreneurial self-efficacy and entrepreneurial innovation:

Hypothesis 3c: Entrepreneurial self-efficacy is positively and significantly related to exploratory innovation.

Hypothesis 3d: Entrepreneurial self-efficacy is positively and significantly related to exploitative innovation.

3.6.3 Entrepreneurial Proactiveness

Proactive orientation involves how new businesses plan to exceed competitors (Gao et al., 2018). This study used the proactive orientation scale developed by Gao et al. (2018), who adapted the scale from Covin and Slevin (1989). The proactive orientation scale is adopted from the Entrepreneurial Orientation (EO) theory, as one of the three dimensions developed by Covin and Slevin (1989). The three scaled items are: “Go first and force rivals to respond, Take the lead in offering new products, services, management skills and product technologies, and Tend to take the strategic attitude to compete with rivals.” The three dimensions are innovation, proactiveness and risk taking. Covin and Miles (1999, cited in Kreiser et al., 2002) explain that proactiveness and risk-taking dimensions are antecedents of innovation. The study adopts a proactive orientation dimension independently to investigate its relationship with other variables, such as environmental characteristics or firm performance, as recommended by Kreiser and Davis (2010, cited in Kollmann and Stöckmann, 2014). This section will investigate the relationship between proactive orientation and two types of innovation: exploration and exploitation innovations.

Proactivity implies the firm’s ability to exploit promising opportunities and experimenting with changes and deploying actions to gain a competitive edge (Haro-Domínguez et al., 2010). New product development is one of the main factors for firms to achieve a competitive edge; however, the decision to explore new products comes with financial risk and the potential for product failure (Isabel Jiménez-Zarco et al., 2012). Gaining

a competitive edge is driven with actions toward the expectations of future needs and trends that will result in first mover advantage (Kollmann and Stöckmann, 2014).

Gao et al. (2018) claim that proactive orientation is the strategy of new ventures to gain a competitive edge. Improving efficiency and quality is accomplished through firms' competitive advantages (Haro-Domínguez et al., 2010). Paladino (2008, cited in Isabel Jiménez-Zarco et al., 2012) notes that the higher the market proactive orientation the higher the chances of new product success. The creation of a new knowledge base is accumulated by systems and actions that are attributed to proactive oriented firms to markets (Isabel Jiménez-Zarco et al., 2012). Proactiveness according to Kollmann and Stöckmann (2010) is the facilitation of the development of new products and the improvements of existing products ahead of the competition.

Morris et al. (2011, cited in Gao et al., 2018) suggest that proactive orientation can be looked at from two angles: "leading behavior and initiative spirit" (p.179). The leading behavior can be explained as how the entrepreneurial ventures affect the environment not vice versa (Miller, 1983, cited in Gao et al., 2018), while initiative spirit consists of three parts: opportunities searching, product/brand introducing and strategy recession eliminating (Covin et al., 2006, cited in Gao et al., 2018).

Kreiser et al. (2002, p.78) explain that proactiveness is characterized by two qualities: aggressive behavior directed at rival firms and the organizational pursuit of favorable business opportunities. Kreiser et al. (2002) suggest that aggressive behavior can be explained when a firm seeks first-mover advantage to gain competitive edge over others and organizational pursuit of favorable business opportunities can be explained when a firm introduces new products or services ahead of the competition after forecasting and acting on future needs and

demands. The first-mover advantage is considered a short run strategic objective (Hughes and Morgan, 2007, cited in Kollmann and Stöckmann, 2014). Kollmann and Stöckmann (2014) argue that proactiveness' main objective is to create and to secure the competitive edge of the first-mover advantage.

Kickul and Gundry (2002) report that strategic orientation of small businesses influences the development and implementation of innovations within the small business environment. According to Kollmann and Stöckmann (2014) proactive orientation has a positive relationship with exploratory and exploitative innovations. In a study conducted in the family business domain by Craig et al. (2014) they report that proactivity influences innovation output. Lumpkin and Dess (1996) suggest that the introduction of new products or services may influence the relationship between proactiveness and firm performance. Kollmann and Stöckmann (2014) show that both types of innovations positively moderate the relationship between proactiveness and firm performance. They concluded that proactiveness positively impacts exploration and exploitation. Consequently, a high level of proactivity can help SMEs access to new knowledge and information (Amin, 2015).

However, Kollmann and Stöckmann (2010) investigated the direct relationship between proactiveness and each type of innovation: exploration and exploitation. They conclude that there is a positive relationship between proactiveness and both types of innovations, although Kollmann and Stöckmann (2010) claim that age is positively related to exploitative innovation and negatively related to exploratory innovation.

Pérez-Luño et al. (2011) conducted a study investigating the relationship between proactivity and firms' involvement in innovation adoption. The authors explain that there are two types of innovations. The first is adoption of innovation. This type of innovation is when

a firm adopts an innovation (technology, knowledge or a process) from another firm. This type can be considered as exploitative innovation. The second type is generating innovation. This type of innovation is when a firm internally develops a product, process or technology. This type can be considered as exploratory innovation. They assert that firms adopt existing innovations from other markets or other firms to quickly introduce them in the market. Their study concludes that there is no positive relationship between proactivity and firms' involvement in innovation adoption (exploitative innovation) and there is a positive relationship between proactivity and innovation generation (exploratory innovation). Accordingly, this study investigates the relation between entrepreneurial *proactiveness and innovation*:

Hypothesis 3e: Entrepreneurial proactiveness is positively and significantly related to exploratory innovation.

Hypothesis 3f: Entrepreneurial proactiveness is positively and significantly related to exploitative innovation.

3.6.4 Need for Cognition (Cognition)

Creativity is caused by the cognitive processes (Baron, 2007). Baron (2008) defined cognition as: “the processes through which information is entered into memory, processed, and retrieved for later use” (p.328). Bandura (1988) suggests that cognition plays a major role in human emotions. Bandura (1997, p.239) argues that innovativeness requires strong cognitive abilities to override old ways of thinking that hinder the exploration of new ideas and the search for new knowledge.

This study adopted Mensmann and Frese's (2019) shorter version of the need for cognition (NFC) scale, which they adapted from Cacioppo et al.'s (1984). The well-established

scale used in this study consists of nine need cognition items (Cacioppo et al., 1996; Lord and Putrevu, 2006; Lins de Holanda Coelho et al., 2020). The scale starts with questioning the level of agreement with the following nine scale items: “I would prefer complex to simple problems, I like to have the responsibility of handling a situation that requires a lot of thinking, I find satisfaction in deliberating hard and for long hours, The idea of relying on thought to make my way to the top appeals to me, I really enjoy a task that involves coming up with new solutions to problems, I prefer my life to be filled with puzzles that I must solve, The notion of thinking abstractly is appealing to me, I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought, I usually end up deliberating about issues even when they do not affect me personally.” The shorter scale decreases participant fatigue and boredom and increases attention and relevancy (Lins de Holanda Coelho et al., 2020). As explained by Cacioppo and Petty (1982) this means “the term need is used in a statistical (i.e., likelihood or tendency) rather than biological (i.e., tissue deprivation) sense” (p.118). Cacioppo et al. (1984) defined need for cognition as “an individual’s tendency to engage in and enjoy effortful cognitive endeavors” (p.306). This scale measures the entrepreneur’s motivation and drive to continue to learn and enjoy the learning process (Mensmann and Frese, 2019; Cacioppo and Petty, 1982; Cacioppo et al., 1984). Tian et al. (2016, cited in Berraies, 2022) argue that exploitative and exploratory innovations are influenced by a specific learning process.

The link between the need for cognition and innovation is supported by Venkatraman and Price (1990). Their study linked cognition innovators with a high need for cognition. Cognition innovativeness is the ability “to measure the desire for new experiences that stimulate thinking” (Venkatraman and Price, 1990, p.299). Mensmann and Frese (2019) add

that individuals with a high need for cognition are well prepared to face changes that require high problem-solving skills and enjoy the process of thinking. Creative individuals should enjoy generating new ideas; as a result, a high need for cognition is expected (Dollinger, 2003). Some studies have differentiated between creativity and innovation, suggesting that creativity involves producing new ideas and innovation involves executing new ideas (Amabile et al., 1996; Anderson and King, 1993; Rank et al., 2004, cited in Hong et al., 2018).

A study investigating the relationship between innovation behavior and the need for cognition argued that individuals with a higher need for cognition are more likely to engage in complex or challenging situations and to defend their new ideas than individuals with a low need for cognition (Wu et al., 2014). Pan et al. (2021) report that the need for cognition has a positive relationship with individual creativity. Madrid and Patterson (2016) point out that the need for cognition has a positive relationship with generating new ideas, and high need for cognition, organization fairness and openness to experience have a positive relationship with implementing new ideas. Similarly, Wood and Swait (2002) argue that “thinkers are always changers” (p.2). Information is needed to solve problems so individuals with the high NFC are more likely to actively search for information than individuals with low NFC (Chow and Luk, 2006, cited in Jin, 2016).

Mensmann and Frese (2019) argue that people with a high need for cognition have high motivation, strong commitment, and a high level of enjoyment in cognitive activities. Innovation requires strong cognitive abilities or desire to explore new ideas or to develop new products, or to exploit current resources or knowledge to further improve performance and increase efficiency (Bandura, 1997; March, 1991; Cai et al., 2021). Hong et al. (2018) suggest

that exploratory innovations focus on meeting the needs of emerging customers or markets while exploitative innovations focus on meeting the needs of existing customers or markets.

Venkatraman and Price (1990) classify cognitive innovativeness into internal and external. They explain that internal cognitive innovativeness focuses on explanatory principles, while external cognitive innovativeness focuses on know-how, new knowledge and finding facts. Studies have found that managers with high need for cognition are more likely to engage in hard tasks than in easy tasks (Petty and Evans, 2009, cited in McNally et al., 2013). In addition, Mensmann and Frese (2019) suggest that high NFC individuals are willing to commit themselves to small changes at the beginning. Contrarily, Jin (2016) reports in their study that no relationship is found between high or low NFC and adopting an innovation. The author adds that NFC influences the attitude toward adopting an innovation but not the intention to adopt it. Cacioppo and Petty (1982) argue that the level of complexity of the task the individual engages in is negatively related with the NFC. They explain that individuals with high NFC tend to find tasks with low complexity unpleasant. However, individuals with low NFC rely on others, such as celebrities to process information for their tasks (Schweizer, 2006). Cho and Park's (2014) report that low NFC individuals rely more on affect feelings than high NFC individuals do to adopt innovation is not supported. They argue that high NFC individuals are more likely to rely on cognitive processes to adopt innovation than low NFC individuals do.

Accordingly, this research will investigate the relation between need for cognition and innovation:

Hypothesis 3g: The need for cognition is positively and significantly related to exploratory innovation.

Hypothesis 3h: The need for cognition is positively and significantly related to exploitative innovation.

3.6.5 Entrepreneurial Resilience

Studies have investigated how entrepreneurs cope with the closing of their businesses and how they learn from the experience (Shepherd et al., 2009; Shepherd, 2009; Shepherd, 2003, cited in Cardon et al., 2012). Resilience currently lacks a unified definition in the literature (Ayala and Manzano, 2014, cited in Franco et al., 2021; Saad et al., 2021; Williams and Vorley, 2014). Some definitions describe resilience as “an ability to go on with life or to continue living a purposeful life, after hardship or adversity” (Tedeschi and Calhoun, 2004, p.4) and “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar et al., 2000, p.543). Renko et al. (2021) define resilience as “the ability to recover and positively adapt within the context of adversity in pursuit of personal growth” (p.131).

Resilience is a process of active adaptation that gives entrepreneurs the ability to look ahead (Windle, Bennett and Noyes, 2011, cited in Franco et al., 2021). Resilience is considered a basic behavioral skill for entrepreneurs (Pérez-López et al., 2016, p.216). Scholars identify resilience as entrepreneurial competency while others consider it indispensable for entrepreneurs (Hayek, 2012; Morris et al., 2013; Huber et al., 2014; Lans et al., 2011; Man et al., 2002, cited in Pérez-López et al., 2016). Resilient entrepreneurs are “thus portrayed as individuals who thrive despite restrictive social, cultural, and political norms or adverse conditions such as terrorism and war” (Korber and McNaughton, 2018, p.1134).

Businesses that innovate and grow in time of crises are found to be resilient (Dahles and Susilowati, 2015). March (1991) defines exploration as “things captured by terms such as

search, variation, risk taking, experimentation, play, flexibility, discovery, innovation” (p.71) while Dahles and Susilowati (2015) report that resilient businesses can innovate by finding new sources of income and supporting their employees. Russell and Faulkner (2004) argue that in an unpleasant environment, entrepreneurs tap into their creativity to achieve innovation. They add that even in a pleasant but chaotic environment, entrepreneurs will change and disrupt the status quo.

Businesses are argued to show resilience from three strategies: survival, adaptation and innovation (Dahles and Susilowati, 2015). Biggs (2011) argues that a comprehensive understanding and measurement of firms’ abilities to innovate across different activities will help to understand firms’ resilience. Pérez-López et al. (2016) argue that resilience is a “malleable competency” (p.223). In addition, resilience can be trained, developed and strengthened; however, self-efficacy beliefs should be enhanced for resilience training to succeed (Pérez-López et al., 2016; Hallak et al., 2018).

Entrepreneurs’ individual resilience and firm resilience are improved when their entrepreneurial response to shocks and challenging situations are focused on continued innovation and learning (Korber and McNaughton, 2018). A firm’s ability to learn from a crisis makes it adaptable and resilient to face future disruptions and challenges (de Sausmarez, 2007, cited in Biggs, 2011).

Successful entrepreneurs and entrepreneurs who have experienced challenging situations can mentor other entrepreneurs and enhance their self-efficacy beliefs (Bandura, 1977). Additionally, entrepreneurs who believe strongly in their abilities to cope with challenging situations are more likely to start ventures (Bullough and Renko, 2013; Duchek, 2018). However, Heer et al. (2011, cited in Perez-Lopez et al., 2016) suggest that

entrepreneurial resilience more easily forms in supported communities where business failure is not considered a disgrace.

A systematic study of more than 100 articles on resilience and entrepreneurship explains that resilience is inadequately defined in the literature and recommends the further exploration of these subjects (Korber and McNaughton, 2018). In their systematic review, Korber and McNaughton (2018) claim that resilience influences entrepreneurship and vice versa. They find that the literature on resilience and entrepreneurship focuses on the resilience of individual entrepreneurs, firms and communities. They add that the studies in their review focus mainly on the resources needed to face challenging situations ex-ante and not on ex-post challenging situations. In other words, existing studies investigate entrepreneurs' abilities, persistence or adaptivity to face challenging situations creatively and flexibly.

Korber and McNaughton (2018) also argue that resilience viewed as an “entrepreneurial thought and action” (p.1135) relates to creative transformation or innovation. Meanwhile, Williams and Vorley (2014) claim that small businesses are highly flexible and adaptable to external shocks. Therefore, small businesses can innovate to adapt to new situations. Conversely, small businesses are argued to be more vulnerable during crises and challenging situations (Lai et al., 2016).

Hallak et al. (2018) define innovation as “the process of bringing any new problem-solving idea into use” (p.232). This definition is close to that of exploratory innovation, which is described as the engagement in the development of new products, services, processes, etc. and the attainment of new knowledge (Cai et al., 2021; March, 1991; Ahsan et al., 2022; Kollmann and Stöckmann, 2014; Kuckertz et al., 2017). In their study of upscale restaurants Hallak et al. (2018) report that resilience is positively related to innovation. They conclude that

entrepreneurs with high resilience can cope with challenging circumstances with optimism and courage. They add that this optimism drives such entrepreneurs to pursue novel ideas. However, they claim that the influence of resilience on innovation is only significant for entrepreneurs with more than 10 years of experience or ownership. Bullough et al. (2014) argue that resilience positively influences entrepreneurial decision making under unpleasant and challenging situations. Another study on small and medium-sized enterprises (SMEs) reports a positive relationship between resilience and innovation (Purwanti and Hapsari, 2022).

The current research adopts the resilience scale used by Pérez-López et al. (2016) and developed by Sinclair and Wallston (2004). The scale consists of four items. The scale starts with “I look for creative ways to alter difficult situations regardless of what happens to me, I believe I can control my reaction to it, I believe I can grow in positive ways by dealing with difficult situations, and I actively look for ways to replace the losses I encounter in life.”

The relationship between resilience and innovation among SMEs, especially those in the Middle East, is generally understudied (Saad et al., 2021). In their systematic literature review, Saad et al. (2021) claim that “the majority of SMEs oriented resilience studies (i.e., 81%) have been conducted in countries in the Anglo and the European Union region clusters” (p.5). Renko et al. (2021) urge that “future research should look to uncover additional perspectives that further clarify why resilience is so important for entrepreneurs” (p.148). Meanwhile, the current study investigates the relationship between entrepreneurial resilience and innovation and thus forms the following hypotheses:

Hypothesis 3i: Entrepreneurial resilience is positively and significantly related to exploratory innovation.

Hypothesis 3j: Entrepreneurial resilience is positively and significantly related to exploitative innovation.

3.7 Social relations context

3.7.1 Wasta

Wasta is a form of social capital that entrepreneurs need in order to be successful (Baranik et al., 2018; Weir and Ali, 2020). *Wasta* is a term used and known in the Middle East and North Africa region (MENA) (Al-Twal, 2021). Hutchings and Weir (2006) argue that *guanxi* is China's positive version of *wasta*. They define *guanxi* as “*Guanxi* is a relationship between two people expected, more or less, to give as good as they get” (p.143). Al-Twal (2021) refers to *wasta* as, “the utilization of personal connections” (p.517). Hutchings and Weir (2006) add that *wasta* is a form of social network connections linked to family and “kinship ties” (p.143). These connections influence the exercise of power and information sharing.

Cunningham and Sarayrah (1993) explain that *wasta* refers to the act of mediation and being mediator. *Wasta* can be positive by promoting self-interest and can be negative by promoting social manipulation rather than competence (Cunningham and Sarayrah, 1993). Berger et al. (2015, p.456) defined *wasta* as “a process whereby one may achieve goals through links with key persons.” A wider definition is “achieving goals through key individuals, and it focuses on using close friends and family members, rather than formal means, to resolve conflicts and gain access to resources” (Baranik et al., 2018, p.209). The five items *wasta* measure used in this study is adapted from Baranik et al. (2018). The scale items are: “I receive more opportunities because of my personal network, I have at least one person who tries to get me business opportunities, I have received support for my business because of who I know, I

know people who try to get me resources for my business and I receive more opportunities because of my personal network.”

Access to specific knowledge is an important factor for capitalizing on both types of innovations: exploration and exploitation, because each type of innovation needs special knowledge, skill and practice as noted by March (1996, cited in Kollmann and Stöckmann, 2010) and Cai et al. (2021). Torres and Liang (2016) argue that knowledge sharing and collection between members in an organization is an important factor for creating new ideas and solving problems. AlHussainan et al. (2022) claim that *wasta* can aid in the accessibility to new ideas and insights from *wasta* providers. Hutchings and Weir (2006) suggest that *wasta* is “central to the transmission of knowledge and the creation of opportunity” (p.143). Baranik et al. (2018) argue that the Arab world is known as a difficult region for entrepreneurs because of *wasta*; entrepreneurs tend to acquire resources or have access to resources others do not to resolve disputes in an organization (p.210). This privilege of exclusivity of access to resources accessibility may hinder innovation because exploration innovation is about experimentation and discovery, and exploitation is about access to knowledge for improvements in current products, services or processes. Cunningham and Sarayrah (1994) claim that opportunities in Arab countries are limited and only the strongest *wastas* can help in attaining these opportunities. For example, hiring or applying for a job in the Arab world is considered highly subjective and driven by *wasta* (Hutchings and Weir, 2006; Cunningham and Sarayrah, 1994).

Arabs are described as avoiding conflict or having low tolerance for uncertainty (Ali et al., 1995, cited in Hutchings and Weir, 2006). *Wasta* has been seen in the Arab region as a short cut to the government bureaucracy or to offset an underdeveloped environment (AlHussainan et al., 2022; Cunningham and Sarayrah, 1994). As part of *guanxi* in China,

knowledge providers share knowledge only between their fellows. This act is argued as detrimental for the organization's innovation because it restricts the flow of knowledge between other members of the organization (Torres and Liang, 2016). AlHussainan et al. (2022) argue that exclusivity of access to unique insights, know-hows and high-quality resources between the *wasta* partners can influence their innovative processes and outcomes. The difference between *guanxi* and *wasta* is reciprocity. *Guanxi* requires the individual to return the favor to the provider while *wasta* does not (Torres and Liang, 2016), although Cunningham and Sarayrah (1994) suggest that the *wasta* providers seek honorary merit and social recognition. AlHussainan et al. (2022) argue that *wasta* is reciprocal in nature because providers of *wasta* still seek social and economic benefits in return.

Studies on *wasta* are mainly focused on human resource, social networks and gender (Alsarhan and Valax, 2021; Alsarhan et al., 2021; Weir and Ali, 2020; Al-Twal and Aladwan, 2021; Bailey, 2012). This finding is also confirmed by the systematic research conducted by Weir and Ali (2020). Researchers argue that there is a lack of research on different aspects of *wasta* (Al-Twal, 2021; Hutchings and Weir, 2006). Weir and Ali (2020) explain that “*Wasta* research is still in its infancy” (p.661). The exception is AlHussainan et al.'s (2022) study. Their study investigates the influence of *wasta* between Kuwaiti companies (business to business) (buyer-supplier). The authors report that *wasta* has a positive relationship with innovation. The authors explain that *wasta* can facilitate access to know-how and innovative ideas.

This study investigates the relationship between *wasta* and innovation, specifically, exploratory and exploitative innovation (see figures 3.9 and 3.10):

Hypothesis 4a: Wasta is positively and significantly related to exploratory innovation.

Hypothesis 4b: Wasta is positively and significantly related to exploitative innovation.

Figure Chapter.3.9: Social Network Relationship Exploratory Innovation

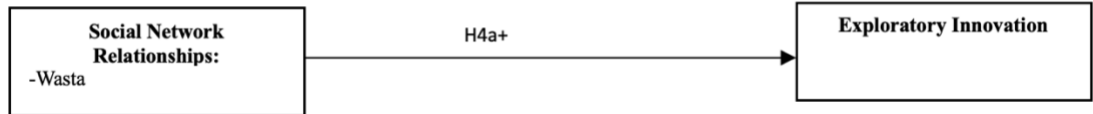
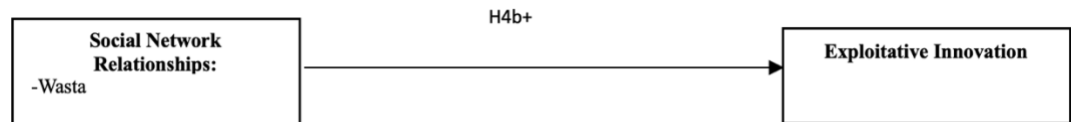


Figure Chapter.3.10: Social Network Relationship Exploitative Innovation



3.8 Conclusion

This chapter has presented the conceptual framework for the research. The sections hypothesized the relationships between exploratory innovation and exploitative innovation. The first sections developed the relationship between the four contexts (technology adoption, subjective wellbeing, entrepreneurial behavior and social network relationships) and exploratory and exploitative innovations. Table 3.1: Summary of Hypotheses presents the research hypotheses.

Table 3. 1: Summary of Hypotheses

Context	Variable	Item	/ Hypothesis
Technology context	<i>Technology Adoption</i>	<i>Performance expectancy</i>	<i>Hypothesis 1a:</i> Entrepreneur technology adoption-performance expectancy is positively and significantly related to exploratory innovation. <i>Hypothesis 1b:</i> Entrepreneur technology adoption-performance expectancy is positively and significantly related to exploitative innovation.
		<i>Intention to use</i>	<i>Hypothesis 1c:</i> Entrepreneur technology behavior intention expectancy is positively and significantly related to exploratory innovation. <i>Hypothesis 1d:</i> Entrepreneur technology adoption behavior intention is positively and significantly related to exploitative innovation.
Subjective wellbeing context	<i>Health</i>		<i>Hypothesis 2a:</i> Health is positively and significantly related to exploratory innovation. <i>Hypothesis 2b:</i> Health is positively and significantly related to exploitative innovation.
	<i>Happiness</i>		<i>Hypothesis 2c:</i> Happiness is positively and significantly related to exploratory innovation. <i>Hypothesis 2d:</i> Happiness is positively and significantly related to exploitative innovation.
	<i>Affect/mood (PANAS)</i>	<i>Negative affect</i>	<i>Hypothesis 2e:</i> Negative affect is negatively and significantly related to exploratory innovation. <i>Hypothesis 2f:</i> Negative affect is negatively and significantly related to exploitative innovation.
		<i>Positive affect</i>	<i>Hypothesis 2g:</i> Positive affect is positively and significantly related to exploratory innovation.

			Hypothesis 2h: Positive affect is positively and significantly related to exploitative innovation.
Entrepreneurial behavioral/microprocess context	<i>Entrepreneurial passion</i>		Hypothesis 3a: Entrepreneurial passion is positively and significantly related to exploratory innovation. Hypothesis 3b: Entrepreneurial passion is positively and significantly related to exploitative innovation.
	<i>Entrepreneurial self-efficacy</i>		Hypothesis 3c: Entrepreneurial self-efficacy is positively and significantly related to exploratory innovation. Hypothesis 3d: Entrepreneurial self-efficacy is positively and significantly related to exploitative innovation.
	<i>Entrepreneurial proactiveness</i>		Hypothesis 3e: Entrepreneurial proactiveness is positively and significantly related to exploratory innovation. Hypothesis 3f: Entrepreneurial proactiveness is positively and significantly related to exploitative innovation.
	<i>Need for cognition</i>		Hypothesis 3g: The need for cognition is positively and significantly related to exploratory innovation. Hypothesis 3h: The need for cognition is positively and significantly related to exploitative innovation.
	<i>Entrepreneurial resilience</i>		Hypothesis 3i: Entrepreneurial resilience is positively and significantly related to exploratory innovation. Hypothesis 3j: Entrepreneurial resilience is positively and significantly related to exploitative innovation.

1.1. Social context	<i>Wasta</i>		<i>Hypothesis 4a:</i> <i>Wasta</i> is positively related to exploratory innovation. <i>Hypothesis 4b:</i> <i>Wasta</i> is positively related to exploitative innovation.
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Table 3. 2: PANAS Items

Positive Affect Items	Negative Affect Items
1. Interested (1)	1. Distressed (2)
2. Excited (3)	2. Upset (4)
3. Strong (5)	3. Guilty (6)
4. Enthusiastic (9)	4. Scared (7)
5. Proud (10)	5. Hostile (8)
6. Active (11)	6. Afraid (12)
7. Alert (14)	7. Irritable (13)
8. Inspired (16)	8. Ashamed (15)
9. Determined (18)	9. Nervous (17)
10. Attentive (19)	10. Jittery (20)

Chapter.4 Methodology

4.1 Introduction

This chapter discusses and justifies an appropriate research methodology to address the research problem, research questions and hypotheses. The chapter stresses the role and importance of research philosophy, design, sample, questionnaire, variables, and response rate. More specifically, section 4.2 discusses and explains the philosophical assumptions and methodologies that fit this research, 4.3 discusses the research design, 4.4 details the research method and data collection instrument, 4.5 discusses the operationalization of key variables and 4.6 discusses the conclusion.

The first section, philosophy, discusses and defines ontology, epistemology, subjectivist, objectivist, positive stance and scientific realism. The section also asserts some of the arguments around objectivism and positivism. The second section is a research design that defines quantitative and qualitative approaches. The section discusses the difference between these approaches and the difference between explanatory and exploratory research designs. Then, the section explains the difference between deductive and inductive research strategies, defines the survey and explains the cross-sectional design.

The third section is the research method and data collection instrument. This section discusses the population, frame and unit of analysis, sampling approach, questionnaire construction and question design, pilot study and data collection process. The fourth section is the operationalization of key variables that discusses the dependent, independent and control variables of the study. The last section is the conclusion.

4.2 Philosophy

4.2.1 Ontology and epistemology

Saunders et al. (2015) defined research philosophy as “a system of beliefs and assumptions about the development of knowledge” (p.124). Social scientists should understand the difference between philosophical assumptions because they directly impact their research methodologies (Burrell and Morgan, 1979). Scholars have also asserted that “these philosophical assumptions about ontology and epistemology are always continuous and debatable” (Duberley et al., 2012, p.18). Cunliffe (2011) discussed Morgan and Smircich’s (1980) argument that researchers should understand their assumptions about reality in addition to the nature and purpose of knowledge before choosing a research methodology. This section outlines the two important philosophical assumptions of ontology and epistemology.

Ontology is a branch of philosophy that is concerned with how the structure of the world and reality are being expressed (Wand and Weber, 1993). Ontology deals with questions such as “What is in reality?” and “What is real?” (Hiller, 2016, p.99). Such ontological questions are concerned with both the nature and form of reality as well as how individuals acknowledge this reality (Guba and Lincoln, 1994).

Ontological assumptions help researchers shape and study their own research objects (Bahari, 2010). Blaikie (2000) stated that the root definition of ontology was “the science of being” (p.6), while Saunders et al. (2015) defined it as “assumptions about the nature of reality” (p.127) and Easterby-Smith et al. (2015) considered it as the method by which researchers think about and assume the nature of reality. Burrell and Morgan (1979) argued that social scientists must question whether “reality” exists independently of the individual or if it is the result of individual understanding and/or consciousness. As such,

the ontological assumption requires that another question should be asked; that is, how do we access or obtain knowledge about reality? This is where epistemology comes into play.

Blaikie (2007) stated that the root definition of epistemology was “the theory or science of the method or grounds of knowledge” (p.6). Epistemology therefore either refers to how researchers gain knowledge about reality or how knowledge can be acquired about reality (Scotland, 2012). In this regard, epistemological assumptions are important for helping researchers transfer their knowledge of reality to others (Burrell and Morgan, 1979). Epistemology deals with questions such as “What is the relationship between the knower and what is known? How do we know what we know? What counts as knowledge?” (Antwi and Hamza, 2015). Researchers must understand the implications of different epistemological assumptions because they need to identify their own position regarding whether knowledge can be acquired or experienced (Guba and Lincoln, 1994).

Ontology and epistemology directly impact the selection of any research methodology (Hathcoat et al., 2017). As such, the methodology follows the identification of both the ontological and epistemological questions. In this regard, research philosophies shape the researcher’s methodology (Tuli, 2010; Leavy, 2017). Methodological questions are constrained by the knowledge gained from the ontological and epistemological questions (Guba and Lincoln, 1994). Researchers chose their methodologies once they understand and use the appropriate ontological and epistemological assumptions. Methodology is therefore an outcome of philosophy (Hindess, 1977).

The strength of the philosophical assumption reinforces the research methodology (Saunders et al., 2015) which is then used to explore the knowledge gained from the two abovementioned philosophies (Parkhe, 1993). Methodology is “an approach to the process of the research, encompassing a body of methods” (Collis and Hussey, 2013). Blaikie (2007) adds that a methodology includes “discussions of how theories are generated and

tested - what kind of logic is used, what criteria they have to satisfy, what theories look like and how particular theoretical perspectives can be related to particular research problems” (p.7).

4.2.2 Subjectivist and Objectivist

The previous section discussed how ontology and epistemology affect research methodology and design. Related to this, there is an ongoing debate in the social science fields concerning the use of subjectivist and objectivist research approaches (Duberley et al., 2012; O’Gorman and MacIntosh, 2015). Cunliffe (2011, p.5) defined the subjectivist researcher “as a reflective individual, an author of meaning or an actor” and thus, the ontological position of subjective research reflects the humanistic co-creation of knowledge and understanding of purposeful agentic actions. The objectivist researcher is concerned with “a material artifact, symbol... a universal truth, law, or principle”, that is, the ontological position of objective research represents knowledge and reality as scientific (Cunliffe, 2011, p.5). Facts have no preference to the observer and are considered objective and independent of the researcher (Bunge, 1993). Social science must be rooted in philosophical assumptions because human life is either the subject or object (Burrell and Morgan, 1979).

Social science research is influenced by epistemology - put another way, the lens through which it is viewed. Subjectivist epistemology represents knowledge from a humanistic perspective and interpretation of meaning from narrative data, which lends itself to qualitative research methodologies, while objectivist epistemology is focused on independent observations from experiments and numerical data that are free of human values, thus lending itself to quantitative research methodologies that produce reliable and generalizable results (Bosancic, 2016; Crotty, 1998; Tuli, 2010). According to Howell (2013) knowledge is comprised of what we understand about reality in addition to how we

explain it, the truth, and any related theories. This not only includes how we interpret findings (results that are produced from data) but also how we understand phenomena in the abstract sense.

Indeed, Morgan and Smircich (1980) posited a subjective-objective continuum in the field of social sciences. Table 4.1 provides a summary of the different philosophical assumptions along this continuum (Morgan and Smircich, 1980). The objectivist view of the social world is analogous with positivist research. From an ontological perspective, the world from this view is real, and is thus comprised of hard, tangible objects (Carson et al., 2001). The epistemological position for the objectivist approach is the discovery of real facts from statistical and experimental data (Collis and Hussey, 2013; Crotty, 1998). At the other end of the continuum is the extreme position of the subjective philosophical stance, which is synonymous with interpretivism and phenomenology. Here, the ontological stance is that the world is a result of the human imagination, and, therefore, is not real (Holden and Lynch, 2004). According to Burrell and Morgan (1979, p.4), the subjectivist sees the social world as “nothing more than names, concepts and labels which are used to structure reality.” The epistemology for this view is anti-positivist or constructionist, which entails that the researchers can only understand the world if they engage in activities related to their research while rejecting the positivist stance of the observer in an effort to understand human behaviors (Burrell and Morgan, 1979; Creswell, 2009; Creswell and Poth, 2018; Leavy, 2017).

Table 4. 1: Subjective-Objective

	Subjectivist Approaches to social Science	Objectivist Approaches to Social Science
Core Ontological Assumptions	Reality as a projection of Human imagination	Reality as a concrete structure
basic epistemological stance	to obtain phenomenological insight, revelation	to construct positivist science
Research Methods	exploration of pure subjectivity	lab experiments surveys

Source: Subjective objective (Morgan and Smircich, 1980, p. 492)

This study adopts an objectivist approach, in particular, elements of positivist and scientific realist research. Crotty (1998) explained that research conducted through the objectivist approach typically implements a survey design and employs quantitative statistical analysis methods. Figure 4.1 provides a flowchart for this process. The process explains how the researcher starts with defining the research epistemology, objectivism, theoretical perspective, positivism, the methodology and method, survey design and statistical analysis. This type of research adopts nomothetic methodologies in which data are collected via survey questionnaires and are then subjected to scientific analyses (Goles and Hirschheim, 2000; Gill and Johnson, 2003; Neuman, 2014). The positivist and scientific realist assumption was adopted because it is better suited to quantitative methods, as opposed to the qualitative (Creswell, 2009). More specifically, this study investigated the factors affecting the motivations of technology entrepreneurs in Kuwait. This research can therefore be labeled as functionalist. Its paradigm was composed of realist, positivist, determinist and nomothetic components (Hassard, 1991; Johnson and Duberley, 2000). Burrell and Morgan (1979, p.26) further argued that the functionalist paradigm is “problem-oriented” because it aims to “provide practical solutions to practical problems.” They also

pointed out that the paradigm approaches the research problem from an objectivist view in order to explain social affairs. In this regard, the following sections elaborate on the features and design implications of the objectivist approach and positivist stance.

Figure Chapter.4.1



Source: Crotty (1998) P.5

4.2.3 Focus on the Objectivist Approach

Morgan and Smircich (1980, p.493) asserted that the objectivist, “view of the social world as a concrete structure encourages an epistemological stance that emphasizes the importance of studying the nature of relationships among the elements constituting that structure.” Bosancic (2016) identified the objectivist approach to information as having originated during the 1980s, with biologist Tom Stonier as one of its primary advocates, and summarized the concept of information as “something objective, quantitative, and mainly associated with data” (p.10). From Stonier’s (2012, p.21) perspective, “Information exists. It does not need to be perceived to exist. It requires no intelligence to interpret it. It does not have to have meaning to exist. It does not need to be understood to exist. It exists”.

The objectivist believes that knowledge about humans must be publicly verified and criticized in a similar way to knowledge derived from the natural sciences (Bahari, 2010; Diesing, 1966). According to Putnam (1982) the objectivists see the world as either separate from or external to social actors, thus predating their existence. When examining a phenomenon objectivists conceptualize it as both tangible and measurable (i.e., quantifiable) while also acknowledging that the role of the researcher is external to the

phenomenon itself (Gill and Johnson, 2003; McManus et al., 2017). This quantitative approach enables researchers to reduce a phenomenon to empirical indicators that represent the truth, and which are both analytical in nature and amenable to statistical analysis (Holden and Lynch, 2004).

Objectivism relies on facts rather than focusing on personal perceptions, which are prominent in the interpretive approach. Richardson and Fowers (1998) clarified this issue by noting that scientific knowledge is factual, and therefore not based on values, which are considered subjective views of objective situations. Objectivism relies on the researcher to find the meaning of ‘things’, and things’ meanings are independent of human consciousness (Blaikie, 2007). Objectivism encourages the researchers to eliminate their feelings and desires when looking at the external world (Bunge, 1993).

Richardson and Fowers (1998) described the naturalistic social sciences as consisting of objectivist inquiries into natural phenomena through a progressive approach that implements proven methods of obtaining knowledge about the world and its causal dynamics. However, the authors also point out that post-empiricist Thomas Kuhn (1970) challenged this perception in 1970 by arguing that “there is no ‘permanent, neutral observation language... [or] determinate set of scientific criteria that can serve as rules or necessary and sufficient conditions for resolving scientific disputes” (Bernstein, 1983, p.60 cited in Richardson and Fowers,1998, pp17-18). According to Bernstein (1983), on the other hand, objectivism is the “basic conviction that there is or must be some permanent ahistorical matrix or framework to which we can ultimately appeal in determining the nature of rationality, knowledge, truth, reality, goodness, or rightness” (p.7).

Oeberst et al. (2016) discussed the objectivist approach in their analysis of the social view of knowledge in philosophy. They referred to the ideas of philosopher Karl Popper (1968) who asserted that we should expand the traditional view of subjective knowledge

by adding the concept of objective knowledge (Popper, 1978, as cited in Oeberst et al., 2016). Popper further distinguished between thought processes and thought concerns; that is, the first are related to specific individuals, while the second are independent of individuals by virtue of the fact that the same thought may be shared by various people (Chakrabarty, 2010). Popper also contended that it is not necessary for someone to claim to know knowledge in order for that knowledge to exist, but a verbalized thought or communication in language is immediately more important as it has the potential to be understood (Wettersten, 2016). Popper stressed that thought contents, scientific methods, could only be criticized intersubjectively when made explicit, and were requisite for growth in the context of objective knowledge (Carr, 1977). Zikmund et al (2010) defined intersubjective certifiability as, “the ability of different individuals following the same procedures to produce the same results or come to the same conclusion” (p.135). They argue that qualitative research lacks intersubjective certifiability.

4.2.4 The Positivist Stance

Burrell and Morgan (1979, p.5) defined the term positivist as referring to “epistemologies which seek to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements.” Guba and Lincoln (1994, pp.109-110) argued that the ontological assumption of positivism was “naive realism” while the epistemological assumption was “dualist and objectivist.” They also asserted that the research and research problem were independent, meaning that the researcher does not influence the research problem. On the other hand, Creswell (2009, p.7) further elaborated on the positivist assumption as a postpositivist assumption which entails a “deterministic philosophy in which causes probably determine effects or outcomes.” He added that a postpositivist would investigate a research problem based on the need to identify the factors that affect the outcomes. Bell et al. (2018) asserted that

positivism's knowledge is collected through facts that provide the foundations for laws. The positivist assumption therefore enables researchers to develop quantifiable measurements related to their research problems (Cassell, Cunliffe and Grandy, 2018). Positivist research also allows researchers to use existing theories when developing their hypotheses (Saunders et al., 2015).

4.2.5 Scientific realism

Realist theory posits that the human observer cannot influence any natural or social phenomena (Blaikie, 2007). Haig (2018) adds that "Realist methodology regards science as a problem-oriented endeavor in which problems are conceptualized as constraints on their effective solution" (p.8). Putnam (1982, cited in Leplin, 1984) argued that the only philosophy that ensured the success of the scientific method was realism.

Scientific realism is considered as a modern thought of realism (Murphy, 1990). Scientific realism is "a philosophy for science" (Haig, 2018, p.7). The present study's epistemological stance is based on scientific realism (Leplin, 1984; Suppe, 1989). Scientific realism has two beliefs: there is a real world and we live in it, and scientific method can explain observable and unobservable properties of the world we live in (Haig, 2018). Scientific realism has several advantages over positivism (McKelvey, 1997). Positivism limits its focus on observable objects and considers theories as instruments with which to organize claims about observable objects (Haig, 2018). McMullin (1984) postulates that the long-term success of scientific theory supports the scientific theory claim about the entities and structure existence. Scientific realists assert that scientific claims are true. Additionally, Chernoff (2007) explains scientific realism as "the principles of our best scientific theories are true and that we are warranted in accepting the entities they postulate into our ontology" (p.399). Chernoff (2007) adds that the philosophy of scientific realism is to accept the assumptions of the scientific theories as true and the entities as real, not just

as useful. McMullin (1984) argues that these entities should be objective, and the theories should be confirmed to be true. Leplin (1984, p.1) formulated 10 claims about scientific realism (Table 4.2: Leplin’s 10 claims). Scientific realism believes that the universe is real when based on science regardless of how people view or understand it. McKelvey (1997) later argued that organizational scientists adopt scientific realism over positivism. This study follows the suggestion.

Table 4. 2: Leplin’s 10 claims

1	The best current scientific theories are at least approximately true.
2	The central terms of the best current theories are genuinely referential.
3	The approximate truth of a scientific theory is the sufficient explanation of its predictive success.
4	The (approximate) truth of a scientific theory is the only possible explanation of its predictive success.
5	A scientific theory may be approximately true, even if inferentially unsuccessful.
6	The history of at least the mature sciences shows progressive approximation to a true account of the physical world.
7	The theoretical claims of scientific theories are to be read literally, and so are definitively true or false.
8	Scientific theories make genuine existential claims.
9	The predictive success of a theory is evidence for the referential success of its central terms.
10	Science aims for a literally true account of the physical world; its success is reckoned by its progress toward achieving this aim.

4.3 Research design

Following on from the discussion pertaining to this research’s ontological and epistemological stance, this section will discuss the research design. Research design is a plan to conduct research or answer relevant research questions (Cassell, Cunliffe and Grandy, 2018). It explains the nature of the research, appropriate type(s) of data and

research strategy (Saunders et al., 2015). Therefore, explanatory and exploratory research, deductive and inductive strategies, and cross-sectional survey design will be discussed and explained in this section.

4.3.1 Quantitative and Qualitative

Quantitative and qualitative research are two different methodologies with varying approaches to research (Bryman and Bell, 2011). These two methodologies employ different research strategies, data collection tools and analysis techniques. When one considers the identification and explanation of relationships (questions frequently posed in research studies) then it may be concluded that quantitative analysis does a better job answering the questions (Bordens and Abbott, 2018; Leavy, 2017). In contrast, qualitative analysis is the best approach to understanding humanistic experiences and the meaning agentic actors assign to experiences and processes (Lakshman et al., 2000; Mohajan, 2018). This research adopts quantitative research since its focus is on the identification of concrete relationships amongst and between social factors.

Quantitative research uses a deductive approach; that is, it uses and produces numerical data. In contrast, the qualitative method uses an inductive approach, using and producing non-numerical data (Saunders et al., 2015). In this regard, the quantitative methodology is associated with positivism and realism, while the qualitative methodology is associated with subjectivism (Saunders et al., 2015).

The advantage of using a quantitative research approach is the generalization of the sample findings to a population (Rahman, 2016). Quantitative analysis focuses on the relationship between variables, specifically the relationship between an independent (causal or explanatory) variable and a dependent (outcome or effect) variable. The strength of the independent variable's effect on the dependent variable can be quantified through this analysis.

Quantitative research designs are either descriptive or experimental. On the one hand, descriptive quantitative research designs collect data relative to an existing situation, and qualitative analysis is then used to provide a measure of the association between independent and dependent variables. On the other hand, experimental quantitative research designs collect data, both before and after an intervention, whose analysis provides a measure of the causal relationship between the independent and dependent variables (Render et al., 2012).

The disadvantage of adopting a quantitative research approach is the inflexibility of quantitative methods. The quantitative methodology has an informal relationship between the researcher and the participant (Mack et al., 2005), a weakness that could lead to the participant misunderstanding or misinterpreting some of the questions in the researcher's data collection tool (Shareia, 2016). However, the qualitative research approach is flexible and has a formal relationship between the observer and the participant. Quantitative researchers argue that qualitative researchers are context-specific, and their work cannot be used for generalization (Brannen, 2005).

4.3.2 Explanatory and Exploratory

The purpose of this study is to investigate the relationship between the effects of socio-cognitive and psychological variables on entrepreneurial motivation and innovativeness in Kuwait. The study focus is cause-effect relationships. As a result, this study can be considered to be explanatory (Babbie, 2014; Gill and Johnson, 2002; Saunders et al., 2015).

Quantitative research designs are directly focused on explanatory analysis, rather than upon the kind of descriptive analysis that is associated with qualitative studies (Blaikie, 2003). Exploratory research is conducted with the goals of finding out what may be occurring, particularly in a little understood situation, or to seek new insights and ask

new questions or even to assess phenomena in a new light. Exploratory research is most used to describe a situation and to look for characteristics (Saunders et al., 2015).

Blaikie (2003) identified explanatory analysis as searching for influences. Such research may include experiments as well as surveys and can be subjected to analysis on both bivariate and multivariate relationships. In the view of Pasion (2015) survey research in many different fields including project management has been historically dominant but more and more researchers are in fact turning to qualitative or descriptive/exploratory strategies. The choice of a large-scale survey herein provides a fast, inexpensive, efficient, and accurate means of assessing information about a population (Zikmund et al., 2010).

Explanation as opposed to exploration speaks in part to what Burrell and Morgan (1979) described as the methodological debate focused on ideographic versus nomothetic comparisons. The ideographic approach is based on the view that one can only understand and therefore explain the social world by obtaining first-hand knowledge of a subject being investigated. The nomothetic approach to social science “lays emphasis on the importance of basing research upon systematic protocol and technique. It is epitomized in the approach and methods employed in the natural sciences, which focus upon the testing of hypotheses in accordance with the canons of scientific rigor” (Burrell and Morgan, 1979, p.6).

It is also clear when considering research in the social sciences and in the field of business as well, that it is vital that a researcher determines whether explanation or exploration is the central goal of the research (Christensen et al., 2015; Zikmund et al., 2010). In the proposed study, explanation is sought as to why entrepreneurs will express knowledge, interest and understanding of entrepreneurial innovation. Hence, the analysis must be viewed as Dawson (2009) suggests as explanatory – setting out to answer the questions of both “what” and “why”.

4.3.3 Deductive and Inductive

Cooper and Schindler (2014) argued that researchers choose between various strategies such as induction and deduction. In the case of induction, researchers employ a structured questionnaire that derives from observations that are based on prior assumptions, a review of relevant literature and the development of survey items that were identified in a pilot or exploratory study. Conversely, Blaikie (2000) described deductive research as examining the results of an exploratory or pilot study to determine whether there was sufficient evidence for the existence of items needing to be explained. The deductive study tends to be more qualitative in many instances than the inductive study.

The inductive approach embodies the process of making conclusions by moving from the specific and concrete to the general and the abstract. Deduction, in contrast, moves from the general and abstract to the specific and concrete (Christensen et al., 2015). Both strategies derive from assumptions about the nature of the social sciences and tend to address issues of objectivism. Blaikie (2000, p.33) asserts that “there are debates about whether it is possible to establish causal explanations in the social sciences or whether understanding, based on social actors’ accounts, is all that is possible and necessary.”

Ongoing debates regarding the appropriateness of inductive logic versus deductive logic have occurred. Early theorists in the field including Francis Bacon (1889), John Stuart Mill (1906) and William Whewell (1847) argued that inductive logic was the most appropriate scientific method (Blaikie, 2007). In it, accumulated data are used to produce generalizations about the patterns and connections between events and/or variables (Blaikie, 2000). However, in the 1930s, other theorists, including Popper, offered a logic of inquiry in the form of a deductive logic of explanation. In this case, a researcher begins with a theory providing a possible explanation and then tests the theory by deducing from

it one or more hypotheses and “then matching the hypotheses against appropriate data” (Blaikie, 2000, p.34).

Each of these logics of research design speaks to issues of causation. Inductive study would be more focused on identifying and generalizing concepts so that one can in fact develop a theory (Saunders et al., 2015). Different views of causation “have important consequences for the way we conduct social research and undertake data analysis. Add to that the use of different research strategies and serious implications for data analysis become evident” (Blaikie, 2000, p.34). Primary data are being collected in the proposed study with the goal of generalizing from samples to populations and influence between variables. Explanation is generally associated with the idea of causation or the influence between independent/predictor and dependent/outcome variables.

4.3.4 Survey

Guba and Lincoln (1994) differentiated between quantitative and qualitative research. In this regard, they pointed out that both analytical approaches may employ theories and surveys to gain information about an issue or problem, but that the quantitative perspective was the most appropriate when conducting large-scale academic investigations. Neuman (2014) asserted that surveys are developed within a positivist approach to social science. While the quantitative paradigm is often preferred by “hard science” researchers, John Stuart Mill (1843-1906) is attributed as “the first to urge social scientists to emulate their ‘older’, ‘harder’ cousins promising that if his advice were followed, rapid maturation of these fields, as well as their emancipation from the philosophical and theological strictures that limited them, would follow” (cited in Guba and Lincoln, 1994, p.106).

Researchers such as Easterby-Smith et al. (2015), Zikmund et al. (2010) and Blaikie (2000) have stressed that surveys are quantitative research strategies that seek to simultaneously explain and explore. Surveys therefore tend to be associated with large-

scale studies. According to Denscombe (2010) and Zikmund et al. (2010) quantitative surveys use numbers as units of analysis and are thus often associated with researcher detachment. For the most part, this entails analyses of specific variables to answer closed-ended questions. Denscombe (2010, p.242) elaborated on this by saying that “Quantitative data take the form of numbers. They are associated primarily with strategies of research such as surveys and experiments, and with research methods such as questionnaires and observations.” Zikmund et al. (2010) argue that the survey participants’ responses will not be influenced or affected by the researcher: “The number will be the same no matter what researcher is involved in the analysis” (p.135).

The design selected for this study consists of large-scale research that is classified based on the number of contacts with the study population. It is nonexperimental in nature and permits a survey approach through either a new data collection instrument or an existing one with previously established reliability and validity (Kumar, 2011). The targeted population is Kuwait’s entrepreneurs (owners/managers) of small and medium businesses.

Burrell and Morgan (1979) made the case that all social scientists approach their subjects with pre-existing explicit/implicit assumptions about both the social world and the way it should be investigated. This study set the goal of obtaining information about how individuals are motivated to start new ventures and what affects their motivations. As the sampling approach discussed below will demonstrate, such a survey must be theoretically grounded; that is, elements or items related to the instrumentation must be based on a specific theory.

The theories chosen herein are inclusive of the entrepreneurial innovation: exploratory and exploitative innovation (Kollmann and Stöckmann, 2014), two dimensions of the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003;

Moghavvemi et al., 2016), happiness (Eddolls and Rees, n.d), general health (Hays et al., 1993), mood (Watson et al., 1988), entrepreneurial passion (Costa et al., 2018; Cardon et al., 2013), entrepreneurial self-efficacy (Hopp and Stephan, 2012; Dimov, 2010), need for cognition (Cacioppo et al., 1984), entrepreneurs' proactivity (Covin and Slevin, 1989), entrepreneurial resilience (Sinclair and Wallston, 2004) and *wasta* (Baranik et al., 2018). When combined with entrepreneurial innovation, each of these theories permit the researcher to create a survey that is useful for gathering information about the predisposing factors that affect or influence innovation based on their respective theoretical aspects.

Survey research can be analytical or descriptive. This indicates to research design issues or problems that must be addressed prior to any attempt at data collection or, for that matter, the survey instrument itself. Gill and Johnson (2003) asserted that an analytic survey requires the researcher to specify independent, dependent and extraneous values, as opposed to the descriptive survey which identifies the phenomena associated with variances that the researcher intends to describe.

Both the analytic and descriptive survey types are frequently used in business research (Easterby-Smith et al., 2015). Survey data can be collected either through self-completed questionnaires or those administered by interviewers. Given advancements in mobile technology and the immediate availability of online survey sites (e.g., Qualtrics, online-electronic administration) the type of survey proposed herein implements self-completed questionnaires. Web-based surveys have rapidly become commonplace, with tools "such as Qualtrics, Survey Monkey, and Verint [having] dramatically reduced the cost of Web surveys by making each step in the process easy for those without technical training" (Easterby-Smith et al., 2015, p.222). The recent "Covid-19" pandemic made it hard for face-to-face meetings since governments banned such meetings in closed areas

(KUNA, 2020; Evens, 2020). For the above reasons, this study implemented an internet-based survey as its primary research design.

The advantages of questionnaire-based surveys include providing a relatively simple and straightforward approach to studying attitudes, beliefs, values, and motives. Also advantageous in the survey methodology is the capacity to achieve high amounts of data standardization and the capacity for adaptation to collect generalizable information from almost any human population. Further, in a self-administered survey, participants achieve anonymity which can encourage frankness (Bryman and Bell, 2011).

4.3.5 Cross-Sectional Design

This study has earlier been identified as explanatory and for this research a cross sectional research design is the most suited for this study (Neuman, 2014). Visser et al. (2000) defined cross-sectional surveys as “the collection of data at a single point in time from a sample drawn from a specified population” (p.225). Neuman (2014) added that the cross-sectional data is gathered at the same time and creates a “snapshot” or a picture of the targeted social life. In cross-sectional studies, the focus is on relationships between and among variables in a single group. There is no attempt to set up different groups of participants. In the simplest version of cross-sectional research as described by Zikmund et al. (2010), as well as Saunders et al. (2015), all measures are taken at the same time or within a relatively short time frame. The cross-sectional study is probably the most widely used design in social research. It is often employed in conjunction with the survey method of data collection. The survey method itself is the most commonly used method because the pattern of relationships between variables may be interesting in its own right or there may be a particular concern for establishing causal links.

In discussing the cross-sectional design, Blaikie (2000, p.118) contends that “One of the problems in the social sciences is that the phenomenon we want to explain may have

a number of ‘causes’ that interact with each other and/or are connected in a sequence or network, and that these ‘causes’ may act differently under different conditions.” In cross-sectional research, the variables included in the study are those that are needed to produce answers to specific research questions that are governed by the purposes of the study and by the theory that is being considered. In the cross-sectional research approach, one examines explanatory variables and outcome variables respectively rather than dependent variables where one looks for change or independent variables manipulated by the experimenter (Gill and Johnson, 2002).

One of the advantages of the cross-sectional study is that it is possible to include more explanatory variables in such a design than is feasible in experimental or group comparison relational designs. The specific variables are included because of their relevance to one’s research question. There is also a technical requirement linked to the requirements of statistical analysis. It is sometimes proposed that there should be a minimum of 15 participants per variable (Saunders, et al., 2015).

The choice of participants in a cross-sectional study is important. Research questions effectively determine participant choice. An issue is the homogeneity of the group of respondents or subjects. As Blaikie (2003, p.119) has pointed out: “It is impossible to reduce all of this to a combination of experimental and control groups, and if such a thing was attempted, it is likely to produce artificial distortions in the phenomenon.” Blaikie (2003) disagrees with others such as Saunders et al. (2016) and claims that it is a conventional practice in cross-sectional research studies to divide variables into independent or predictive variables on the one hand and dependent or outcome variables on the other.

Cross sectional research design is the most suited research design for this study. When the objective of research is prediction, the use of predictor and outcome as names of

variables is appropriate. Blaikie (2003, p. 119) said that “any attempt to establish influence between variables in cross-sectional research of necessity requires assumptions to be made.” These assumptions are critical in helping, as will be noted below, to identify a sample of individuals who are appropriate for a particular research project.

4.4 Research Method and Data collection instrument

4.4.1 Sampling

This section will discuss the sampling process that has been adopted. This section is divided into 4.4.1.1 population, 4.4.1.2 Frame and Unit of Analysis, 4.4.1.3 sampling approach and 4.4.1.4 maximizing response rate.

4.4.2 Population

The selection of a population to be studied via a survey employing a cross-sectional strategy and design is based entirely upon the research questions that are being posed. In the proposed study, the focus is on identifying the ways in which existing entrepreneurs and potential entrepreneurs deal with issues related to exploration and exploitation of innovations.

Such a study moves in the present instance from a pilot stage to a final stage, defining the population of the pilot study as entrepreneurs. In terms of the pilot test of the survey between five and 10 entrepreneurs will be randomly selected as recommended (Johanson and Brooks, 2010).

Defining one’s population in a survey requires a degree of homogeneity (Gill and Johnson, 2002). By eliminating some extraneous variables using statistical techniques such as multiple regression during data analysis, the researcher in a cross-sectional study is using an approach that is different from that of experimental studies that use physical controls. As Gill and Johnson (2002, p.98) have claimed: “This approach to the control of extraneous variables thus necessitates the prior measurement of all the pertinent variables through their

inclusion in the questionnaire format... These issues thus make the prior conceptualization of the research problem, aided by a careful analysis of the existing literature, vital to the design of analytic surveys.”

The population of any study is broadly defined as “the entire group of subjects the researcher wants information on” (Stockemer, 2019, p.57). Additionally, Check and Schutt (2011) define a population as “The entire set of individuals or other entities to which study findings are to be generalized” (p.149). Sapsford (2007) adds that the population can be objects, people or institutions, and argue that population can be defined statistically as “the entire set of objects about which we wish to speak” (p.6). Great care must be taken in identifying the key characteristics of the population to be studied. A population refers to all possible cases. In this instance, it would therefore include entrepreneurs of small and medium businesses in Kuwait.

4.4.3 Frame and Unit of Analysis

The unit of analysis is one of the most important components of a research project. It consists of the major entity that one is analyzing in the study. Individuals, groups, artifacts, geographical units and social interactions are all possible units of analysis in a research project (Dawson, 2009). The frame consists of the unit of analysis being analyzed in the study and should be recognized as determining who will be included in a population. Frames are central organizing ideas that “provide context, structure, and meaning to information, facilitating a specific interpretation of an issue (David and Baden, 2017).

Frame analysis organizes both qualitative and quantitative approaches along three dimensions. These dimensions are the capture of latent versus manifest meanings, adherence to inductive versus deductive processes, and their focus on generic or issue-specific meanings. Thus, the frame analysis shapes the determination of the unit of analysis that will be employed in a study. The universe determines the population, clusters are

identified as in the case of specific entrepreneurial business sectors, the sampling frame is the total number of potential subjects, and the sampling unit is the individual who participates in the study. There is an overarching target population that is defined by a sampling frame (Saunders et al., 2015).

The diversity contained within the pilot study is replaced in the final study by framing the unit of analysis as individuals who are currently associated with entrepreneurial business development or activity (Zikmund et al., 2010). The typical method of analyzing a cross-sectional survey is to divide the sample into appropriate subgroups (Zikmund et al., 2010). In each of the two studies proposed the pilot study involved a randomly selected sample of between five and 10 entrepreneurs. The large-scale survey is based on convenience access to small and medium businesses' entrepreneurs who have registered in the National Registry managed by Kuwait National Fund.

Babbie (2010) differentiates between the random and the convenience sample by noting that randomization is possible should a convenience sample be sufficiently large enough to provide the researcher with the option of randomization. The sample will represent the entrepreneurs who have registered in the National Registry. As a result, convenience sampling will be used. The difficulty of finding and reaching entrepreneurs in Kuwait is another reason for adapting the convenience sampling technique. Easterby-Smith et al. (2015) defined convenience sampling as "selecting sample units on the basis of how easily accessible they are; hence the term 'convenience sampling'" (p.82). The National Fund have reported to the researcher that 1205 businesses have registered in the National Registry as of the end of September 2021. Bryman (2012) argues to use pilot studies for convenience sampling when used.

Similarly, this large-scale survey could be divided into other subgroups as described by Zikmund et al. (2010) as based on a particular characteristic such as the country in which respondents are located. In any event, individuals comprise the unit of analysis.

4.4.4 Sampling Approach – Strategy

Sampling is an important issue in the design of any research project. Blaikie (2000) stated that sampling must above all else be adequate with respect to the population parameters. Sampling must also be based upon several criteria which define who is eligible to participate in the research study. The pilot study discussed herein includes business owner managers. Here, one could be said to be employing what Blaikie (2000) as well as Zikmund et al. (2010) would characterize as a form of convenience samples that are also probability samples. Whitehead et al. (2015) argued that the pilot trail could help in anticipating what could be observed in the main trail.

Based upon Babbie (2010) and his comments regarding the number of potential subjects who must be approached for participation to achieve a specific response rate, this study seeks a response rate of over 10 percent which would require a minimum of 120 completed survey responses obtained either through online-electronic administration or personal contacts and face-to-face administration of the survey. Bryman (2012) argues that response rates are between 10-15 percent. However, low response rates are common in emerging economies (Harzing, 2006).

Zikmund et al. (2010) stated that sampling in all its many forms is vulnerable to a variety of errors. Even with technically proper random probability samples, statistical errors do occur because of chance variation in the elements selected for the sample. These errors include systematic error resulting from some imperfect aspect of the research design or a mistake in the execution of the research. Respondent rate can give rise to a non-response error or response bias while there are few instances in which even a large-scale

sample will not require a careful assessment of the possibility that sampling errors have occurred.

4.4.5 Maximizing Response Rate

The response rate is certainly an important issue in designing a sampling strategy (Babbie, 2014). Most large-scale surveys require the existence of a population that itself is sufficient to generate a great deal of data. In the present research project, the goal of the pilot study is to gain completed responses from between five and 10 entrepreneurs. The size of this population permits randomization.

To maximize a response rate Babbie (2010) recommends that one should provide prior notification in a professional communication with potential respondents, explaining the purpose of the survey and its potential benefits at both the pilot and large-scale levels. An effective cover letter or email announcing the researcher's intent that also directs potential respondents in either study to the online-electronic administration site is required. At the site, further explanation of the survey's purpose and contents should be included. It goes without saying, said Blaikie (2000), that the quality of the survey itself will influence the willingness or interest of individuals with respect to participation.

It should be noted that online-electronic administration, Qualtrics, itself offers in-house survey design, administration and data collection for self-administered questionnaires. Babbie (2010) and others encourage, when possible, the use of some incentive to spur participation, this is often too expensive for students. Using a primarily online format to disseminate the survey does encourage an improvement in response numbers but it is advisable to include a contact name and contact details for respondents who may have questions regarding participation. To improve response rates, one might also consider using a follow-up email(s) to a selected non-respondent reminding them of the opportunity being made available to them (Tomaskovic-Devey et al., 1994).

In addition, to maximize a survey's response rate Saunders et al. (2015) recommended that the survey layout should be carefully designed, the questionnaire questions should be clear, the purpose of the survey should be explained and the survey should be planned and administered during execution (see Appendix II).

Finally, Blaikie (2000) has commented that when inferential analysis statistics are used, many professionals consider an 85 percent response rate to be appropriate. The reason for this is that as the response rate declines, it becomes possible that the sample will be unreliable or biased. It is very difficult to achieve an 85 percent response rate in most research. It is for this reason that a 25 percent response rate was selected for the large-scale survey which would therefore generate 250 completed surveys ideally divided in half according to whether a respondent is an established entrepreneur, ex-entrepreneur (failed startup) or is just beginning the process of developing an entrepreneurial startup. In addition, the Covid-19 situation may affect the response rate and it could be considered as unknown factor that may affect the response rate.

4.4.6 Questionnaire construction and question design:

4.4.7 Questionnaire validity:

A questionnaire is a systematized and standardized set of questions (Gilbert and Stoneman, 2015). Survey questions should be designed to be specific and easy to read so that the participant/respondent understands the questions and answers appropriately (Sapsford and Jupp, 2006; Saunders et al., 2015). Smith (1991) defines validity as “the degree to which the researcher has measured what he has set out to measure” (p.106).

Brace (2013) recommends that the survey question should be framed as short and meaningful so as not to compromise its meaning and intended information. Survey questions measure a specific variable: dependent or independent (Oppenheim, 2000). Saunders et al. (2015) call these measures internal validity. Dillman (2000) argues that

planning and preparing the survey questions as short and concrete reduces the possibility of a measurement error.

Entrepreneurial intentions questions are closed-ended questions (Liñán et al., 2011). These questions were considered as self-reported measures reported directly by respondents (Lavrakas, 2008) whose major disadvantage is a measurement error (Dillman et al., 2014). Therefore, the questionnaire's vocabulary and design were discussed with the supervisory team to help overcome any measurement errors caused by unclear wording and sentence structure (Dillman, 2000; Oppenheim, 2000). As a result, the survey participant answered the survey questions correctly.

Scales are important tools for business research to measure knowledge, behavior and attitude (Cooper and Schindler, 2014). Level of measurement scales consist of four types: nominal, ordinal, ratio and interval (Zikmund et al., 2010).

Nominal scales are nonquantitative and used to name, categorize or classify the construct values, while ordinal scales allow the variable to be ranked (Bordens and Abbott, 2018). Christensen et al. (2015) argue that the most utilized quantitative scale reflects ratio.

There are four well-known methods of attitude scaling. The first is Bogardus and the Bogardus scale is a social-distance scale (Oppenheim, 2000). The second is the Thurstone scale that uses a consensus scale approach. The scale is constructed by a panel of judges to match it with the relevant research topic or area (Kothari, 2004). The third is a Likert scale. It is widely used in research and is considered a ratio scale (Cooper and Schindler, 2014). A Likert scale provides the participant with statements like how do they agree or disagree. It uses a four-, five-, six- or seven-point rating scale (Saunders et al., 2015). A Likert scale is used to measure intensity of feelings (Bryman, 2012). The last scale is Guttman's. It consists of a series of statements for the respondents to express their

agreement/disagreement then a final total score, with each statement forming its own series and then a final score is calculated (Kothari, 2004).

4.4.8 Measurement items

Measurements in quantitative research are distinct and should be planned and conducted before the data collection process. Cooper and Schindler (2014) recommend using pre-tested and pre-validated survey items. They argue that these measurement items will save time and effort for the researcher; they also warn the researcher to check the validity and reliability of these questions. This research's measurement items were adapted from a literature review conducted by the researcher.

4.4.9 Structure and translation of the questionnaire

The questionnaire will be developed in English, translated into Arabic, and then translated back into English. Brislin (1986) suggested this process of back translation, explaining it as "one bilingual translates from the source to the target language, and another blindly translates back to the source" (p.159). This process helps in evaluating the translation quality to ensure that both original versions match (Harkness and Schoua-Glusberg, 1998). The final questionnaire consisted of 14 pages (see Appendix II). However, participants completed the questionnaire using an online instrument (Qualtrics).

The questionnaire consists of 10 sections. The first section addressed general information about the participant, as Dillman (2000) and Dillman et al. (2014) recommended, such as age, gender, firm size, etc. The second section addressed exploratory and exploitative innovation. The third section handled technology adoption. The fourth section gathered information about subjective wellbeing. The fifth section gathered information about entrepreneurial passion. The sixth section addressed entrepreneurial self-efficacy. The seventh section collected data on the need for cognition.

The eighth section addressed entrepreneurial proactivity. The ninth and tenth managed entrepreneurial resilience and *wasta*, respectively.

4.4.10 Pilot study

A pilot study will be performed before administering the survey. This study will help verify the validity of the measurement items in the questionnaire, evaluate the flow of the questions, and determine the adequacy of instructions (Bryman, 2012; Saunders et al., 2015). The survey will be piloted on five to 10 owners/managers and academics.

4.4.11 Data collection process

In this study, the data was collected through online survey tool, Qualtrics. The targeted data list is the National Registry (NR) for small and medium businesses in Kuwait. The data list was accessed through broker. The broker is the National Fund of small and medium businesses (NF) who manages the NR.

Due to privacy laws, the NF was responsible for distributing the survey to the registered owner/managers through the NF email. The NF employed a public relations member to manage the researcher's concerns and requests. See attached the letter sent for the NR participants by the NF Figure 4.4 National Fund Letter. The survey started in December 2021 and closed in May 2022. The NF sent three reminders for the participants to participate in the survey before it was closed in May 2022.

4.5 Operationalization of key variables:

One of the important characteristics of deduction is the operationalization of concepts to be measured quantitatively. It is considered a translation of concepts into tangible indicators or definitions (Saunders et al., 2015). Bryman and Bell (2011) defined operationalization as “refers to the operations by which a concept is measured” (p.151). This section presents the definitions and operationalization of the variables adopted in this

research. The dependent variable is presented in section 4.5.1., the independent variable in section 4.5.2., and the control variables in section 4.5.3.

4.5.1 Dependent Variable: Entrepreneurial innovation

The dependent variable in this study is the entrepreneurial innovation. Entrepreneurial innovation has two dimensions: exploratory and exploitative. Table 4.2: operationalization of the dependent variable, presents the dependent variable. The exploratory innovation variable is measured using the 4-item scale and the exploitative innovation variable is measured using the 3-item scale used by Kollmann and Stöckmann (2014). The items are measured on a 5-point Likert scale, in which 1 = “Strongly disagree” and 5 = “Strongly agree.”

4.5.2 Independent variables: performance expectancy, intention to use, passion, self-efficacy proactivity, need for cognition, resilience, happiness, health, mood (positive and negative affect) and *wasta*

This study investigates the systematic relations between performance expectancy, intention to use, passion, self-efficacy, proactivity, need for cognition (cognition), resilience, happiness, health, mood (positive affect and negative affect), *wasta* and the entrepreneurial innovation of entrepreneurs in Kuwait. Therefore, the study has 12 independent variables: performance expectancy, intention to use, passion, self-efficacy, proactivity, need for cognition (cognition), resilience, happiness, health, positive affect, negative affect and *wasta*. Table 4.3: operationalization of the independent variable, presents the independent variables.

Table 4. 3: Operationalisation of the dependent variables

Variable	Measured as	Measurement scale	Empirical foundations	Items
Entrepreneurial Innovation	Entrepreneurs exploratory Innovation and exploitative innovation	Four Items for <i>Exploratory</i> innovation three items for <i>Exploitative</i> innovation	Kollmann, T. and Stöckmann, C., 2014. Jansen et al. (2006) and Lubatkin et al. (2006)	<p>Survey Questions measuring <i>exploration</i> innovation:</p> <ul style="list-style-type: none"> (1) We always accept demands that go beyond existing goods and services (2) We regularly approach new opportunities in new markets (3) We regularly experiment with new products and services in existing markets. (4) We perpetually develop creative ways to satisfy customer needs <p>Survey Questions measuring <i>exploitative</i> innovation:</p> <ul style="list-style-type: none"> (1) We continuously improve the efficiency of the creation of goods or services (2) We perpetually reduce the costs of the creation of goods or services without quality loss (3) We continuously increase the levels of automation in the creation

Table 4. 4: Operationalisation of the independent variables

Variable	Measured as	Measurement scale	Empirical foundations	Items
Performance Expectancy	Entrepreneur's expected outcomes in using IT	5 items for Performance Expectancy 1= Strongly Disagree 5= Strongly Agree	Moghavvemi et al., 2016 Venkatesh et al., 2003	Survey Questions measuring IT-Performance Expectancy: (a) I find the Information Systems innovation to be useful in my business (b) Using the Information Systems innovations enable me to accomplish tasks more quickly (c) Using Information Systems innovation increases my productivity (d) Using Information Systems innovation, increases my chances of getting more benefit in my business (e) Using Information Systems innovation gives me competitiveness power in my business
Intention to use	The degree to which an entrepreneur has formulated conscious plans to use or reject an IS innovation to improve their business	5 items for Intention to use 1= Strongly disagree 5= Strongly agree	Moghavvemi et al., 2016 Venkatesh et al., 2003 Krueger and Brazeal, 1994; Stopford and Baden-Fuller, 1994	Survey Questions measuring IT-Intention to use: (a) I predict I would use Information Systems innovation, if it is available in the future (b) My personal philosophy is to do whatever it takes using Information Systems innovation in the future (c) I have very seriously thought of using Information Systems innovation in my business if it is available in the next 2 months (d) I plan to use current Information Systems innovation in my work in the next year (e) I intend to use similar Information Systems innovation technology in the future

Happiness	General Wellbeing	One item for happiness 1= Very unhappy 5- Very happy	Eddolls and Rees (n.d)	Overall, how happy did you feel yesterday?
Health	General health	One item for general health 1= Poot 5= Excellent	Hays et al., 1993	In general, would you say that your health is:
Positive Affect	10 items measuring positive mood of a person	10 items 1= Never 2= Rarely 3= Sometimes 4= Often 5= Always	Watson et al., 1988	Survey Questions measuring positive affect: 1- Interested (1) 2- Excited (3) 3- Strong (5) 4- Enthusiastic (9) 5- Proud (10) 6- Active (11) 7- Alert (14) 8- Inspired (16) 9- Determined (18) 10- Attentive (19)
Negative Affect	10 items measuring negative mood of a person	10 items 1= Never 2= Rarely 3= Sometimes 4= Often 5= Always	Watson et al., 1988	Survey Questions measuring negative affect: 1- Distressed (2) 2- Upset (4) 3- Guilty (6) 4- Scared (7) 5- Hostile (8) 6- Afraid (12) 7- Irritable (13) 8- Ashamed (15)

				9- Nervous (17) 10- Jittery (20)
Entrepreneurial Passion	entrepreneurial passion the experience of innovation in different domains of entrepreneurship (inventing, founding and developing)	13-item 1= Strongly disagree 5= Strongly agree	Cardon et al. (2012) Costa et al. (2018)	Survey Questions measuring entrepreneurial passion: <ol style="list-style-type: none"> 1. It is exciting to figure out new ways to solve unmet market needs that can be commercialized 2. Searching for new ideas or products/services to offer is enjoyable to me 3. I am motivated to figure out how to make existing products/services better 4. Scanning the environment for new opportunities really excites me 5. Inventing new solutions to problems is an important part of who I am 6. Establishing a new company excites me 7. Owning my own company energizes me 8. Nurturing a new business through its emerging success is enjoyable 9. Being the founder of a business is an important part of who I am 10. I really like finding the right people to market my product/service to 11. Assembling the right people to work for my business is exciting 12. Pushing my employees and myself to make our company better motivates me

				13. Nurturing and growing companies is an important part of who I am
Entrepreneurial proactiveness	measures the strategy of new ventures to gain competitive edge	3 items 1= Strongly disagree 5= Strongly agree	Gao et al. (2018) Covin and Slevin (1989)	Survey Questions measuring entrepreneurial proactiveness: <ol style="list-style-type: none"> 1. Go first and force rivals to respond 2. Take the lead in offering new product, service, management skills, and product technologies 3. Tend to take the strategic attitude to compete with rivals
Need for Cognition	measures the entrepreneur's motivation and drive to continue learn and enjoy learning process	9 items 1= Strongly disagree 5= Strongly agree	Mensmann and Frese's (2019) Cacioppo et al.'s (1984)	Survey Questions measuring need for cognition: <ol style="list-style-type: none"> 1. I would prefer complex to simple problems 2. I like to have the responsibility of handling a situation that requires a lot of thinking 3. I find satisfaction in deliberating hard and for long hours 4. The idea of relying on thought to make my way to the top appeals to me 5. I really enjoy a task that involves coming up with new solutions to problems 6. I prefer my life to be filled with puzzles that I must solve 7. The notion of thinking abstractly is appealing to me 8. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought

				9. I usually end up deliberating about issues even when they do not affect me personally
Entrepreneurial self-efficacy	measures how confident the entrepreneur is in starting a successful business	4 items 1= Strongly disagree 5= Strongly agree	Dimov 2010 Hopp and Stephan (2012) Drnovšek et al., 2010	Survey Questions measuring entrepreneurial Self-efficacy <ol style="list-style-type: none"> 1. Starting this new business is much more desirable than other career opportunities I have 2. If I start this new business, it will help me achieve other important goals in my life 3. Overall, my skills and abilities will help me start this new business 4. My past experience will be very valuable in starting this new business 5. I am confident I can put in the effort needed to start this new business
Entrepreneurial Resilience	Measures the dynamic process by which an individual develops a positive adaptation	4 items 1= Does not describe me at all 5= Describes me very well	Sinclair and Wallston (2004) Pérez-López, González-López and Rodríguez-Ariza (2016) Limonero et al. (2014)	Survey Questions measuring entrepreneurial resilience: <ol style="list-style-type: none"> 1. I look for creative ways to alter difficult situations. 2. Regardless of what happens to me, I believe I can control my reaction to it. 3. I believe I can grow in positive ways by dealing with difficult situations. 4. I actively look for ways to replace the losses I encounter in life.

Wasta	Measures the utilization of personal connections for success	5 items 1= Strongly disagree 5= Strongly agree	Baranik et al. (2018)	<p>Survey Questions measuring wasta:</p> <ol style="list-style-type: none"> 1. I receive more opportunities because of my personal network 2. I have at least one person who tries to get me business opportunities 3. I have received support for my business because of who I know 4. I know people who try to get me resources for my business 5. I receive more opportunities because of my personal network
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4.5.2.1 The independent variable: Performance expectancy

Performance expectancy is defined as “the degree to which an SME owner perceives using IT innovation would be free of effort or takes less effort or is user-friendly” (Moghavvemi et al., 2012, p.235). Performance expectancy measures users’ decision to adopt information technology (Venkatesh et al., 2003; Moghavvemi et al., 2011; Ibrahim et al., 2018). It is one of the ten attributes of Technology Adoption Decision and Use (TADU) developed by Moghavvemi et al. (2016) and is measured using 5 items.

4.5.2.2 The independent variable: Intention to use

Moghavvemi et al. (2012) define intention to use, also called behavior intention, (BI) as “indicating how SME owners are willing to try and exert effort in order to perform the behavior” (p.236). It predicts technology use (Ibrahim et al., 2018). BI is considered a major factor in the use of Information Technology (Shiau and Chau, 2014). BI is measured using a 5-item scale of intention to use developed by Moghavvemi et al. (2012).

4.5.2.3 The independent variable: Health

Health here is defined as general health. The measure is comprised of one item question. The question is adopted from the 36-item Rand health survey 1.0 (Hays et al., 1993). The question is intended to measure the general health of an entrepreneur.

4.5.2.4 The independent variable: Happiness

Happiness is defined as “good life” (Diener, 2000). The measure is one item question adapted from the Office for National Statistics’ four questions to measure personal well-being called ONS4 (Eddolls and Rees, n.d.). The scale is intended to measure the influence of happiness on entrepreneurial innovation.

4.5.2.5 The independent variable: Negative Affect

Negative affect is defined as “experiencing few unpleasant emotions and moods” (Diener, 2000, p.34). Negative affect is part of the 20-items PANAS scale developed by

Watson et al. (1988). The scale consists of 10 items. It is concerned with the entrepreneur's negative feelings/moods using trigger keywords like scared, hostile, guilty etc.

4.5.2.6 The independent variable: Positive Affect

Positive affect is defined as “experiencing many pleasant emotions and moods” (Diener, 2000, p.34). Positive affect is part of the affect (PANAS) 20-items scale developed by Watson et al. (1988). The positive affect scale consists of 10-items. The scale measures the entrepreneur's mood when they are involved in starting a business. Positive affect is concerned with high-activation types of positive affect, such as feelings of excitement, elation and alertness (Baron et al., 2012).

4.5.2.7 The independent variable: Entrepreneurial passion

Entrepreneurial passion is defined as “(1) a consciously accessible, intense positive feeling, and (2) entrepreneurial passion results from engagement in activities with identity meaning and salience to the entrepreneur” (Cardon et al., 2009, p.515). The measure consists of 13 s developed by Cardon et al. (2013). The scale measures “the experience of innovation in different domains of entrepreneurship (inventing, founding and developing)” (Cardon et al., 2013, p.374).

4.5.2.8 The independent variable: Entrepreneurial Self-efficacy

Self-efficacy is defined by Bandura (1977) as the individual's belief in their ability to execute actions. Entrepreneurial self-efficacy is entrepreneurs' belief that they have the skills to develop a working business (Hopp and Stephan, 2012). The scale measures how confident the entrepreneur is in starting a successful business. The scale includes 5-item measures developed by Dimov (2010) and adopted by Hopp and Stephan (2012).

4.5.2.9 The independent variable: Entrepreneurial proactiveness

Proactivity implies that the firm has an ability to exploit promising opportunities and experiment with changes and deploy actions to gain a competitive edge (Haro-

Domínguez et al., 2010). Gao et al. (2018) define proactive orientation as a reflection of new strategy to surpass competition or to maintain a competitive advantage. Proactive orientation involves how new businesses plan to exceed competitors. The measure is one of three dimensions of the Entrepreneurial Orientation (EO) theory developed by Covin and Slevin (1989). The three items scale was developed by Gao et al. (2018), who adapted the scale from Covin and Slevin (1989). The scale measures the leading and initiative spirit of an entrepreneur.

4.5.2.10 The independent variable: Need for Cognition

Need for Cognition (NFC) is defined as “an individual’s tendency to engage in and enjoy effortful cognitive endeavors” (Cacioppo et al., 1984, p.306). NFC measures how motivated and driven the entrepreneur is to keep learning and to enjoy the learning process. The measure consists of nine items adopted from Mensmann and Frese (2019).

4.5.2.11 The independent variable: Entrepreneurial Resilience

Resilience is defined as “an ability to go on with life or to continue living a purposeful life, after hardship or adversity” (Tedeschi and Calhoun, 2004, p.4) and “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar et al., 2000, p.543). The scale is measured using a 4-item scale used by Pérez-López, González-López and Rodríguez-Ariza (2016). The scale was originally developed by Sinclair and Wallston (2004) as the Brief Resilient Coping Scale, which used a 5-point Likert scale, where 1 means “the statement does not describe you at all” and 5 means “it describes you very well.”

4.5.2.12 The independent variable: Wasta

Wasta is defined as “achieving goals through key individuals, and it focuses on using close friends and family members, rather than formal means, to resolve conflicts and gain access to resources” (Baranik et al., 2018, p.209). The five items measure is developed

by Baranik et al. (2018). The scale measures entrepreneurs' social connection influence on their success.

4.5.3 Control Variables

This research used a number of control variables that could potentially influence the relationships being tested. The control variables are firm age, firm industry, firm size, owner/manager age, owner/manager gender and owner/manager education. Table 4.4: operationalization of control variables presents the control variables.

Firm age is measured in the number of years since the firm's creation, and the firm sector is differentiated by the extractive, transforming, business services and consumer-oriented sectors (Bastian and Tucci, 2017). The number of employees determines the firm size, and the owner/manager's age is measured in years. The owner/manager's gender is coded as "1" male and "0" female. Owner/manager education is measured on a scale from 0 (pre-primary education) to 6 (second stage of tertiary education) (Bastian and Tucci, 2017).

Firm size is measured by the number of employees (Forbes, 2005; Martín-Rojas et al., 2023). Then it is transformed according to Kuwait's government's definition of small (0-50 employees) and medium (51-150 employees) businesses to a dummy variable that has values of 0 small business and 1 medium business.

Habitual is a dummy variable that has values of 0 for establishing/operating one or fewer businesses and 1 for establishing/operating more than one business. The question is adapted from Forbes (2005) to test entrepreneurs' experience. Entrepreneurs are asked to provide the number of businesses they established or operate. Then it was transformed into the dummy variable.

Table 4. 5:Operationalisation of Control Variable

Variable	Measured as	Measurement scale	Empirical foundations
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Firm age	Number of years on since establishment	In years	Bastian and Tucci (2017); Forbes, 2005)
Firm industry	The economic sector of the business	extractive sector, transforming sector, business services and consumer-oriented	Bastian and Tucci (2017).
Firm size	Number of employees	Headcount of employees	Forbes (2005)
Firm size (small-medium)	Small-Medium	Small =1 Medium =0	Forbes (2005); Martín-Rojas et al. (2023)
Owner/Manager age	age	In years	Bertelsen et al., (2017); Bastian and Tucci (2017); Abu Bakar et al. (2017)
Owner/Manager gender	Gender	Male/ Female	Bastian and Tucci, 2017
Owner/manager education	Education attainment	The variable is measured on a scale from 0 (pre-primary education) to 6 (second stage of tertiary education)	Bastian and Tucci, (2017)
Habitual (prior experience)	Number of businesses established/operated	0 for less than 1 1 for more than 1 business	Forbes (2005), Ucbasaran et al. (2001)

4.6 Response analysis

4.6.1 Response rate

The sample of this research is 1204 registered business in the National Registry that is managed by The National Fund in Kuwait. The email survey was managed and accessed by the National Fund. The email survey and three waves collected 141 responses of which 139 were usable. This response gives an 11.5% response rate. This response rate is argued by Bryman (2012) to be acceptable and in line with studies in the same region (AlHussainan

et al., 2022; Abu Bakar et al., 2017; Bastian and Zali, 2016; Almobaireek and Manolova, 2013). De Koning et al. (2021) found that response rates for online surveys fell sharply during and post the Covid-19 pandemic compared to pre- pandemic.

4.7 Statistical instrument for hypothesis testing

Ordinary least square (OLS) regression, also called linear regression, was determined as the regression technique for this study. OLS provides more detailed information about the dependent variable such as “By how much will y change, if x changes?” (Dancey, 2014, p.377). The nature of the dependent variables is fit for an OLS regression. The research’s dependent variables are exploratory and exploitative innovations that are not binary variables, and the research is investigating variables that can predict an outcome (dependent variable). Field (2018) argues that OLS is a technique to predict an outcome, while logistic regression is a technique to predict a probability of an outcome. Additionally, Hair et al. (2019) suggest that OLS is the preferred technique if there is low multicollinearity between the independent variables. Finally, the use of linear regression is to avoid model fitness problems as a result of a smaller size sample (Kline, 2005, cited in Cardon and Kirk, 2015).

4.8 Conclusion

This chapter presented the research methodology and methods for collecting data for the study. The first section discussed the adopted philosophical assumptions. Then, the subsequent section discussed the research designs and the rationale of adopting one for the research. The next section discussed operationalization and measurement items. Lastly, response analysis and statistical techniques for hypothesis testing were discussed.

Chapter.5 Data exploration and Analysis

5.1 Introduction

This chapter presents the analysis of the data collected for the sample of the study. The chapter starts with a sample size discussion, a nonresponse bias section and then a sample description section. Later, the chapter presents constructs validity and reliability.

5.2 Sample size

The target population is the National Registry of small and medium businesses (NR). The NR is managed by the National Fund for small and medium businesses (NF). The National Fund stated that as of September 2021, 1,205 small and medium businesses were registered in the NR. The survey was designed and formatted by the researcher. Because of the privacy laws stipulated by the National Fund, the National Fund itself distributed the survey to the participants in the NR.

The National Fund sent the survey through email for the registered business owners/managers in the NR list. Questionnaires were distributed online and 470 questionnaires were received, of which 139 were considered usable for this study. The rest of the questionnaires were eliminated due to failing to meet the inclusion criteria of this research. The 139 responses obtained were used to test non-response bias, sample description and the constructs' validity and reliability. Thus, the sample achieved an 11% response rate. According to Bryman (2012) the response rates should be between 10 and 15 percent. The use of a smaller sample is common in entrepreneurship research (Short et al., 2010; Cardon and Kirk, 2015; Luu and Nguyen, 2021; Forbes, 2005).

5.3 Non-response bias

Nonresponse bias is the response variance between respondents and nonrespondents (Lambert and Harrington, 1990). Nonresponse bias is when respondents refuse to take part in the survey, which affects the findings. Thus, individuals who do not

take the survey differ from the individuals who do (Lewis-Beck, et al., 2003). This non-sampling error occurs when the participants' characteristics are different from those of the refused participants (Andrew, Pedersen and McEvoy, 2011). Two problems can emerge from non-response: a reduction in sample size and bias (De Vaus, 2014).

Bryman (2012) suggests follow-ups to improve response rates. Saunders et al. (2016) suggest focusing on the survey layout design, clarity of the questionnaire questions, and the survey planning and administration during execution. A pilot test was run and administered. Follow-ups were conducted for the purposes of the research.

The National Fund was responsible for accessing the sample's list and sending the survey to their email. A public relations member of staff worked in close liaison with the researcher to access the list. The start and reminder email dates were set by the researcher. The survey was launched on the 8th of December, 2021. Three reminders were sent to the participants through National Fund's email. The survey was closed in May 2022. A pilot test was run and administered to test for validity (Saunders et al., 2016). Ten participants participated in the pilot test, namely five academics and five small business owners. As mentioned in Chapter 4, the Covid-19 pandemic greatly affected the response rate. However, a third of the response rate in entrepreneurship research was found to be under 25% (Aldrich and Baker, 2000, as cited in Rutherford et al., 2017).

According to Lambert and Harrington (1990) one way to deal with nonresponse bias is to estimate this bias's effects. Armstrong and Overton (1977) recommend extrapolation methods to estimate nonresponse bias. They define these methods as follows: "Extrapolation methods are based on the assumption that subjects who respond less readily are more like nonrespondents. 'Less readily' has been defined as answering later, or as requiring more prodding to answer" (p.397).

Two groups of respondents were identified and tested based on “Time trends” (Armstrong and Overton, 1977, p.397). The first group comprises the first 30 early respondents, and the second group comprises the last 30 late respondents. A one-way analysis of variance (ANOVA) was run to test for significant differences between the mean scores of the early and late respondents. The tests of homogeneity of variances for the constructs were not significant for most of the independent constructs, except for intention to use. Table 5.1: Homogeneity presents the results. The ANOVA result, $F(1, 58) = 1.56$ and $p = .216$ for intention to use was not significant based on an alpha value of .05. Additionally, a two-tailed Mann-Whitney two-sample rank-sum test was run for intention to use and early and late respondents. The test is alternative to the independent t-test and it doesn't share the same assumptions (Conover and Iman, 1981). There were 30 observations in the group early respondents, and 30 observations in the group late respondents. The test was not significant based on an alpha of .05, $U = 404.5$, $z = -0.68$, $p = .49$. The mean rank for group E was 28.98 and the mean rank for group L was 32.02. This suggests that the distribution of intention to use for the early (Mdn = 4.20) group was not significantly different from the distribution of intention to use for the late (Mdn = 4.20) category. Table 5.2: Two-tailed Mann-Whitney test for intention to use by E_L (Early and Late Respondents) presents the result of the two-tailed Mann-Whitney U test. In conclusion, there were no significant differences between early respondents and late respondents in their mean scores for intention to use. The overall analysis results indicated that nonresponse bias was not an issue in this study.

Additionally, the two groups sample (late and early respondents) was tested for normality using the Kolmogorov-Smirnov test and Shapiro-Wilk test. Entrepreneur's age was examined for normality. The tests are used to determine if the distribution of entrepreneurs age was significantly different from a normal distribution. The Kolmogorov-

Smirnov test finding found that the distribution of entrepreneur's age variable did not significantly differ from normality $p = .20$ and the Shapiro-Wilk test finding states that the distribution of the entrepreneur's age variable did not significantly differ from normality $p = .104$. Table 5.3 presents the results.

Table 5. 1: Homogeneity presents the results

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Exploratory innovation	Based on Mean	.100	1	58	.753
Exploitative innovation	Based on Mean	.057	1	58	.811
Performance Exp.	Based on Mean	1.545	1	58	.219
Intention to use	Based on Mean	6.869	1	58	.011
Passion	Based on Mean	1.292	1	58	.260
Self-efficacy	Based on Mean	.815	1	58	.370
Cognition	Based on Mean	.024	1	58	.879
Proactivity	Based on Mean	.057	1	58	.813
Resilience	Based on Mean	.198	1	58	.658
Wasta	Based on Mean	.234	1	58	.630
Happiness	Based on Mean	.018	1	58	.893
Health	Based on Mean	1.001	1	58	.321
Negative Affect	Based on Mean	.079	1	58	.780
Positive Affect	Based on Mean	.529	1	58	.470
<i>Wasta</i>	Based on Mean	.234	1	58	.630

Table 5. 2: Two-tailed Mann-Whitney test for intention to use by E_L (Early and Late Respondents)

Variable	Mean Rank		<i>U</i>	<i>z</i>	<i>p</i>
	E	L			
intention to use	28.98	32.02	404.50	-0.68	.494

Table 5. 3: Tests of Normality

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Entrepreneur age	.098	60	.200*	.967	60	.104
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

5.4 Sample description

The demographic attributes of the sample are presented and discussed. These attributes are divided into continuous and categorical variables. The descriptive statistics of the continuous variables, which include age, firm age, number of businesses owned, number of businesses closed and firm size are presented in Table 5.4: Continuous descriptive statistics of continuous variables. The descriptive statistics of the categorical variables, which include gender, industry, education and governorate, are presented in Table 5.5: Categorical and Table 5.6: Categorical descriptive statistics of categorical variables.

Table 5. 4: Continuous descriptive statistics of continuous variables

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	<i>SE_M</i>	Min	Max	<i>Mdn</i>	Mode
Business owner's age	42.37	8.31	139	0.70	28.00	63.00	42.00	44.00
Number of established businesses	2.43	1.65	139	0.14	0.00	9.00	2.00	1.00
Number of majority share in businesses	1.93	2.50	137	0.21	0.00	25.00	1.00	1.00
Number of closed businesses	0.91	1.21	139	0.10	0.00	8.00	0.00	0.00
Firm size	15.43	18.37	139	1.56	0.00	135.00	10.00	3.00
Firm age	8.13	11.07	139	0.94	0.00	108.00	4.00	3.00

Table 5. 5: Categorical descriptive statistics of categorical variables

Variable	<i>n</i>	%
<i>Gender</i>		
Male	103	74.10
Female	36	25.90
Missing	0	0.00
<i>Level of Education</i>		
High School	14	10.07
Diploma	25	17.99
Bachelor	63	45.32
Master	28	20.14
PhD	7	5.04
Other	2	1.44
Missing	0	0.00
<i>Industry</i>		
Primary	2	1.44
Manufacturing	30	21.58
Construction	15	10.79
Services	70	50.36
Retail	18	12.95
Wholesale	4	2.88
Missing	0	0.00
<i>Governorate</i>		
Al-Ahmadi	11	7.91
Al-Asima (The Capital)	34	24.46
AlFarwaniya	43	30.94
Al-Jahra	26	18.71
Hawalli	15	10.79
Mubarak Al-Kabeer	10	7.19
Missing	0	0.00

<i>Note.</i> Due to rounding errors, percentages may not equal 100%.		
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Table 5. 6: Categorical descriptive statistics of categorical variables

		Statistics			
		Gender	Edu	Industry	Governorate
N	Valid	139	139	139	139
	Missing	0	0	0	0
Mean		1.26	2.96	3.60	3.22
Median		1.00	3.00	4.00	3.00
Std. Deviation		.440	1.059	1.094	1.339
Variance		.193	1.122	1.197	1.794
Range		1	5	5	5

Business owners had an average age of 42.37 years old (SD = 8.31, SEM = 0.70, Min = 28.00, Max = 63.00, Mdn = 42.00, Mode = 44.00). The youngest business owner in the sample was 28 years old. The National Fund does not allow any business owner below 21 to register his/her business in the NS.

According to Table 5.7: Age Governorate, 62.6% of business owners were between 35 and 48 years old. Al-Asima had 27.6% of the total business owners who were between 35 and 48 years old, then Al-Farwaniya with 25% for the same age group. Also, 53% of age group 35-48 years old was concentrated in Al-Asima and Al-Farwaniya. The largest populated governorate in the sample was Al-Farwaniya with 31% of the total sample. This is in line with the government public census (PACI). According to The Public Authority for Civil Information (PACI) census data, AlFarwaniya is the most populated governorate as of June 2022 with 1,118,421 residents (25% of total residents) and 32% of Kuwait’s residents are 35–49 years old. The second highest populated governorate with business owners in the sample was Al-Asima (n = 34, 24.46%); in relation to PACI’s census data, Al-Asima is the fourth most populated governorate out of six, with 588,175 residents.

Table 5. 7: Age Governorate

	28-34	35-41	42-48	49-56	57+	Total
Al-Ahmadi	2	2	6	1	0	11
Al-Asima (The Capital)	7	14	10	0	3	34
AlFarwaniya	6	13	9	12	3	43
Al-Jahra	3	9	7	4	3	26
Hawalli	2	6	7	0	0	15
Mubarak Al-Kabeer	3	1	3	2	1	10
Total	23	45	42	19	10	139

Business owners established an average of 2.43 businesses (SD = 1.65, SEM = 0.14, Min = 0.00, Max = 9.00, Mdn = 2.00, Mode = 1.00). Business owners also owned or had a majority share in an average of 1.93 businesses (SD = 2.50, SEM = 0.21, Min = 0.00, Max = 25.00, Mdn = 1.00, Mode = 1.00). The average number of closed businesses was 0.91 businesses (SD = 1.21, SEM = 0.10, Min = 0.00, Max = 8.00, Mdn = 0.00, Mode = 0.00). The firms had an average of 15.43 employees (SD = 18.37, SEM = 1.56, Min = 0.00, Max = 135.00, Mdn = 10.00, Mode = 3.00). The firms had been operating for an average of 8.13 years (SD = 11.07, SEM = 0.94, Min = 0.00, Max = 108.00, Mdn = 4.00, Mode = 3.00). The youngest firm in the sample had started operating in 2022, and the oldest had started operating in 1914. The summary statistics can be found in Table 5.4: Continuous descriptive statistics of continuous variables.

According to Ministry Law no. 51 for 2018, a business with 50 or less employees is considered a small business and a business with employees between 51 and 150 employees is considered a medium business. The National Fund allowed only businesses that comply with the ministry law to register in the NR. Accordingly, the sample has six medium businesses and 133 small businesses.

Figure Chapter.5.1: Small business

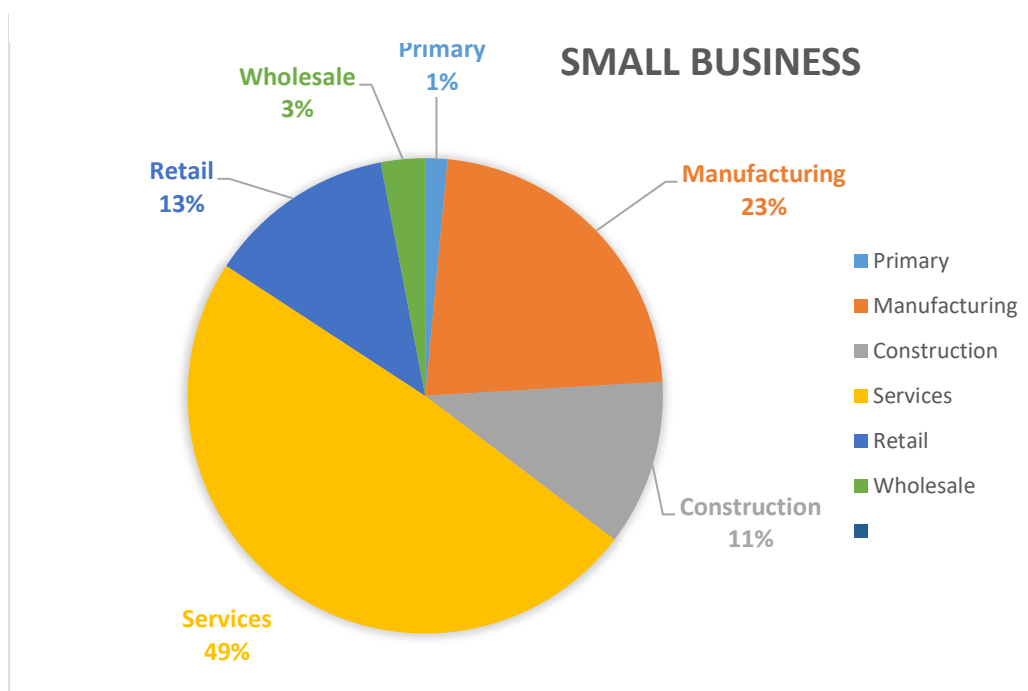


Table 5. 8: SMEs

Medium	Count	% Medium	Total %N	Small	Count	% Small	Total % of N
Primary	0	0.0%	0.0%	Primary	2	1.5%	1.4%
Manufacturing	0	0.0%	0.0%	Manufacturing	30	22.6%	21.6%
Construction	0	0.0%	0.0%	Construction	15	11.3%	10.8%
Services	5	83.3%	3.6%	Services	65	48.9%	46.8%
Retail	1	16.7%	0.7%	Retail	17	12.8%	12.2%
Wholesale	0	0.0%	0.0%	Wholesale	4	3.0%	2.9%
Total	6	100.0%	4.3%	Total	133	100.0%	95.7%
Total N	139						

Table 5. 9: SME Governorate

Governorate	Small	% Small	%Total N	Medium	% Medium	%Total N
Al-Ahmadi	9	7%	6%	2	33%	1%
Al-Asima (The Capital)	33	25%	24%	1	17%	1%
AlFarwaniya	42	32%	30%	1	17%	1%
Al-Jahra	24	18%	17%	2	33%	1%
Hawalli	15	11%	11%	0	0%	0%
Mubarak Al-Kabeer	10	8%	7%	0	0%	0%
Total	133	100%	96%	6	100%	4%
Total N	139					

Table 5. 10: SME Owner Age

	28-34	35-41	42-48	49-56	57+	Total
Small	22	44	40	19	8	133
Medium	1	1	2	0	2	6
					Total N	139

Male business owners accounted for 74.10% of the sample (n = 103, 74.10%), while female owners accounted for 25.9% of the sample. This ratio is in line with that found by other studies in the same region (AlHussainan et al., 2022; Abu Bakar et al., 2017; Bastian and Zali, 2016; Luu and Nguyen, 2021). The majority of male business owners were concentrated in the services and manufacturing industries, with a total of 68.9% (services 44.7% and manufacturing 24.3%). In addition, female business owners were mainly concentrated in the services industry and manufacturing with 80.6% (services 66.7% and manufacturing 13.9%). Table 5.11: Cross Descriptive presents the results of gender, industry and governorate.

Table 5. 11: Cross Descriptive

Gender * industry * Governorate cross tabulation									
Count									
Governorate			Industry						Total
			Primary	Manufacturing	Construction	Services	Retail	Wholesale	
Al-Ahmadi	Gender	Male	0	3	2	3	1	0	9
		Female	0	1	0	1	0	0	2
	Total			0	4	2	4	1	0
Al-Asima (the capital)	Gender	Male	0	8	6	8	4	1	27
		Female	1	1	0	4	1	0	7
	Total			1	9	6	12	5	1
AlFarwaniya	Gender	Male	0	6	3	19	2	2	32
		Female	0	1	2	6	2	0	11
	Total			0	7	5	25	4	2
Al-Jahra	Gender	Male	0	2	0	13	6	0	21
		Female	0	1	0	4	0	0	5
	Total			0	3	0	17	6	0
Hawalli	Gender	Male	1	1	2	3	0	1	8
		Female	0	1	0	5	1	0	7
	Total			1	2	2	8	1	1
Mubarak Al-Kabeer	Gender	Male	0	5	0	0	1	0	6
		Female	0	0	0	4	0	0	4
	Total			0	5	0	4	1	0
Total	Gender	Male	1	25	13	46	14	4	103
		Female	1	5	2	24	4	0	36
	Total			2	30	15	70	18	4

Figure 5.2: Level of Education shows that over 70% of the sample held a university-level degree. A bachelor's degree was the highest educational attainment in the sample, with 45.32% (n = 63). Figure 5.3: Level of Education Histogram illustrates the normal distribution curve for the level of education in the sample. The services industry accounted for 50.36% (n = 70) of the total businesses in the sample. AlFarwaniya was the favorite location for business owners, with a 30.94% (n = 43) share of the total sample.

Figure Chapter.5.2:Level of Education

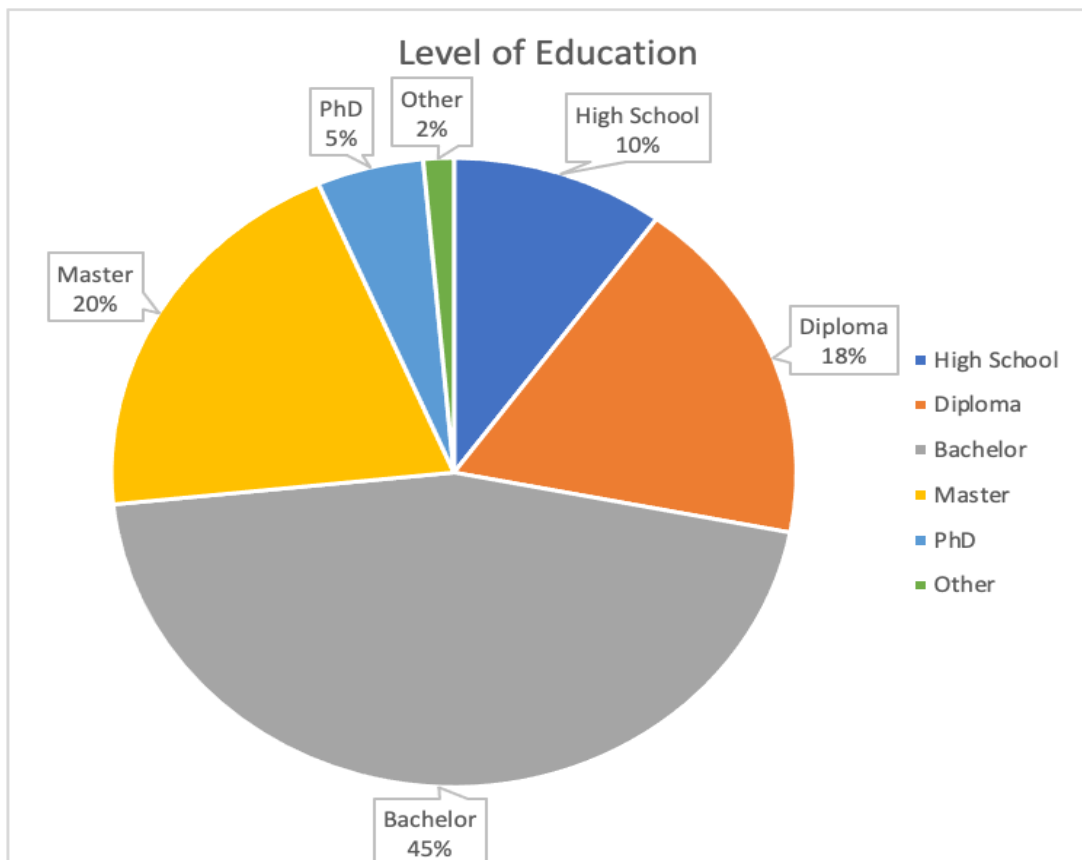


Figure Chapter.5.3: Level of Education Histogram

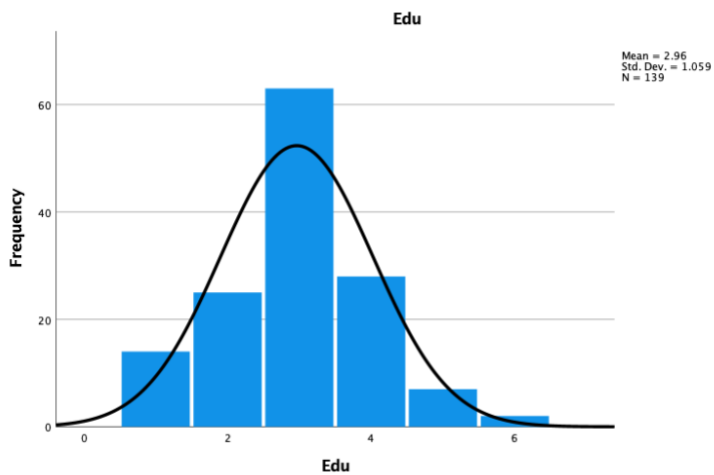


Figure 5.4: Governorates shows the percentages of each governorate. 47% of businesses in the sample were established between 2017 and 2019. 23% of businesses in the sample were established in 2019. Table 5.12: Year established illustrates the frequency of year of establishment.

Figure Chapter.5.4: Governorates

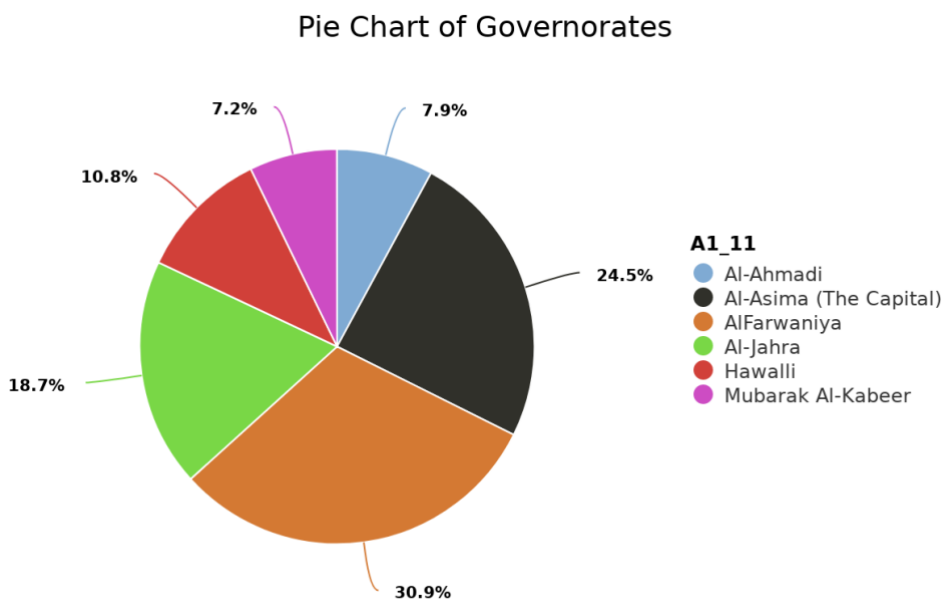


Table 5. 12: Year established

Year established				
Valid	Frequency	Percent	Valid Percent	Cumulative Percent
1914	1	.7	.7	.7
1984	1	.7	.7	1.4
1996	3	2.2	2.2	3.6
1998	1	.7	.7	4.3
1999	2	1.4	1.4	5.8
2000	2	1.4	1.4	7.2
2001	1	.7	.7	7.9
2002	2	1.4	1.4	9.4
2003	2	1.4	1.4	10.8
2004	5	3.6	3.6	14.4
2005	4	2.9	2.9	17.3
2006	1	.7	.7	18.0
2007	2	1.4	1.4	19.4
2008	2	1.4	1.4	20.9
2009	2	1.4	1.4	22.3
2011	1	.7	.7	23.0
2013	1	.7	.7	23.7
2014	6	4.3	4.3	28.1
2015	5	3.6	3.6	31.7
2016	9	6.5	6.5	38.1
2017	15	10.8	10.8	48.9
2018	19	13.7	13.7	62.6
2019	32	23.0	23.0	85.6
2020	13	9.4	9.4	95.0
2021	5	3.6	3.6	98.6
2022	2	1.4	1.4	100.0
Total	139	100.0	100.0	

Descriptive Statistics for Scale Items of the Main Variables

In this section, descriptive statistics of the dependent and independent variables are presented. Table 5.13: Descriptive Statistics For Scale Items presents all the results. The research tested two dependent variables: exploratory and exploitative innovation. The exploratory innovation scale consists of four items. The mean was 3.88, the standard deviation was 0.82 and the median was 4. Exploitative innovation consists of three items. The mean was 4.18, the median was 4.33 and the standard deviation was 0.77.

The tested independent variables were performance expectancy, intention to use, passion, self-efficacy, proactivity, need for cognition (cognition), resilience, happiness,

health, positive affect, negative affect and *wasta*. Performance expectancy consists of five items. The mean was 4.43, the median was 4.8 and the standard deviation was 0.75. Intention to use consists of five items. The mean was 4.26, the median was 4.8 and the standard deviation was .73. Happiness and health each has one item. The mean scores were 3.63 and 3.74, respectively. The median for both constructs was 4. The standard deviation was .986 for happiness and .981 for health. Positive and negative affect each has 10 items. The mean, median, and standard deviation for positive affect were 3.99, 4 and .503 respectively. The mean, median and standard deviation for negative affect were 2.21, 2.1 and .642 respectively.

Passion consists of 13 items. The mean was 4.25, the median was 4.38 and the standard deviation was .60. Self-efficacy includes five items. The mean was 4.38, the median was 4.6 and the standard deviation was .625. Need for cognition (cognition) includes nine items. The mean was 3.57, the median 3.56 and standard deviation .728. Proactiveness includes three items. The mean was 4.31, the median was 4.33 and the standard deviation was .721. Resilience consists of four items. The mean was 4.20, the median was 4.25 and the standard deviation was .759. Finally, *wasta* includes five items. The mean was 3.34, the median was 3.40 and the standard deviation was 1.137.

Table 5.13: Descriptive Statistics For Scale Items

	Mean	Median	Std. Deviation
Exploratory innovation	3.88	4	.821
Exploitative innovation	4.18	4.33	.769
Performance expectancy	4.43	4.8	.750
Intention to use	4.26	4.2	.732
Passion	4.25	4.38	.595
Self-efficacy	4.38	4.6	.625
Need for cognition (cognition)	3.57	3.56	.728
Proactivity	4.31	4.33	.721
Resilience	4.20	4.25	.759
Happiness	3.63	4	.986
Health	3.74	4	.981
Positive Affect	3.99	4	.503
Negative Affect	2.21	2.1	.642

<i>Wasta</i>	3.34	3.4	1.137
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5.5 Construct Validity and Reliability

5.5.1 Innovation

All the constructs were adapted from previous research. As mentioned earlier, this research has two innovation dimensions as dependent variables: exploratory and exploitative.

5.5.2 Reliability

5.5.3 Exploratory innovation

Exploratory innovation was measured using four items. The items were adapted from Kollmann and Stöckmann (2014) without any changes. The scale has a reported Cronbach's alpha of .71. In this research, the scale demonstrated an acceptable reliability coefficient of $\alpha = .76$. Both the reported and calculated scores met Nunnally's (1978, cited in Hughes and Morgan, 2007) thresholds.

5.5.4 Exploitative innovation

Exploitative innovation was measured using three items. The items were adapted from Kollmann and Stöckmann (2014) without any changes. The scale has a reported Cronbach's alpha of .63. In this research, the scale demonstrated an acceptable reliability coefficient of $\alpha = .755$.

5.5.5 Independent Variables

The independent variables used in the research are happiness, health, positive affect, negative affect, performance expectancy, intention to use, self-efficacy, resilience, cognition, passion, proactiveness and wasta. Happiness and health had only one items each. Happiness was adapted from the Office of National Statistics (ONS) and health was adapted from the RAND Health Survey 1.0 (Hays et al., 1993). All the constructs were highly reliable with Cronbach's alpha greater than .70 as suggested by Nunnally (1978,

cited in Hughes and Morgan, 2007). Technology adoption consists of two dimensions in this study: performance expectancy and intention to use. The five-item scale assessing performance expectancy has a Cronbach's alpha coefficient of .937. The five-item scale assessing intention to use has a Cronbach's alpha coefficient of .888. Table 5.14: Cronbach illustrates the reliability test results for all the independent variables.

Table 5. 14: Cronbach

Construct	Number of Items	Cronbach
Performance expectancy	5	.937
Intention to use	5	.888
Entrepreneurial passion	13	.911
Entrepreneurial self-efficacy	5	.840
Cognition	9	.854
Entrepreneurial proactivity	3	.791
Entrepreneurial resilience	4	.854
<i>Wasta</i>	5	.874
Positive affect	10	.761
Negative affect	10	.847
Overall PANAS	20	.763

5.6 Common Method Bias and Multicollinearity

Given that the research gathered the dependent and independent variables from the same data source, the relationships between variables might be influenced by the common method bias (Hair et al., 2019). Common method bias (CMB) is also called common method variance (CMV). CMB is defined as “variance that is attributable to the measurement method rather than to the constructs the measures represent” (Podsakoff et al., 2003, p.879). According to Podsakoff et al. (2003) CMB is one of the main reasons for systematic measurement error. Thus, a false internal consistency is produced by CMV, which is an apparent correlation between variables produced by a single cause (Chang, van Witteloostuijn and Eden, 2010).

Notably, the respondents were assured that their personal data would not be shared, and all data were collected without linkage to participant identity to guarantee anonymity. The questionnaire was initially developed in English and then translated to Arabic. This process of back translation is recommended to ensure translation equivalency (Brislin,1986; Harkness and Schoua-Glusberg, 1998).

The research was conducted with one single informant; therefore, to test for CMB, as suggested by Podsakoff et al. (2003), the post-hoc method was used. Harman’s single factor test was used to check for CMB (Hair et al., 2019). This approach loads all the items for each construct into exploratory factor analysis as suggested by Chang et al. (2010).

Another statistical method recommended by Bagozzi, Yi and Phillips (1991) is the evaluation of CMB through a large correlation between the variables ($r > 0.9$). The Harman single factor test was conducted. As suggested by Podsakoff et al. (2003) all items for exploratory innovation were included. The results of the Harman’s test presented 17 items with an eigenvalue greater than one, which together accounted for 71.924% of the variance. Table 5.15: Harman’s Test for Common Method Bias Exploratory Innovation illustrates the Harman’s test results. The largest factor only explained 23.243% of variance, that is, less than 50% variance (Podsakoff et al., 2003). These results indicate that the CMB is not an issue. In addition, no variable was found to have a correlation of $r > .9$.

Table 5. 15: Harman’s Test for Common Method Bias Exploratory innovation

Total Variance Explained		
Factor	Initial Eigenvalues	Extraction Sums of Squared Loadings

	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	18.062	24.082	24.082	17.432	23.243	23.243
2	6.167	8.222	32.305			
3	5.019	6.693	38.997			
4	3.152	4.203	43.200			
5	2.706	3.608	46.808			
6	2.268	3.023	49.832			
7	2.157	2.876	52.708			
8	1.908	2.544	55.252			
9	1.789	2.386	57.637			
10	1.703	2.270	59.907			
11	1.556	2.075	61.982			
12	1.414	1.886	63.868			
13	1.324	1.766	65.634			
14	1.303	1.738	67.372			
15	1.197	1.596	68.968			
16	1.163	1.551	70.519			
17	1.054	1.405	71.924			
18	.998	1.331	73.255			
19	.988	1.317	74.572			
20	.963	1.284	75.856			
21	.907	1.210	77.066			
22	.822	1.097	78.162			
23	.808	1.077	79.239			
24	.777	1.037	80.276			
25	.743	.991	81.267			
26	.718	.957	82.224			
27	.706	.942	83.166			
28	.672	.896	84.062			
29	.614	.819	84.880			
30	.608	.811	85.691			
31	.585	.780	86.471			
32	.536	.715	87.186			
33	.525	.700	87.886			
34	.510	.680	88.565			
35	.481	.642	89.207			
36	.457	.609	89.817			
37	.437	.583	90.400			
38	.428	.570	90.970			
39	.414	.553	91.522			
40	.410	.546	92.068			
41	.396	.527	92.596			
42	.358	.478	93.074			
43	.348	.464	93.538			
44	.315	.420	93.958			
45	.309	.412	94.370			
46	.282	.376	94.746			

47	.271	.361	95.106			
48	.262	.350	95.456			
49	.259	.346	95.802			
50	.242	.323	96.124			
51	.226	.301	96.425			
52	.218	.290	96.715			
53	.212	.282	96.998			
54	.203	.271	97.269			
55	.183	.244	97.513			
56	.174	.232	97.746			
57	.160	.214	97.960			
58	.152	.202	98.162			
59	.142	.190	98.352			
60	.140	.186	98.538			
61	.120	.161	98.699			
62	.109	.146	98.845			
63	.104	.139	98.984			
64	.096	.128	99.111			
65	.090	.120	99.232			
66	.085	.114	99.345			
67	.078	.105	99.450			
68	.077	.103	99.553			
69	.064	.086	99.639			
70	.057	.076	99.715			
71	.053	.070	99.785			
72	.046	.062	99.846			
73	.045	.060	99.906			
74	.042	.056	99.962			
75	.028	.038	100.000			
Extraction Method: Principal Axis Factoring.						

The Harman single factor test was conducted with the second dependent variable and the independent scales. As suggested by Podsakoff et al. (2003), all items for exploitative innovation were included. The results of the Harman's test presented 18 items with an eigenvalue greater than one, which together accounted for 73.579% of the variance. The largest factor only explained 23.442% of variance, that is, less than 50% variance (Podsakoff et al., 2003). These results indicate that the CMB is not an issue. Table 5.16: Harman's Test for Common Method Bias Exploitative Innovation illustrates the test results. Additionally, no variable had a correlation of $r > .9$.

Table 5. 16: Harman’s Test for Common Method Bias Exploitative Innovation

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% Of Variance	Cumulative %
1	17.976	24.291	24.291	17.347	23.442	23.442
2	6.133	8.287	32.579			
3	4.958	6.700	39.279			
4	3.197	4.320	43.598			
5	2.756	3.724	47.322			
6	2.236	3.021	50.343			
7	2.103	2.842	53.185			
8	1.886	2.548	55.733			
9	1.734	2.344	58.077			
10	1.641	2.218	60.295			
11	1.446	1.955	62.249			
12	1.400	1.892	64.142			
13	1.311	1.771	65.913			
14	1.258	1.700	67.613			
15	1.179	1.593	69.206			
16	1.140	1.541	70.747			
17	1.061	1.433	72.180			
18	1.035	1.399	73.579			
19	.971	1.312	74.891			
20	.944	1.275	76.166			
21	.882	1.191	77.357			
22	.866	1.170	78.527			
23	.809	1.093	79.620			
24	.764	1.033	80.653			
25	.742	1.003	81.655			
26	.709	.958	82.613			
27	.689	.931	83.544			
28	.626	.846	84.389			
29	.620	.838	85.227			
30	.584	.789	86.016			
31	.544	.735	86.751			
32	.538	.727	87.478			
33	.507	.686	88.163			
34	.501	.677	88.840			
35	.486	.657	89.497			
36	.455	.615	90.112			
37	.433	.585	90.698			
38	.412	.557	91.254			
39	.399	.540	91.794			
40	.394	.533	92.327			
41	.377	.509	92.836			
42	.347	.469	93.305			

43	.341	.461	93.766			
44	.322	.435	94.201			
45	.298	.402	94.603			
46	.280	.378	94.981			
47	.266	.360	95.341			
48	.258	.348	95.689			
49	.244	.330	96.019			
50	.230	.311	96.330			
51	.224	.303	96.633			
52	.211	.285	96.918			
53	.200	.270	97.188			
54	.190	.256	97.444			
55	.181	.244	97.688			
56	.165	.223	97.911			
57	.150	.202	98.113			
58	.139	.187	98.301			
59	.133	.180	98.481			
60	.129	.175	98.655			
61	.116	.156	98.812			
62	.106	.143	98.955			
63	.097	.132	99.087			
64	.093	.126	99.213			
65	.083	.112	99.325			
66	.082	.110	99.435			
67	.078	.105	99.540			
68	.070	.095	99.635			
69	.058	.079	99.714			
70	.052	.070	99.784			
71	.050	.068	99.852			
72	.041	.055	99.907			
73	.040	.054	99.960			
74	.029	.040	100.000			
Extraction Method: Principal Axis Factoring.						

5.7 Multicollinearity

Multicollinearity is when several variables correlate too strongly (Cleophas and Zwinderman, 2016). Hair et al. (2019) define it as “the degree of correlation among the variables in the variate that may result in a confounding effect in the interpretation of the individual variables of the variate” (p.14). They add that multicollinearity refers to “the correlation among three or more independent variables” (p.270).

In this research, the variables used in the regression analysis were checked for multicollinearity or high correlation of $r > 0.80$ as recommended by Field (2018). Hair et

al. (2019) argue that multicollinearity affects the study of predicting variables that need explanation because multicollinearity is “the measure of shared variance with other variables in the variate” (p.14). High multicollinearity between variables makes it difficult to understand and to explain the effects of these variables. Field (2018) recommends using the correlation matrix test for high correlation between the tested variables while arguing that it is not sufficient to check only the correlation. Table 5.17: Correlation Matrix (Pearson Two-Sided tests) and Table 5.18: Continue Table 5.17 Correlation Matrix (Pearson Two-Sided tests) present the correlation matrix for the independent and control variables. Hair et al. (2019) recommended adding variance inflation factors (VIFs) whose values do not exceed 10.

The relationship between the independent variables is tested with the Pearson correlation matrix. Additionally, all independent variables were regressed on each other. The correlation matrix, descriptive statistics and VIF results are illustrated in Table 5.19 Correlation Matrix. The correlations and VIF results show no evidence of multicollinearity. The correlation between the variables does not exceed the threshold $r > .80$ recommended by Field (2018). The VIF values do not exceed 10.

Table 5. 17: Correlation Matrix (Pearson Two-Sided tests). Bivariate Correlations with the level of significance in parentheses

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Exploratory innovation	1										
2. Exploitative innovation	0.624^a (<0.001)	1									
3. Gender	-0.080 (0.351)	-0.052 (0.541)	1								
4. Habitual	-0.028 (0.745)	-0.010 (0.904)	0.184^b (0.030)	1							
5. Small-medium	0.076 (0.374)	-0.073 (0.395)	-0.045 (0.601)	-0.091 (0.286)	1						
6. Firm age	0.076 (0.374)	-0.002 (0.978)	0.090 (0.290)	0.205^b (0.016)	-0.100 (0.240)	1					
7. Governorate-lower	-0.025 (0.768)	0.108 (0.205)	-0.070 (0.413)	-0.111 (0.192)	-0.002 (0.986)	-0.039 (0.648)	1				
8. Services	0.052 (0.546)	0.005 (0.958)	- 0.193^b (0.023)	0.082 (0.337)	- 0.140^d (0.100)	0.129^d (0.130)	0.065 (0.449)	1			
9. Performance expectancy	0.332^a (<0.001)	0.392^a (<0.001)	0.065 (0.450)	0.016 (0.849)	0.000 (0.996)	0.102 (0.234)	0.089 (0.298)	0.123^d (0.149)	1		
10. Intention to use	0.349^a (<0.001)	0.372^a (<0.001)	0.040 (0.640)	0.093 (0.277)	0.047 (0.585)	0.162^c (0.057)	0.151 (0.077)	0.213^b (0.012)	0.734^a (<0.001)	1	
11. Health	-0.042 (0.619)	0.060 (0.484)	0.011 (0.894)	-0.052 (0.539)	-0.020 (0.815)	-0.020 (0.813)	0.086 (0.312)	0.017 (0.846)	-0.050 (0.560)	-0.055 (0.522)	1
12. Happiness	0.006 (0.944)	0.035 (0.685)	-0.003 (0.968)	0.172^b (0.043)	-0.043 (0.613)	-0.002 (0.985)	-0.112 (0.187)	0.069 (0.423)	-0.110 (0.199)	-0.011 (0.896)	0.463^a (<0.001)
13. Negative affect	-0.161^c (0.058)	-0.122 (0.152)	-0.032 (0.710)	-0.086 (0.312)	-0.002 (0.980)	-0.122 (0.188)	- 0.139^d (0.102)	-0.074 (0.384)	-0.073 (0.391)	-0.051 (0.549)	-0.340^a (<0.001)

14. Positive affect	0.223^a (0.008)	0.215^b (0.011)	0.096 (0.263)	0.070 (0.415)	0.005 (0.954)	-0.024 (0.776)	0.036 (0.676)	0.070 (0.410)	0.128 (0.134)	0.152 (0.074)	0.234^a (0.006)
15. Passion	0.324^a (<0.001)	0.324^a (<0.001)	-0.006 (0.941)	0.090 (0.290)	0.038 (0.655)	0.030 (0.725)	0.085 (0.319)	0.128^d (0.134)	0.433^a (<0.001)	0.400^a (<0.001)	0.139^d (0.102)
16. Self-efficacy	0.316^a (<0.001)	0.424^a (<0.001)	-0.075 (0.383)	0.026 (0.764)	0.083 (0.331)	-0.145^c (0.088)	0.124^d (0.144)	0.102 (0.233)	0.360^a (<0.001)	0.427^a (<0.001)	0.106 (0.214)
17. Proactivity	0.363^a (<0.001)	0.415^a (<0.001)	0.011 (0.900)	0.102 (0.231)	0.009 (0.913)	-0.098 (0.253)	0.087 (0.311)	0.120 (0.158)	0.406^a (<0.001)	0.373^a (<0.001)	0.053 (0.538)
18. Need for cognition (cognition)	0.120 (0.160)	0.057 (0.505)	0.003 (0.971)	-0.116 (0.173)	0.092 (0.279)	-0.013 (0.876)	-0.090 (0.291)	0.051 (0.555)	0.265^a (0.001)	0.276^a (0.001)	0.016 (0.851)
19. Resilience	0.255^a (0.002)	0.248^a (0.003)	-0.041 (0.634)	0.013 (0.879)	0.091 (0.289)	-0.044 (0.603)	-0.008 (0.929)	0.229^d (0.139)	0.326^a (<0.001)	0.139 (0.188)	0.133^d (0.120)
20. <i>Wasta</i>	0.092 (0.281)	0.202^b (0.017)	0.005 (0.956)	0.101 (0.236)	0.039 (0.647)	-0.035 (0.687)	0.005 (0.956)	-0.015 (0.862)	0.178^b (0.036)	0.188^b (0.026)	-0.134^d (0.115)

^a Statistically significant at the 0.001 level; ^b Statistically significant at the 0.05 level; ^c Statistically significant at the 0.10 level; ^d Statistically significant at the 0.15 level.

Table 5. 18: Continue Table 5.17 Correlation Matrix (Pearson Two-Sided tests). Bivariate Correlations with the level of significance in parentheses

	12.	13.	14.	15.	16.	17.	18.	19.	20.
12. Happiness	1								
13. Negative affect	-0.356^a (<0.001)	1							
14. Positive affect	0.161^c (0.058)	-0.066 (0.440)	1						
15. Passion	-0.036 (0.676)	-0.109 (0.202)	0.513^a (<0.001)	1					
16. Self-efficacy	0.005 (0.953)	-0.019 (0.822)	0.408^a (<0.001)	0.709^a (<0.001)	1				
17. Proactivity	0.038 (0.653)	-0.145^c (0.088)	0.441^a (<0.001)	0.607^a (<0.001)	0.538^a (<0.001)	1			
18. Need for cognition (cognition)	0.047 (0.584)	0.006 (0.941)	0.389^a (<0.001)	0.489^a (<0.001)	0.469^a (<0.001)	0.459^a (<0.001)	1		
19. Resilience	0.290 (0.139)	-0.200^b (0.018)	0.379^a (<0.001)	0.597^a (<0.001)	0.523^a (<0.001)	0.552^a (<0.001)	0.425^a (<0.001)	1	
20. <i>Wasta</i>	-0.103 (0.228)	0.166^c (0.050)	0.106 (0.216)	0.194^b (0.022)	0.236^a (0.005)	0.154^c (0.069)	0.181^b (0.033)	0.295^a (<0.001)	1

^a Statistically significant at the 0.001 level; ^b Statistically significant at the 0.05 level; ^c Statistically significant at the 0.10 level; ^d Statistically significant at the 0.15 level.

Table 5. 19: Correlation Matrix

	Mean	Std. Dev	VIF	1	2	3	4	5	6	7	8	9	10	11
1-Performance expectancy	4.43	0.75		1										
2-Intention to use	4.26	0.732	1.33	.734	1									
3-Positive affect	3.99	0.503	1.56	0.128	0.152	1								
4-Negative affect	2.21	0.642	1.33	-0.073	-0.051	-0.066	1							
5-Happiness	3.63	0.986	1.43	-0.11	-0.011	0.161	-.356	1						
6-Health	3.74	0.981	1.46	-0.05	-0.055	.234	-.340	.463	1					
7-Passion	4.25	0.595	2.89	.433	.400	.513	-0.109	-0.036	0.139	1				
8-Self-efficacy	4.38	0.625	2.3	.360	.427	.408	-0.019	0.005	0.106	.709	1			
9-Cognition	3.57	0.728	1.51	.265	.276	.389	0.006	0.047	0.016	.489	.469	1		
10-Proactivity	4.31	0.721	1.94	.406	.373	.441	-0.145	0.038	0.053	.607	.538	.459	1	
11-Resilience	4.2	0.759	1.93	.326	.312	.379	-.200	0.09	0.133	.597	.523	.425	.552	1
12- <i>Wasta</i>	3.34	1.137	1.2	.178	.188*	0.106	0.166	-0.103	-0.134	.194	.236	.181	0.154	.295

5.8 Conclusion

The chapter presents the introduction in the first section. The second section presents and discusses the sample description. The subsequent section discusses constructs validity and the reliability of the constructs. The constructs were highly reliable. Tests were conducted to reduce the influence of common method bias. Further tests were conducted for the presence of multicollinearity. The tests show no presence of CMB or multicollinearity. The regression analysis is presented in the next chapter.

Chapter.6 Regression Analysis and Results

6.1 Introduction

This chapter presents the regression analysis and results for the sample of Kuwait National Fund entrepreneurs. Ordinary Least Squares (OLS) regression analysis was adopted to determine effects of the independent variables on two dependent variables – exploratory innovation and exploitative innovation. The dependent variables were tested with control variables and independent variables that represent contextual entrepreneurial dimensions, including technology adoption, subjective well-being, entrepreneurial behavioral microfoundations, and social relations. The first block accounts for the control variables, whereas the latter blocks refer to hypothesis testing (H1–10). SPSS version 28 was used to compute the regression analysis.

In the controls block, control variables were regressed one variable at a time on each dependent variable (exploratory innovation and exploitative innovation). Additionally, all the control variables were regressed together on each dependent variable.

The second block concerns technology adoption independent variables. The technology adoption block consisted of two independent variables: performance expectancy and intention to use. In this block, performance expectancy and intention to use were regressed together with controls on exploitative innovation and exploratory innovation.

The third block concerns subjective well-being independent variables. This specific block included four independent constructs that were regressed together with controls on exploratory innovation and exploitative innovation i.e. health, happiness, negative affect and positive affect.

The fourth block concerns entrepreneurial behavioral microfoundations independent variables. This particular block included five constructs that were regressed

together with controls on exploratory innovation and exploitative innovation i.e. passion, self-efficacy, proactivity, need for cognition (cognition) and resilience.

The final block concerns social relations independent variables. This block included one independent construct: *wasta*. This block regressed *wasta* with the control variables on exploratory and exploitative innovation.

With respect to testing a multiplicity of contextual dimensions taken together that predict exploitative innovation and exploratory innovation, then, each respective independent variable in the various preceding blocks that exerted significant effects were combined and presented as final combined effects models.

6.2 Controls Block

The dependent variables (exploratory or exploitative) were regressed with six control variables: Gender, Habitual, Small-Medium, Firm Age, Governorate-Lower and Services. Models were created to test for the significance of the control variables. The first six models (1a to 6a, 1b to 6b) regressed one control variable at a time with each dependent variable. The full control models reflect all the control variables regressed together on each dependent variable (Full_control a, Full_control b). In this way, the control block allows for the full and comprehensive treatment of conditions other than independent variables that may influence exploitative innovation and exploratory innovation (Field, 2018).

6.2.1 Controls and Exploratory innovation

Control variables were regressed on the dependent variable exploratory innovation to test the significance of these variables (see Table 6.1). Consequently, seven control models were tested for exploratory innovation (1a to 6a, Full). The models suggest none of the controls significantly influence exploratory innovation. In other words, none of the control variables in any model showed negative or positive significance relationship with exploratory innovation.

Model 1a regressed gender on exploratory innovation and Model 2a regressed habitual start-up on exploratory innovation. The results were not statistically significant, but with a positive coefficient. Indeed, model 2a was not significant with very low F-statistics at .004, p-value of .950, R^2 of .000 and adjusted R^2 of -.007. In model 3a, firm size (Small-Medium) only was regressed on the dependent variable. Firm size was not significant with p-value of .374, F-statistics of .796, R^2 of .006 and adjusted R^2 of -.001.

Model 4a tested firm age with the dependent variable exploratory innovation and it was not significant. It had a low F-statistics of .796, high p-value of .374, R^2 and adjusted R^2 of .006 and -.001, respectively. Models 5a and 6a were not significant. Model 5a regressed governorate population average with the dependent variable exploratory innovation and model 6a regressed services industry with the dependent variable exploratory innovation. The R^2 for model 5a was .001 and for model 6a was .003. Adjusted R^2 for model 5a was -.007 and for model 6a was -.005. F-statistics for model 5a was .088 and for model 6a was .367. Both models had high p-values of .768 and .546, respectively.

The full model (Full_control a) regressed all the control variables with the dependent variable exploratory innovation. The regression analysis of the full model showed that the model was not significant, and the control variables did not explain the variations in exploratory innovation. This full model had a F-statistic of .500 and high p-value of .807. R^2 and Adjust R^2 were .022 and -.022. Only governorate-Lower had a negative relation in the model. This relationship was not significant, though, perhaps means that businesses in governorates with less than the mean of 795,188.96 residents decrease exploratory innovation more than businesses in governorates with greater than the mean population.

6.2.2 Controls and Exploitative Innovation

None of the control variables were found to significantly influence the dependent variable exploitative innovation at 1%, 5%, 10% or 15% significance level (see Table 6.2). Model 1b regressed gender. The model had a F-statistic of .375 and was not significant. Model 2b regressed habitual (number of businesses established or operated) with the dependent variable exploitative innovation. The model had $R^2 = .002$, adjusted $R^2 = -.005$, F-statistic = .329 and p-value = .567. Model 3b had a low F-statistic of .728, R^2 of .005, adjusted R^2 of -.002 and p-value of .395. Firm age was regressed in model 4b with the dependent variable exploitative innovation. R^2 and adjusted R^2 for this model were .000 and -.007. The model also had a very low F-statistics of .001 and p-value of .979.

Governorate-Lower was regressed in model 5b with the dependent variable exploitative innovation. Model 5b had R^2 and adjusted R^2 of .012 and .004, respectively. The model was not significant at .01, .05, .10 and .15 significance levels but significance at 25% significance level. The model had F-statistic of 1.621 and p-value of .205. Model 6b regressed the services industry control variable. The model was not significant. The F-statistic was very low of .003 and p-value of 0.958. R^2 and adjusted R^2 for the model were .000 and -.007, respectively.

As regards the full model (Full_control b), all control variables were regressed on the dependent variable exploitative innovation. No control variables explained any significant variation in exploitative innovation. The full model had an R^2 of .022, adjusted R^2 of -.022, F-statistics of .498 and p-value of .809. Habitual entrepreneurship, firm size, and services industry had a negative relationship with exploitative innovation. Entrepreneurs who established or operated one business negatively associated with exploitative innovation. Additionally, medium businesses and businesses not in the services industry were positively associated with exploitative innovation.

Table 6. 1: Regression models for control variables and exploratory innovation

	Model 1a			Model 2a			Model 3a			Model 4a		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>												
Gender	.149 (.159)	.936	.351	---	---	---	---	---	---	---	---	---
Habitual	---	---	---	.009 (.144)	.063	.950	---	---	---	---	---	---
Small-Medium	---	---	---	---	---	---	.306 (.343)	.892	.374	---	---	---
Firm Age	---	---	---	---	---	---	---	---	---	.006 (.006)	.892	.374
Governorate-Lower	---	---	---	---	---	---	---	---	---	---	---	---
Services	---	---	---	---	---	---	---	---	---	---	---	---
Constant	3.689 (.212)	17.409	<.001	3.870 (.114)	33.888	<.001	3.583 (.335)	10.689	<.001	3.830 (.087)	44.263	<.001
R ²	.006			.000			.006			.006		
Adjusted R ²	-.001			-.007			-.001			-.001		
F Statistic	.876		.351	.004		.950	.796		.374	.796		.374

Table 6.1 Regression models for control variables and exploratory innovation

	Model 5a			Model 6a			FULL control(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>									
Gender	---	---	---	---	---	---	-0.149 (0.168)	-0.890	0.375
Habitual	---	---	---	---	---	---	0.021 (0.151)	0.136	0.892
Small-Medium	---	---	---	---	---	---	0.352 (0.353)	0.998	0.320
Firm Age	---	---	---	---	---	---	0.006 (0.007)	0.931	0.354
Governorate-Lower	-.041 (.140)	-.296	.768	---	---	---	-0.049 (0.141)	-0.347	0.729
Services	---	---	---	.085 (.140)	.606	.546	0.065 (0.147)	0.446	0.656
Constant	3.896 (.098)	39.596	<.001	3.833 (.099)	38.715	<.001	3.578 (0.414)	8.651	<.001
R ²	.001			.003			0.022		
Adjusted R ²	-.007			-.005			-0.022		
F Statistic	.088		.768	.367		.546	0.500		0.807

Table 6. 2: Regression models for control variables and exploitative innovation

	Model 1b			Model 2b			Model 3b			Model 4b		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>												
Gender	.091 (.149)	.613	.541	---	---	---	---	---	---	---	---	---
Habitual	---	---	---	-.078 (.135)	-.574	.567	---	---	---	---	---	---
Small-Medium	---	---	---	---	---	---	-.274 (.321)	-.853	.395	---	---	---
Firm Age	---	---	---	---	---	---	---	---	---	.000 (.006)	-.026	.979
Governorate-Lower Services	---	---	---	---	---	---	---	---	---	---	---	---
Constant	4.067 (.199)	20.446	<.001	4.231 (.107)	39.577	<.001	4.444 (.314)	14.143	<.001	4.184 (.081)	51.441	<.001
R ²	.003			.002			.005			.000		
Adjusted R ²	-.005			-.005			-.002			-.007		
F Statistic	.375		.541	.329		.567	.728		.395	.001		.979

Table 6.2 Regression models for control variables and exploitative innovation

	Model 5b			Model 6b			FULL control(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>									
Gender	---	---	---	---	---	---	.079 (.157)	.500	.618
Habitual	---	---	---	---	---	---	-.080 (.142)	-.562	.575
Small-Medium	---	---	---	---	---	---	-.307 (.330)	-.930	.354
Firm Age	---	---	---	---	---	---	.001 (.006)	.127	.899
Governorate-Lower	.166 (.130)	1.273	.205	---	---	---	.163 (.133)	1.233	.220
Services	---	---	---	.007 (.131)	.005	.958	-.038 (.138)	-.280	.780
Constant	4.100 (.092)	44.708	<.001	4.179 (.093)	44.976	<.001	4.359 (.407)	10.700	<.001
R ²	.012			.000			.022		
Adjusted R ²	.004			-.007			-.022		
F Statistic	1.621		.205	.003		.958	.498		.809

6.3 Technology Adoption

The technology adoption block represents two constructs: performance expectancy and intention to use. Both constructs were regressed together with control variables on the dependent variables (exploratory innovation and exploitative innovation), this is needed to test H1.

6.3.1 Technology Adoption and Exploratory Innovation

In the full model (Full_tech a), both independent variables performance expectancy and intention to use were regressed with the control variables on exploratory innovation (see Table 6.3). The model was significant at 1% level of significance with F-statistic =3.032 and p-value =.004. The R^2 and adjusted R^2 for the model were .157 and .105 respectively. The results indicate that approximately 15.7% of the variance in exploratory innovation is explained by gender, habitual, firm size, firm age, governorate-lower, services, performance expectancy and intention to use.

Performance expectancy and intention to use were positively significant at 15% and 10% levels, respectively. Exploratory innovation will increase by 0.190 unit for one-unit increase in performance expectancy. Additionally, a one-unit increase in intention to use will increase exploratory innovation by 0.267 unit.

Gender was negatively associated in the full model. This indicates that female entrepreneurs were less likely to pursue exploratory innovation than male entrepreneurs, $B = -0.21$, $t(130) = -1.31$, $p = .193$. Based on this sample, the result suggests that moving from the female to male category of gender will decrease the mean value of exploratory innovation by 0.206 units on average. Habitual entrepreneurship did not significantly predict exploratory innovation, $B = -0.03$, $t(130) = -0.21$, $p = .834$. Thus, a one-unit increase in habitual entrepreneurship does not have a significant effect on exploratory innovation. Firm size (Small_medium) did not significantly predict exploratory

innovation, $B = 0.23$, $t(130) = 0.70$, $p = .487$. Firm age did not significantly predict exploratory innovation, $B = 0.003$, $t(130) = 0.48$, $p = .633$. As such, a one-unit increase in firm age does not have a significant effect on exploratory innovation. Governorate-Lower did not significantly predict exploratory innovation, $B = -0.13$, $t(130) = -0.98$, $p = .327$. To clarify, a one-unit increase in governorate-lower does not have a significant effect on exploratory innovation. Services did not significantly predict exploratory innovation, $B = -0.06$, $t(130) = -0.39$, $p = .694$.

Performance expectancy is positively associated with exploratory innovation, the statistical significance is weakly significant and statistics are $B = 0.19$, $t(130) = 1.46$, $p = .147$. This indicates that on average, a one-unit increase of performance expectancy will increase the value of exploratory innovation by 0.19 units. Intention to use significantly predicted exploratory innovation, $B = 0.27$, $t(130) = 1.93$, $p = .055$. This indicates that on average, a one-unit increase of intention to use will increase the value of exploratory innovation by 0.27 units.

6.3.2 Technology Adoption and Exploitative Innovation

As for technology and exploitation (see Table 6.4), performance expectancy, intention to use and all the control variables were regressed together on exploitative innovation. This technology and exploitation full model (Full_tech b) suggest some effects. The model results were $F\text{-statistic} = 4.169$, $R^2 = .204$, adjusted $R^2 = .155$ and $p\text{-value} < .001$. The results indicated that 20.4% variation in exploitative innovation was explained by performance expectancy, intention to use and six control variables. Five out of six control variables had negative relationships with exploitative innovation. Governorate population location was the only control variable with a positive relationship in the regression model, but it was not significant, $p\text{-value} = .520$. Additionally, performance expectancy and intention to use were significantly predicting exploitative innovation. Although, it is

noteworthy that, firm size and industry type had a level of significance of .163 (t ratio= -1.403) and .207 (t ratio= -1.268), respectively. Based on this sample, this suggests that firm size (Small-Medium) will decrease the mean value of exploitative innovation by 0.42 units on average. A one unit increase in industry type will decrease the mean value of exploitative innovation by 0.162 units.

The p-value for performance expectancy and intention to use were .029 (t ratio =2.210) at .05 level of significance and .067 at .10 level of significance (t ratio =1.848).

Table 6. 3: OLS Regression models of exploratory innovation by technology adoption

	Control			FULL tech(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.149 (0.168)	-0.890	0.375	-0.206 (0.157)	-1.309	0.193
Habitual	0.021 (0.151)	0.136	0.892	-0.030 (0.142)	-0.210	0.834
Small-Medium	0.352 (0.353)	0.998	0.320	0.232 (0.332)	0.698	0.487
Firm Age	0.006 (0.007)	0.931	0.354	0.003 (0.006)	0.479	0.633
Governorate-Lower	-0.049 (0.141)	-0.347	0.729	-0.132 (0.134)	-0.983	0.327
Services	0.065 (0.147)	0.446	0.656	-0.055 (0.141)	-0.394	0.694
<i>Independent Variables</i>						
Performance Expectancy	-----	-----	-----	0.190 (0.130)	1.459	0.147
Intention to Use	-----	-----	-----	0.267 (0.138)	1.934	0.055
Constant	3.578 (0.414)	8.651	<.001	1.915 (0.535)	3.580	<0.001
R ²	0.022			0.157		
Adjusted R ²	-0.022			0.105		
F Statistic	0.500		0.807	3.032		0.004

Table 6. 4: OLS Regression models of exploitative innovation by technology adoption

	Control			FULL_tech(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.079 (0.157)	-0.500	0.618	-0.141 (0.143)	-0.981	0.329
Habitual	-0.080 (0.142)	-0.562	0.575	-0.135 (0.129)	-1.046	0.297
Small-Medium	-0.307 (0.330)	-0.930	0.354	-0.424 (0.302)	-1.403	0.163
Firm Age	0.001 (0.006)	0.127	0.899	-0.002 (0.006)	-0.425	0.671
Governorate-Lower	0.163 (0.133)	1.233	0.220	0.079 (0.122)	0.645	0.520
Services	-0.038 (0.138)	-0.280	0.780	-0.162 (0.128)	-1.268	0.207
<i>Independent Variables</i>						
Performance Expectancy	-----	-----	-----	0.263 (0.119)	2.210	0.029
Intention to Use	-----	-----	-----	0.232 (0.126)	1.848	0.067
Constant	4.516 (0.388)	11.648	<0.001	2.687 (0.487)	5.518	<0.001
R ²	0.022			0.204		
Adjusted R ²	-0.022			0.155		
F Statistic	0.498		0.809	4.169		<0.001

6.4 Subjective Wellbeing

Well-being consisted of four independent constructs: positive affect, negative affect, happiness, and health. These independent constructs were regressed together with control variables to test hypotheses H2, H3, and H4. Wellbeing is a recent theoretical advancement in entrepreneurship research, though, efforts to integrate the wellbeing factors with contextual entrepreneurial and innovation research is lacking (Pathak, 2021).

6.4.1 Subjective Wellbeing and Exploratory Innovation

The estimation of the effects of all the subjective wellbeing independent variables together with control variables on exploratory innovation are presented in Table 6.5.

This full model (Full_swb a) was significant at 10% level of significance. Results were $R^2 = .122$, adjusted $R^2 = .0554$, F-statistic = 1.781 and p-value = 0.07. The independent variables with the control variables explained 12.2% of the variance in exploratory innovation. Only one of the control variables appeared to associate with exploratory innovation, that is, gender. A one unit increase in gender will decrease exploratory innovation by 1.298 unit.

For the subjective well-being constructs, happiness and health do not predict exploratory innovation and signs are negative. Negative affect-mood and positive affect-mood significantly predict exploratory innovation at 5% and 1% level of significance, respectively.

More specifically, the strongly significant predictor of negative affect was negatively related to exploratory innovation. This indicates that on average, a one-unit increase of negative affect will decrease the value of exploratory innovation by 0.279 units. Positive affect significantly predicted exploratory innovation and was positively related to exploratory innovation. This indicates that on average, a one-unit increase positive affect will increase the value of exploratory innovation by 0.435 units.

6.4.2 Subjective Wellbeing and Exploitative Innovation

The analysis now considers effects of all the subjective wellbeing independent variables together with control variables on exploitative innovation (see Table 6.6).

In the full model (Full_swb b), estimations indicate whether subjective well-being constructs with the control variables significantly predict exploitative innovation. The model was not conventionally significant, and statistics reflect $R^2 = .086$, adjusted $R^2 = .015$, F -statistic = 1.205 and p -value = .294. However, given that the integration and testing of subjective well-being represents a new contextual dimension, and also, very little is known, then, it is beneficial to draw on the estimations and conclude that there is some relevant model fit.

For the subjective well-being constructs, health, happiness, and negative affect were not significant and did not predict exploitative innovation. For the three aforementioned subjective well-being constructs they appear with negative signed coefficients. Positive affect significantly predict exploitative innovation at the 5% level of significance and the relationship with exploitative innovation is positive. This indicates that on average, a one-unit increase of positive affect will increase the value of exploratory innovation by 0.279 units. Specifically, this relationship between positive affect and exploitative innovation suggests a reality that building on existing business-related processes and capabilities could depend on the owner managers positive mood.

Table 6. 5: OLS Regression models of exploratory innovation by subjective well-being

	Control			FULL_swb(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.149 (0.168)	-0.890	0.375	-0.211 (0.162)	-1.299	0.196
Habitual	0.021 (0.151)	0.136	0.892	-0.043 (0.147)	-0.294	0.769
Small-Medium	0.352 (0.353)	0.998	0.320	0.280 (0.340)	0.824	0.411
Firm Age	0.006 (0.007)	0.931	0.354	0.006 (0.006)	0.858	0.392
Governorate-Lower	-0.049 (0.141)	-0.347	0.729	-0.104 (0.141)	-0.741	0.460
Services	0.065 (0.147)	0.446	0.656	0.007 (0.142)	0.052	0.959
<i>Independent Variables</i>						
Health	-----	-----	-----	-0.121 (0.082)	-1.478	0.142
Happiness	-----	-----	-----	-0.043 (0.082)	-0.521	0.603
Negative Affect	-----	-----	-----	-0.279 (0.120)	-2.328	0.022
Positive Affect	-----	-----	-----	0.435 (0.141)	3.087	0.002
Constant	3.578 (0.414)	8.651	<.001	3.284 (0.804)	4.084	<.001
R ²	0.022			0.122		
Adjusted R ²	-0.022			0.054		
F Statistic	0.500		0.807	1.781		0.070

Table 6. 6: OLS Regression models of exploitative innovation by subjective well-being

	Control			FULL swb(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.079 (0.157)	-0.500	0.618	-0.129 (0.155)	-0.831	0.407
Habitual	-0.080 (0.142)	-0.562	0.575	-0.124 (0.141)	-0.886	0.377
Small-Medium	-0.307 (0.330)	-0.930	0.354	-0.350 (0.325)	-1.075	0.284
Firm Age	0.001 (0.006)	0.127	0.899	0.001 (0.006)	0.131	0.896
Governorate-Lower	0.163 (0.133)	1.233	0.220	0.122 (0.135)	0.909	0.365
Services	-0.038 (0.138)	-0.280	0.780	-0.085 (0.136)	-0.621	0.536
<i>Independent Variables</i>						
Health	-----	-----	-----	-0.026 (0.079)	-0.333	0.740
Happiness	-----	-----	-----	-0.018 (0.079)	-0.232	0.817
Negative Affect	-----	-----	-----	-0.158 (0.115)	-1.381	0.170
Positive Affect	-----	-----	-----	0.354 (0.135)	2.628	0.010
Constant	4.516 (0.388)	11.648	<0.001	3.766 (0.769)	4.897	<0.001
R ²	0.022			0.086		
Adjusted R2	-0.022			0.015		
F Statistic	0.498		0.809	1.205		0.294

6.5 Entrepreneurial Behavioral Microfoundations

Entrepreneurial behavioral microfoundations consisted of five independent constructs that are recognized as crucial for nascent, new and established enterprises: passion, self-efficacy, need for Cognition (Cognition), proactivity and resilience (Autio et al, 2014; Zahra et al, 2014). Importantly, these independent constructs were regressed together with control variables to test hypotheses H5, H6, H7, H8 and H9. The fact that these constructs are well established and researched with respect to entrepreneurship and innovation, the following analysis provides insights to further enrich the evidence base of essential psychological and cognitive processes.

6.5.1 Microfoundations and Exploratory Innovation

As Table 6.7 shows, the results of the effects of all the entrepreneurial behavioral microfoundations independent variables together with control variables on exploratory innovation provide interesting insights.

Five independent constructs representing microfoundations were regressed with the control variables on exploratory innovation in the full model (Full_micro a). The model was highly significant at p-value of .001 to predict exploratory innovation. The independent variables with the control variables explained 21.1% of variance in exploratory innovation. The model results were $R^2 = .211$, adjusted $R^2 = .143$, F-statistic = 3.089 and p-value = .001.

When controls are considered, then, firm age was statistically significant and predicted exploratory innovation, p-value = 0.062. Furthermore, a one unit increase in firm age will increase the value of exploratory innovation by 0.012 unit. It is noteworthy to consider the negative association between Governorate population (Governorate-Lower) and exploratory innovation. This indicates that one unit increase in exploratory innovation will decrease governorate population by 0.161 unit.

It is clear from the estimations that some behavioral foundations predict exploratory innovation and novelty. Self-efficacy significantly predicts exploratory innovation at 15% level of significance, $p\text{-value}=.117$. Self-efficacy was positively related to exploratory innovation. A one unit increase in self-efficacy will increase the value of exploratory innovation by 0.249 unit.

Proactivity seems to exert particularly significant effects on exploratory innovation, $p\text{-value}=.004$. Proactivity was positively related to exploratory innovation. A one unit increase in proactivity will increase the value of exploratory innovation by 0.365 unit.

Need for cognition (cognition) significantly predicts exploratory innovation outcomes at 10% level of significance, $p\text{-value}=.072$. Although, need for cognition was negatively related to exploratory innovation and suggests diminishing returns. A one unit increase in need for cognition will decrease the value of exploratory innovation by 0.199 unit.

6.5.2 Microfoundations and Exploitative Innovation

The analysis next considers a full model (Full_micro b). This full model regresses five individual constructs representing microfoundations together with control variables on exploitative innovation. As Table 6.8 shows, results indicate psychological and cognitive behaviors exert significant effects on exploitative innovation, in fact, explain very good variance and strong estimates.

The model was significant at 1% level. The independent variables and the control variable explained 32.9% of variance in exploitative innovation. The model results were $R^2 = .329$, adjusted $R^2 = 0.270$, $F\text{-statistic} = 5.650$ and $p\text{-value} < .001$.

Of the control variables, habitual entrepreneurship was negatively associated to exploitation and significant at 5% level. A one unit increase in habitual will decrease the value of exploitative innovation by .255 unit. Firm age was positively related and

significant at 10% level. Exploitative innovation will increase by .009 unit for one unit increase in entrepreneurial firm age. Interestingly, firm size was negatively associated, although, not significant. A one unit increase in firm size will decrease the value of exploitative innovation by .378 unit and a one unit increase in services will decrease the value of exploitative innovation by .165 unit.

Passion and resilience were not significant in the full model. While self-efficacy, proactivity and cognition were significant at 1% level of significance. Self-efficacy and proactivity were positively related to exploitative innovation, this suggests robustness and the existence of consistent behavior in terms of entrepreneurial participation. Exploitative innovation will increase by .519 unit for one unit increase in self-efficacy and by .414 unit for one unit increase in proactivity. Need for cognition was negatively related to exploitative innovation. For one unit increase in need for cognition, exploitative innovation will decrease by .302 unit.

Table 6. 7: OLS Regression models of exploratory innovation by microfoundations

	Control			FULL_micro(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.149 (0.168)	-0.890	0.375	-0.144 (0.154)	-0.934	0.352
Habitual	0.021 (0.151)	0.136	0.892	-0.133 (0.142)	-0.939	0.350
Small-Medium	0.352 (0.353)	0.998	0.320	0.285 (0.326)	0.873	0.384
Firm Age	0.006 (0.007)	0.931	0.354	0.012 (0.006)	1.885	0.062
Governorate-Lower	-0.049 (0.141)	-0.347	0.729	-0.161 (0.133)	-1.210	0.229
Services	0.065 (0.147)	0.446	0.656	-0.051 (0.136)	-0.372	0.711
<i>Independent Variables</i>						
Passion	-----	-----	-----	0.136 (0.179)	0.756	0.451
Self-efficacy	-----	-----	-----	0.249 (0.158)	1.578	0.117
Proactivity	-----	-----	-----	0.365 (0.124)	2.950	0.004
Need for cognition	-----	-----	-----	-0.199 (0.110)	-1.816	0.072
Resilience	-----	-----	-----	0.000 (0.114)	-0.004	0.997
Constant	3.578 (0.414)	8.651	<.001	1.279 (0.608)	2.103	0.037
R2	0.022			0.211		
Adjusted R2	-0.022			0.143		
F Statistic	0.500		0.807	3.089		0.001

Table 6. 8: OLS Regression models of exploitative innovation by microfoundations

	Control			FULL micro(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & std errs	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.079 (0.157)	-0.500	0.618	-0.055 (0.133)	-0.413	0.680
Habitual	-0.080 (0.142)	-0.562	0.575	-0.255 (0.123)	-2.081	0.039
Small-Medium	-0.307 (0.330)	-0.930	0.354	-0.378 (0.282)	-1.341	0.182
Firm Age	0.001 (0.006)	0.127	0.899	0.009 (0.005)	1.699	0.092
Governorate-Lower	0.163 (0.133)	1.233	0.220	0.010 (0.115)	0.091	0.927
Services	-0.038 (0.138)	-0.280	0.780	-0.165 (0.118)	-1.401	0.164
<i>Independent Variables</i>						
Passion	-----	-----	-----	-0.028 (0.155)	-0.180	0.857
Self-efficacy	-----	-----	-----	0.519 (0.136)	3.803	<0.001
Proactivity	-----	-----	-----	0.414 (0.107)	3.873	<0.001
Need for cognition	-----	-----	-----	-0.302 (0.095)	-3.186	0.002
Resilience	-----	-----	-----	-0.019 (0.098)	-0.191	0.849
Constant	4.516 (0.388)	11.648	<0.001	1.970 (0.526)	3.747	<0.001
R ²	0.022			0.329		
Adjusted R ²	-0.022			0.270		
F Statistic	0.498		0.809	5.650		<0.001

6.6 Social Relations

This block contained one independent construct, namely *wasta* and is concerned with testing hypothesis H10. *Wasta* was regressed together with the control variables on the two dependent variables: exploratory innovation and exploitative innovation. Social relations enable access to resources and strengthen cultural association (Autio et al, 2014; Pathak, 2020).

6.6.1 Social Relations and Exploratory Innovation

The full model (Full_ *wasta* a) regressed *wasta* together with the control variables on exploratory innovation and the model was not significant (see Table 6.9). The model results were $R^2 = .031$, adjusted $R^2 = -0.021$, F-statistic = 0.594 and p-value = 0.760. Results show that neither control variables or *wasta* seem to influence exploratory innovation, this suggests no considerable role for *wasta*.

6.6.2 Social Relations and Exploitative Innovation

As for *Wasta* regressed together with the control variables on exploitative innovation in the full model (Full_ *wasta* b), the model was relatively insightful (see Table 6.10). While only significant at 25% level, *wasta* and the control variables explained 6.5% of variance in exploitative innovation, $R^2 = .065$, adjusted $R^2 = .015$, F-statistic = 1.306 and p-value = .252.

Also, although the model was not conventionally significant, the estimation results help to provide relevant insights in line with Autio et al's (2014) contextual dimensions framework. Correspondingly, it should be stressed that social capital was measured during Covid 19, that is, almost all socialisation was impacted.

Thus, it is noteworthy that the control Governorate-Lower was positively associated, though not statistically significant. Exploitative innovation will increase by .162 unit, for one unit increase in Governorate-Lower. *Wasta* was positively significant at 5%

level. A one unit increase in wasta will increase the value of exploitative innovation by .141 unit.

Table 6. 9: OLS Regression models of exploratory innovation by social influences (wasta)

	Control			FULL_wasta(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.149 (0.168)	-0.890	0.375	-0.149 (0.168)	-0.890	0.375
Habitual	0.021 (0.151)	0.136	0.892	0.012 (0.151)	0.080	0.936
Small-Medium	0.352 (0.353)	0.998	0.320	0.337 (0.353)	0.956	0.341
Firm Age	0.006 (0.007)	0.931	0.354	0.006 (0.007)	0.973	0.332
Governorate-Lower	-0.049 (0.141)	-0.347	0.729	-0.050 (0.141)	-0.351	0.726
Services	0.065 (0.147)	0.446	0.656	0.066 (0.147)	0.449	0.654
<i>Independent Variable</i>						
Wasta	-----	-----	-----	0.067 (0.062)	1.074	0.285
Constant	3.578 (0.414)	8.651	<.001	3.372 (0.456)	7.397	<0.001
R ²	0.022			0.031		
Adjusted R ²	-0.022			-0.021		
F Statistic	0.500		0.807	0.594		0.760

Table 6. 10: OLS Regression models of exploitative innovation by social influences (wasta)

	Control			FULL_wasta(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.079 (0.157)	-0.500	0.618	-0.078 (0.154)	-0.508	0.612
Habitual	-0.080 (0.142)	-0.562	0.575	-0.097 (0.139)	-0.699	0.486
Small-Medium	-0.307 (0.330)	-0.930	0.354	-0.338 (0.325)	-1.042	0.299
Firm Age	0.001 (0.006)	0.127	0.899	0.001 (0.006)	0.227	0.821
Governorate-Lower	0.163 (0.133)	1.233	0.220	0.162 (0.130)	1.248	0.214
Services	-0.038 (0.138)	-0.280	0.780	-0.038 (0.135)	-0.278	0.782
<i>Independent Variable</i>						
Wasta	-----	-----	-----	0.141 (0.057)	2.459	0.015
Constant	4.516 (0.388)	11.648	<0.001	4.082 (0.420)	9.728	<0.001
R ²	0.022			0.065		
Adjusted R ²	-0.022			0.015		
F Statistic	0.498		0.809	1.306		0.252

6.7 Combined Effects of Contextual Dimensions and Entrepreneurial Innovation

I next consider the combined effects regression models. For this analysis, I included each statistically significant contextual independent variable in the preceding analysis of blocks to provide further support for consistent findings yet consider inconsistencies. This approach allows for the identification of consistent effects in terms of strong predictors of entrepreneurial innovation in accordance with the previous blocks and results, and also, at least to some degree, specifies any differences between exploitative innovation and exploratory innovation.

Therefore, this is a relatively conservative approach to test for the evolution of combined effects, as selection bias is largely removed, ease of interpretation facilitated and reassurance regarding robustness of effects assured (see Acs et al, 2014; Autio and Rannikko, 2016).

For exploratory innovation (see Table 6.11), intention to use technology was included from the technology adoption block and performance expectancy was dropped. The model proved highly significant after dropping performance expectancy. Two subjective wellbeing constructs were dropped that are health and happiness, while two subjective wellbeing constructs were included that are negative affect and positive affect. Three entrepreneurial behavioral microfoundations constructs were included: self-efficacy, proactivity and need for cognition. The social construct and *wasta* was not included in the model.

A full model (Full_comb a) to predict exploratory innovation was tested with the independent variables intention to use, negative affect, positive affect, self-efficacy, proactivity, need for cognition and all control variables gender, habitual, firm size, firm age, governorate population and industry type.

The model was significant at 1% level of significance, $R^2 = .269$, adjusted $R^2 = .199$, F -statistic = 3.860 and p -value $< .001$. The independent variables and the control variables explained 26.9% of variance in exploratory innovation.

Gender was an interesting result and negatively associated with exploratory innovation, though, not statistically significant $B = -0.205$, $t(126) = -1.36$, $p = .176$. This indicates that moving from the female to male category of gender will decrease the mean value of exploratory innovation by 0.205 unit on average. Governorate population (Governorate-Lower) was negatively significant at 10% level, $B = -0.232$, $t(126) = -1.78$, $p = .077$. This indicates that one unit increase in Governorate-Lower will decrease the value of exploratory innovation by .232 unit.

Intention to use technology was positively significant at 1% level, $B = 0.281$, $t(126) = 2.731$, $p = .007$. A one-unit increase in intention to use will increase the value of exploratory innovation by .281 unit. Negative affect was negatively significant at 10% level, $B = -0.166$, $t(126) = -1.638$, $p = .104$. This indicates that a one-unit increase in negative affect will decrease the value of exploratory innovation by 0.166 unit. Positive affect was positively associated, but not statistically significant. Exploratory innovation will increase by .172 unit for one-unit increase in positive affect.

Self-efficacy was positively significant at 15% level, $B = 0.197$, $t(126) = 1.448$, $p = .150$. Exploratory innovation will increase by .197 unit for one-unit increase in self-efficacy. Proactivity was positively significant at 5% level, $B = 0.289$, $t(126) = 2.503$, $p = .014$. A one-unit increase in proactivity will increase the value of exploratory innovation by .289 unit. Need for cognition was negatively significant at 5% level, $B = -0.214$, $t(126) = -2.016$, $p = .046$. Therefore, exploratory innovation will decrease by .214 unit for one-unit increase in need for cognition.

For exploitative innovation (see Table 6.12), technology performance expectancy and intention to use technology were included from the technology adoption block. Three subjective wellbeing constructs were dropped that are health, happiness and negative affect while, one subjective wellbeing construct was included and that is positive affect. Three entrepreneurial behavioral microfoundations constructs were included: self-efficacy, proactivity and need for cognition. The social construct and *wasta* was included.

A full model (Full_comb b) to predict exploitative innovation was tested with the independent variables performance expectancy, positive affect, self-efficacy, proactivity, need for cognition, *wasta* and the six control variables gender, habitual, firm size, firm age, governorate population and industry type.

The model was significant at 1% level, $R^2 = .391$, adjusted $R^2 = .328$, F-statistic = 6.174 and p-value < .001. The independent variables and the control variables explained 39.1% of the variance in exploitative innovation.

Firm size (Small-Medium) was negatively significant at 15% level, $B = -0.407$, $t(125) = -1.502$, $p = .136$. Exploitative innovation will decrease by .407 unit for one-unit increase in firm size. Industry type (services) was negatively significant at 10% level, $B = -0.204$, $t(125) = -1.775$, $p = .078$. A one-unit increase in services will decrease the value of exploitative innovation by 0.204. Technology performance expectancy was positively significant at 10% level, $B = 0.183$, $t(125) = 1.686$, $p = .094$. Exploitative innovation will increase by .183 unit for one-unit increase in performance expectancy. Intention to use was not significant, and also, positive affect was not significant.

Self-efficacy was positive and statistically significant at 1% level, $B = 0.375$, $t(125) = 3.183$, $p = .002$. Exploitative innovation will increase by .375 unit for one-unit increase in self-efficacy. Proactivity was positively significant at 1% level, $B = 0.309$, $t(125) =$

3.098, $p = .002$. Accordingly, a one-unit increase in proactivity will increase the value of exploitative innovation by .309 unit.

Need for cognition was negative and significant at 1% level, $B = -0.344$, $t(125) = -3.762$, $p < .001$. Exploitative innovation will decrease by .344 unit for one-unit increase in need for cognition. Wasta was positively associated to exploitation, however, only somewhat statistically significant $B = 0.066$, $t(125) = 1.350$, $p = .179$. A one-unit increase in wasta will increase the exploitative innovation by .066 unit.

Table 6. 11: OLS Regression models of exploratory innovation by technology adoption, subjective wellbeing and microprocesses

	Control			FULL-comb(a)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.149 (0.168)	-0.890	0.375	-0.205 (0.151)	-1.360	0.176
Habitual	0.021 (0.151)	0.136	0.892	-0.147 (0.137)	-1.068	0.288
Small-Medium	0.352 (0.353)	0.998	0.320	0.214 (0.315)	0.677	0.500
Firm Age	0.006 (0.007)	0.931	0.354	0.008 (0.006)	1.253	0.212
Governorate-Lower	-0.049 (0.141)	-0.347	0.729	-0.232 (0.130)	-1.780	0.077
Services	0.065 (0.147)	0.446	0.656	-0.123 (0.134)	-0.919 (0.360)	0.360
<i>Independent Variables</i>						
<u>Technology Adoption</u>						
Intention to Use	-----	-----	-----	0.281 (0.103)	2.731	0.007
<u>Subjective Wellbeing</u>						
Negative Affect	-----	-----	-----	-0.166 (0.101)	-1.638 (0.104)	0.104
Positive Affect	-----	-----	-----	0.172 (0.147)	1.171	0.244
<u>Microprocesses</u>						
Self-efficacy	-----	-----	-----	0.197 (0.136)	1.448	0.150
Proactivity	-----	-----	-----	0.289 (0.115)	2.503	0.014
Need for cognition	-----	-----	-----	-0.214 (0.106)	-2.016	0.046
Constant	3.578 (0.414)	8.651	<.001	1.170 (0.726)	1.612	0.110
R ²	0.022			0.269		
Adjusted R ²	-0.022			0.199		
F Statistic	0.500		0.807	3.860		<0.001

Table 6. 12: OLS Regression models of exploitative innovation by technology adoption, subjective wellbeing, microprocesses and social influences

	Control			FULL_comb(b)		
	Coef. & Std Err.	t ratios	Level of sig	Coef. & Std Err.	t ratios	Level of sig
<i>Controls</i>						
Gender	-0.079 (0.157)	-0.500	0.618	-0.108 (0.130)	-0.834	0.406
Habitual	-0.080 (0.142)	-0.562	0.575	-0.264 (0.117)	-2.251	0.026
Small-Medium	-0.307 (0.330)	-0.930	0.354	-0.407 (0.271)	-1.502	0.136
Firm Age	0.001 (0.006)	0.127	0.899	0.006 (0.005)	1.075	0.284
Governorate-Lower	0.163 (0.133)	1.233	0.220	-0.019 (0.111)	-0.168	0.867
Services	-0.038 (0.138)	-0.280	0.780	-0.204 (0.115)	-1.775	0.078
<i>Independent Variables</i>						
<u>Technology Adoption</u>						
Performance Expectancy	-----	-----	-----	0.183 (0.109)	1.686	0.094
Intention to Use	-----	-----	-----	0.108 (0.117)	0.929	0.355
<u>Subjective Wellbeing</u>						
Positive Affect	-----	-----	-----	0.106 (0.127)	0.834	0.406
<u>Microprocesses</u>						
Self-efficacy	-----	-----	-----	0.375 (0.118)	3.183	0.002
Proactivity	-----	-----	-----	0.309 (0.100)	3.098	0.002
Need for cognition	-----	-----	-----	-0.344 (0.091)	-3.762	<0.001
<u>Social Influences</u>						
Wasta	-----	-----	-----	0.066 (0.049)	1.350	0.179
Constant	4.516 (0.388)	11.648	<0.001	1.221 (0.586)	2.084	0.039
R ²	0.022			0.391		
Adjusted R ²	-0.022			0.328		
F Statistic	0.498		0.809	6.174		<0.001

6.8 Conclusion

The preceding sections 6.2 to 6.7 presented the regression analysis and results related to the context of entrepreneurial innovation, in particular, exploitation and exploration. The results subsection 6.2 presented the regression statistical analysis of the control variables. As regards 6.3 to 6.6, these subsections presented the regression statistical analysis for the effects of contextual dimensions represented as blocks of independent variables: technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations. Section 6.7 presented the findings of the combined contextual effects full regression models, using a robust conservative approach and avoiding selection bias. The next chapter will discuss the results in relation to theory and identify contributions to knowledge.

Chapter.7 Discussion

7.1 Introduction

This chapter discusses the importance of the regression results. In particular, the empirical results contribute to knowledge and provide some important original insights that help to advance the state of scholarly research. Accordingly, *first*, the significant relationships between contextual entrepreneurship dimensions and exploratory innovation are discussed and illuminated. *Second*, the significant relationships between contextual entrepreneurship dimensions and exploitation are discussed and illuminated. *Third*, perhaps most crucially, how combinations of contextual entrepreneurship dimensions relate differently to exploratory innovation and exploitative innovation is discussed. Also, the discussion helps to answer the *research questions* that underpin the research.

7.2 Contextual entrepreneurship and exploratory innovation

This section addresses the following research question: *What are the effects of technology adoption, subjective wellbeing, entrepreneurial behavioral foundations and social relations on exploratory innovation in the context of SMEs in Kuwait?* The results contribute to knowledge and suggest that exploratory innovation is predicted by some specific contextual entrepreneurial dimensions considered in isolation. For Wigren-Kristofersen et al (2019), the idea that entrepreneurship and innovation are fundamentally considered a contextual phenomenon suggests a creative environment and exploratory capabilities are linked to contextual enablers. The finding that exploratory innovation is predicted by specific contextual dimensions embraces the call to understand ‘*what*’ aspects of context are decisive to build powerful innovation leadership (Pollack et al., 2020; Welter et al, 2019), and promote a competitive disposition (Shirokova et al, 2022).

As regards technology adoption (TA), two constructs are important: performance expectancy and intention to use. Performance expectancy (PE) is defined as “the degree to which an SME owner perceives that using IT innovation would be free of effort, takes less effort, or is user-friendly” (Moghavvemi et al., 2012, p.235). Intention to use or behavior intention (BI) is defined as “behavior intention indicating how SME owners are willing to try and exert effort in order to perform the behavior’ (Moghavvemi et al., 2012, p.236). Both constructs were tested together in one block to investigate their relationship with exploratory innovation. The findings indicate that intention to use (BI) is significant in predicting exploratory innovation. However, both PE and intention to use (BI) are significant in predicting exploratory innovation.

The findings are in line with the literature on innovation and technology adoption (Kleis et al., 2012; Haro-Domínguez et al., 2010). Additionally, this supports arguments about the strategic importance of technology adoption for SMEs (Jin, 2007; Haro-

Domínguez et al., 2010), and the importance of IT for innovation in businesses (Nambisan, 2013; Zhang et al., 2016). Venkatesh et al. (2003) suggest that innovative firms adopt technology. This can be understood from the use of emerging technologies like cloud computing or new chatbots. Shiau and Chau (2014) explain that cloud computing services can simultaneously act as exploratory and exploitative innovations. They added that this technology can either improve or create current services or products.

Straub (2009) argues that IT needs a persistent process of improvements during implementation or a “cycle of continual technology implementation” with the evolution of new technology like cloud computing or artificial intelligence (p.643). However, looking at these new technologies’ ease of use and adoption may facilitate faster and smoother adoption for SMEs (Venkatesh et al., 2003; Ratten, 2015).

The finding that PE is positively related to exploratory innovation is consistent with studies on the influence of TA on business performance (Mensah et al., 2021; Upadhyay et al., 2021; Ceipek et al., 2021; Durmuşoğlu and Barczak, 2011). Chiu and Hofer (2015) argued that the higher the PE for a technology, the higher the entrepreneur’s chance to explore it. However, this finding contradicts that of Moghavvemi et al. (2017) who found that PE does not influence innovation. Furthermore, Ratten (2015) found no relationship between PE and innovation adoption. Additionally, Moghavvemi et al. (2017) argued that male entrepreneurs are more likely to use IT innovation. This argument is not supported by the sample. Gender is found to be negatively related to exploratory innovation. This finding contradicts the study conducted by Moghavvemi et al. (2017). They found male entrepreneurs are more likely to use IT innovation. Thus, male entrepreneurs decrease exploratory innovation for a one-unit increase in PE. This argument also contradicts Venkatesh et al.’s (2012) findings.

The relationship between intention to use and exploratory innovation is positively significant. This finding is in line with the literature (Chiu and Hofer, 2015; Sivathanu, 2019; Durmuşoğlu and Barczak, 2011; Dasgupta et al., 2009; Hoi, 2020) and resulted in supporting H1c. In contrast, Slade et al. (2015) found that innovativeness predicts the BI to use a technological innovation. However, Kabra et al. (2017) found no relationship between BI and innovativeness. In contrast, studies have argued that PE is the strongest predictor of BI, and BI is a predictor of the intention to use (Nordhoff et al., 2021; Venkatesh et al., 2003; Venkatesh et al., 2012; Dasgupta et al., 2009; Kabra et al., 2017). Thus, PE influences BI to stimulate intention to use. However, this study suggests that BI and PE can directly predict intention to use innovation.

In respect of subjective wellbeing (SWB), this context includes the following components: health, happiness and affect/mood (negative affect and positive affect) (PANAS). This study considers SWB as an umbrella for entrepreneurial mood, emotions, health and affect (negative and positive), as argued by Diener and Ryan (2009). The findings suggest that health, and positive and negative affect predict exploratory innovation in the full SWB model. Happiness was not a predictive variable of exploration. This is consistent with that of Foo (2011). This study reports that positive and negative emotions help explore risky high-value opportunities. The author adds that anger and happiness trigger a confident mentality.

Health is framed as the general health of an entrepreneur. White and Gupta (2020) claimed that stress, burnout and exhaustion could affect creativity. Entrepreneurs, especially early-stage entrepreneurs, face stress and pressure on a daily basis (Stroe et al., 2020). Stress affects general health and poor health results in poor outcomes (Levasseur et al., 2019). Consequently, entrepreneurs must recover. It has been argued that the daily drivers of creativity for individuals are physiological and mental recovery (Weinberger et

al., 2018). Health seems to have some relevance for entrepreneurs in our sample, though, it seems positive affect and negative affect better predict exploratory innovation. This finding is similar to that of Sweida and Sherman (2020) who found that positive affect influences health and health influences creativity. Liu and Munier (2019) highlighted that innovation increases life satisfaction. Additionally, these findings are in line with those of Levasseur et al. (2019) who stressed the need for good quality of general health for good outcomes. However, Meijer et al. (2009) indicate that innovation predicts an individual's general health.

Entrepreneurial process has been found to be influenced by mood and emotions (Baron, 2008). Cardon et al. (2012) defined entrepreneurial emotion as “the affect, emotions, moods, and/or feelings — of individuals or a collective — that are antecedent to, concurrent with, and/or a consequence of the entrepreneurial process, meaning the recognition/creation, evaluation, reformulation, and/or the exploitation of a possible opportunity” (p.3).

Affect and emotions can be framed as similar definitions of an individual reaction or response to a situation (Cardon et al., 2012). Affect was tested using the Positive and Negative Affect Scale (PANAS) developed by Watson (1988). Its findings highlighted that negative affect and positive affect predicted exploratory innovation.

Negative affect is found to be negatively related to exploratory innovation. This research suggests that negative affect negatively influences exploration. The higher the negative affect of entrepreneurs, the lower their exploratory innovation. This finding contradicts the works of Madrid and Patterson (2016), Baas et al. (2008), De Dreu et al. (2008) and George and Zhou (2007) which suggest that negative affect positively influences creative solutions but does not generate new ideas because individuals feel that their environment is unpleasant and needs more work. Additionally, Stroe et al. (2020)

explained that negative affect induces negative thoughts and distracts entrepreneurs' motivation and focus. Watson et al. (1988) defined negative affect as the feeling of sadness or lack of energy. Contrary to this argument, negative affect can be beneficial for entrepreneurs by allowing them to spend more time and effort working on their challenges (Foo et al., 2009). This may explain its significance in predicting exploratory innovation among Kuwaiti SME owners. Another explanation for this significance is that early-stage entrepreneurs are more likely to have negative feelings than experienced entrepreneurs (Stroe et al., 2020; Gong et al., 2022). In addition, strong emotions, such as positive or negative affects are argued to impact decision making to dedicate resources or acquire new resources (Sweida and Sherman, 2020).

Positive affect was found to be a stronger predictor of exploratory innovation than negative affect. This is consistent with the literature (Madrid and Patterson, 2016; Baas et al., 2008, De Dreu et al., 2008; Foo et al., 2009; Baron and Tang, 2011; Baron, Tang and Hmieleski, 2011). The rationale is that positive affect influences exploratory innovation, such as generating new ideas or acquiring new knowledge (George and Zhou, 2007; Baron et al., 2011; Sweida and Sherman, 2020). Additionally, Pathak (2021) suggested that positive affect broadens entrepreneurs' awareness of innovative ideas. Pathak (2021) added that "individuals who experience positive emotions are more likely to discover non-obvious alternatives" (p.2005).

With regards entrepreneurial behavioral microfoundations, there are a multiplicity of components: entrepreneurial passion, entrepreneurial self-efficacy, entrepreneurial proactivity, need for cognition and entrepreneurial resilience.

Broadly speaking, when considering this important micro entrepreneurial context, firm age is positively related to exploratory innovation. Firm age findings can be explained as: the more experienced the entrepreneurs, the stronger the ESE (Khedhaouria et al., 2015;

Newman et al., 2019). Firm age is found to be positively related to exploratory innovation in the regression model. This finding is consistent with those of Newman et al. (2019) and Khedhaouria et al. (2015). Khedhaouria et al. (2015) argue that nascent entrepreneurs have no experience in assessing their entrepreneurial self-efficacy compared to experienced entrepreneurs. Thus, the older the firm, the more an entrepreneur is experienced in judging their entrepreneurial self-efficacy to develop new means like new products or services (Damanpour and Daniel Wischnevsky, 2006). The finding contradicts that of Pérez-Luño et al. (2011). They find that firm age is negatively related to innovation and is insignificant in influencing proactivity and exploratory innovation. Both Ko and Liu (2019) and Luu and Nguyen (2021) found no relationship between firm age and exploratory innovation.

For the governorate location, the finding shows that being located in the governorate with above average population is negatively related to the dependent variables. By contrast, Hallak, Brown and Lindsay (2012) suggest that the place of entrepreneurs is positively related to their ESE. They argued that community support is a positive factor in this relationship. Thus, smaller populated governorates are more supportive for businesses to explore innovations. In Kuwait, the capital city is the Al-Asima Governorate. This governorate is the second in the sample with the most participated SME's owners and according to the Public Authority for Civil Information (PACI) census data Al-Asima is the fourth most populated governorate in Kuwait.

Gardner (1994, cited in Kickul and Gundry, 2002) defined entrepreneurial behavior as "vision focused on innovations that meet market needs more effectively" (p.86). In the full entrepreneurial behavioral microfoundations model, entrepreneurial self-efficacy (ESE), proactivity and need for cognition (NFC) predicted exploratory innovation for Kuwaiti entrepreneurs. ESE and proactivity were positively related to exploratory innovation, while NFC was negatively related to it. In comparison, Fuller et al. (2018)

reported that entrepreneurs with high proactivity have high entrepreneurial self-efficacy and anticipatory entrepreneurial cognition that mediates entrepreneurial self-efficacy. They add that “proactive individuals also had higher levels of creative self-efficacy which fostered anticipatory cognitions of entrepreneurship” (p.124). Craig et al. (2014) supported the idea that proactivity positively influences innovation. Furthermore, Kollmann and Stöckmann (2014) suggested that reactivity is positively moderated by exploratory innovation. The negative relationship of NFC with ESE, proactivity and exploratory innovation contradicts the findings of studies in the cognition and innovation domain (Klies et al., 2012; Wei et al., 2020).

Passion is considered the core of entrepreneurship, which can drive and influence creativity (Cardon et al., 2013; Luu and Nguyen, 2021). Entrepreneurial passion is defined as “(1) a consciously accessible, intense positive feeling, and (2) entrepreneurial passion results from engagement in activities with identity meaning and salience to the entrepreneur” (Cardon et al. 2009, p.515).

Passion is positively related to exploratory innovation although it is not statistically significant. This finding is not consistent with the literature (Cai et al., 2021; Luu and Nguyen, 2021; Atuahene-Gima and Murray, 2007; Li and Yeh, 2017, cited in Kiani et al., 2020; Kiani et al., 2020) but the time of the survey during a Covid pandemic may have influenced the results. The importance of entrepreneurial passion helps entrepreneurs succeed in exploring new products (Luu and Nguyen, 2021). Studies have found that passion inspires entrepreneurs to work hard and focus on their work, thereby influencing their creativity (Chang, 2001, cited in Kiani et al., 2020; De Mol et al., 2018, cited in Luu and Nguyen, 2021). Passion also motivates entrepreneurs to generate new ideas (Montiel-Campos, 2017, cited in Li et al., 2020). Bagheri and Yazdanpanah (2017, cited in Li et al.,

2020) argue that new ideas influence entrepreneurs to reassess their abilities to start new businesses with strong entrepreneurial passion.

Self-efficacy is defined as an individual's confidence in their ability to perform a task (Bandura, 1977). This research measured ESE, which is defined as an entrepreneur's confidence in their ability to start a successful business (Dimov, 2010; Hopp and Stephan, 2012) and ability to perform different roles and tasks of entrepreneurship (Boyd and Vozikis, 1994; Chen et al., 1998, cited in Ahlin et al., 2014). ESE was found to predict exploratory innovation and positively influence exploratory innovation. This finding is consistent with those of Luu and Nguyen (2021), Wei et al. (2020), Spreitzer (1995, cited in Ahlin et al., 2014) and Hallak et al. (2018). Additionally, this finding can be explained by the decision to take risk associated with the entrepreneur's belief in their skills in developing new products or services (Bandura, 1997; Krueger Jr. and Dickson, 1994; Kleis et al., 2012; March, 1991). Wei et al. (2020) argued that higher entrepreneurial self-efficacy increases confidence in overcoming the challenges and difficulties faced by entrepreneurs. Inventors with high self-efficacy are more likely to start a business than those with low self-efficacy (Markman et al., 2002, cited in Hmieleski and Baron, 2008).

In this study, proactivity is defined as a proactive orientation. Proactive orientation was adopted from the Entrepreneurial Orientation (EO) theory developed by Covin and Slevin (1989). New ventures gain a competitive edge by implementing proactive strategies (Gao et al., 2018). In this study, proactiveness was found to predict exploratory innovation. This finding is consistent with that of Pérez-Luño et al. (2011). This relationship can be explained by Paladino's (2008, cited in Isabel Jiménez-Zarco et al., 2012) study. The author explains that the higher the market-proactive orientation, the higher the chances of new product success. Kollmann and Stöckmann (2010) argued that proactiveness simplifies the development of new products. The authors also support the research finding that proactive

orientation is positively related to exploratory innovation. Moreover, Amin (2015) argues that access to new knowledge and information is driven by SMEs' high level of proactiveness.

Need for cognition is defined as “an individual’s tendency to engage in and enjoy effortful cognitive endeavors” (Cacioppo et al., 1984, p.306). NFC is used to measure entrepreneur’s motivation and drive to continue learning and enjoy the learning process (Mensmann and Frese, 2019; Cacioppo and Petty, 1982; Cacioppo et al., 1984). As explained by Tian et al. (2016, cited in Berraies, 2022), an entrepreneur’s learning process influences exploratory innovation. The model regressed NFC on exploratory innovation with control variables, and the model was insignificant. However, the NFC alone was found to predict exploratory innovation negatively and significantly. This finding contrasts with the research on NFC and innovation (Dollinger, 2003; Madrid and Patterson, 2016; Wu et al., 2014) and suggests that the need for cognition has a negative relationship with generating new ideas.

Indeed, substantial research argues that creative individuals enjoy the process of generating new ideas. Madrid and Patterson (2016) suggest that NFC is positively related to the generation of new ideas. These findings can be explained by Wu et al.’s (2014) study. They suggested that individuals with high NFC prefer complex tasks and possess better learning skills than those with low NFC. According to Venkatraman and Price (1990) the findings of their study have linked cognitive innovators with a high need for cognition. They define cognition innovativeness as the ability “to measure the desire for new experiences that stimulate thinking” (p.299). Furthermore, Madrid and Patterson (2016) stated that the need for cognition has a positive relationship with generating new ideas.

Resilience is defined as “we view resilience as the ability to recover and positively adapt within the context of adversity in pursuit of personal growth” (Renko et al., 2021,

p.131). Resilience does not predict exploratory innovation. This finding is not consistent with studies of resilience and innovation (Hallak et al., 2018; Bullough et al., 2014; Purwanti and Hapsari, 2022). However, Hallak et al. (2018) argued that this relationship is relevant to entrepreneurs with more than 10 years of experience or ownership. This finding might have been influenced by the timing of the research during the global pandemic Covid-19. According to Korber and McNaughton (2018) entrepreneurs' responses to shocks and challenges improve their resilience when they focus on innovation and learning.

To facilitate interpretation of the key empirical results that contribute to different areas of scholarship, a summary table is provided and confirms whether the regression results find support for each of the hypotheses pertaining to exploratory innovation (see Table 7.1).

Table 7. 1: Summary of the results of the exploratory hypotheses

Exploratory hypotheses	
Hypothesis 1a: Entrepreneur technology adoption - performance expectancy is positively and significantly related to exploratory innovation.	Supported

Hypothesis 1c: Entrepreneur technology adoption - behavior intention is positively and significantly related to exploratory innovation.	Supported
Hypothesis 2a: Health is positively and significantly related to exploratory innovation.	Not Supported
Hypothesis 2c: Happiness is positively and significantly related to exploratory innovation.	Not Supported
Hypothesis 2e: Negative affect is negatively and significantly related to exploratory innovation.	Supported
Hypothesis 2g: Positive affect is positively and significantly related to exploratory innovation.	Supported
Hypothesis 3a: Entrepreneurial passion is positively and significantly related to exploratory innovation.	Not supported
Hypothesis 3c: Entrepreneurial self-efficacy is positively and significantly related to exploratory innovation.	Supported
Hypothesis 3e: Entrepreneurial proactiveness is positively and significantly related to exploratory innovation.	Supported
Hypothesis 3g: The need for cognition is positively and significantly related to exploratory innovation.	Not supported
Hypothesis 3i: Entrepreneurial resilience is positively and significantly related to exploratory innovation.	Supported
Hypothesis 4a: <i>Wasta</i> is positively and significantly related to exploratory innovation.	Not supported

7.3 Contextual entrepreneurship and exploitative innovation

This section discusses the findings pertaining to exploitative innovation and specific enabling contextual dimensions when considered in isolation. Therefore, this section answers the following research question: “*What are the effects of technology adoption, subjective wellbeing, entrepreneurial behavior and social network relations on exploitative innovation in the context of SMEs in Kuwait?*” Indeed, exploitation underlines important processes to improve existing product and processes, I contribute to recent calls to offer a decisive account of specific factors related to innovation with a lower magnitude

of novelty and slower and more incremental path (Autio et al, 2014; Henry and Lewis, 2023; Linan et al, 2016). Also, the finding contributes to the ‘what’ arguments pertaining to contextual entrepreneurship (Chlosta and Welter, 2017; Welter et al, 2019).

Technology adoption is found to be positively related to exploitative innovation. As explained in the previous section, technology adoption comprises the following two variables: performance expectancy (PE) and intention to use (BI). This finding is consistent with that of Moghavvemi et al. (2016). Additionally, this is consistent with the arguments presented by Jin (2007) and Zhang et al. (2016) that IT increases efficiency and effectiveness and influences and enhances innovation. Further, Hong et al. (2018) suggest that technology influences the refinement of existing business processes.

More specifically, performance expectancy is positively related to exploitative innovation; Mensah et al. (2021) explain this significant relationship. They argue that entrepreneurs adopt new technology if they transform changes in their businesses and improve their business performance. Entrepreneurs with higher performance expectancies are more likely to exploit innovation (Chiu and Hofer, 2015). Furthermore, the findings of Upadhyay et al. (2021), Ibrahim et al. (2018), Ceipek et al. (2021), and Zhang et al. (2016) are consistent with those of this study. Hofer (2015) found that adopting innovative service technology improves retail service quality.

Intention to use is positively related to exploitative innovation. This finding is in line with that of Upadhyay et al.’s (2021) study. This significant result is also explained by Chiu and Hofer (2015). They argue that using new technology is more likely to be adopted by innovative — than by un-inventive — individuals. Arguably, intention to use (behavioral intention) predicts the use of technology innovation systems (Venkatesh et al., 2008; Venkatesh et al., 2003). This finding is consistent with that of Sivathanu (2019), Dasgupta et al. (2009), and Durmuşoğlu and Barczak (2011).

As explained in the previous section, subjective wellbeing (SBW) is also tested on exploitation processes. According to Madrid and Patterson (2018), creative thinking is a product of positive or negative affect.

Negative affect appears to relate with exploitative innovation, but it was only significant at the 17% level. A negative affect is negatively related to exploitative innovation. This relationship is expected, as argued by Madrid and Patterson (2018). Williamson et al. (2019) confirm this finding by arguing that negative affect influences an individual's perception and creative thinking. George and Zhou (2007) explain that entrepreneurs with high negative affect try to find solutions and fix their negative feelings toward their environment. These findings contradict those of this study. The results demonstrate that an increase in negative affect decreases the level of exploitative innovation. Moreover, according to Stroe et al. (2020), negative affect drives negative thoughts, thereby distracting entrepreneurs' motivation and focus.

Positive affect is positively related to exploitative innovation, which is in line with findings of prior affect and innovation studies (Davis et al., 2017). Davis et al. (2017) explain that positive individuals are supportive and cooperative. Arguably, this behavior helps share knowledge and develop innovation. Furthermore, positive affect induces creativity and focus (Foo et al., 2009; Baron and Tang, 2011, cited in Baron et al., 2011). Madrid and Patterson (2018) suggest that positive affect predicts creativity. In contrast, according to Williamson et al. (2019), positive affect can be considered to be the generator of exploratory and creative ideas. The governorate is positively related to positive affect and exploitative innovation. George and Zhou (2007) argue that affect is influenced by the environment. In this case, the governorate location — above the average population — positively influences exploitative innovation.

Entrepreneurial behavioral microfoundations predict exploitative innovation processes. One should be made very aware that habitual entrepreneurship, firm size (small–medium), firm age and industry type (service) predict exploitative innovation. Habitual and firm size are negatively related to exploitative innovation. Cardon et al. (2013) find that habitual is not significant for creativity. Additionally, Campos (2017) finds no relationships among entrepreneurs' prior experiences, passion and innovation. These findings are consistent with those of previous studies (Khedhaouria et al., 2015) but contradict Forbes's (2005) finding that firm size is positively related to ESE and that habitual exhibits no relationship with ESE. Kollmann and Stöckmann (2010) find no relationship between a firm's size and exploitative innovation. Additionally, they find that a firm's prior experience (habitual) is positively related to exploitative innovation. Thus, the model's finding contradicts that of Kollmann and Stöckmann (2010). Firm age and industry type positively relate to exploitative innovation. Studies have reported a positive relationship between firm age and self-efficacy (Damanpour and Daniel Wischnevsky, 2006; Khedhaouria et al., 2015; Newman et al., 2019). Small businesses exhibit lower levels of exploitative innovation than medium-sized businesses. This finding is explained by Audretsch and Vivarelli (1996) who argue that small businesses can innovate only if they exploit knowledge developed outside their firms.

However, only three independent constructs are significant in the model—namely, self-efficacy, proactivity and NFC. The findings suggest that entrepreneurs with high levels of self-efficacy and proactiveness are associated with high levels of exploitative innovation, while those with low levels of NFC are associated with high levels of exploitative innovation.

The most notable finding is the negative NFC in the full microfoundations exploitative innovation model. This finding contradicts prior NFC, cognition and

innovation studies (Pan et al., 2021; Wu et al., 2014; Madrid and Patterson, 2016; Chow and Luk, 2006, cited in Jin, 2016). According to Mensmann and Frese (2019) individuals with a high need for cognition exhibit high levels of motivation and enjoyment in cognitive activities. Negative NFC contradicts the argument that innovation requires strong cognitive abilities to exploit current resources or knowledge (Bandura, 1997; March, 1991; Cai et al., 2021).

Passion is not related to exploitative innovation, and this contradicts prior literature on innovation and passion (Li et al., 2020; Luu and Nguyen, 2021). Luu and Nguyen (2021) argue that passion increases entrepreneurs' trust and confidence in their firm's resources and commitment to their work, which encourages entrepreneurs to exploit their firms' knowledge and products. Similarly, creativity has been found to predict ESE (Biraglia and Kadile, 2017). Cardon and Kirk (2015) report that passion for invention is not significant, whereas passion for founding is significant. This significant relationship can be considered exploitative innovation. Cardon and Kirk (2015) find a significant relationship between passion and entrepreneurial behavior. Arguably, firm-level exploitative innovation increases through entrepreneurial passion (Baron, 2008).

Although, our negative, but non-significant findings, lends some credence to Luu and Nguyen (2021) who find an inverted U-shaped relationship between entrepreneurial passion and exploitative innovation. They explain that the higher the level of passion, the higher the expectations for the outcomes. This higher level of expectation diverts entrepreneurs from exploring new knowledge. Jie et al. (2014) claim that exploitation innovation outcomes may not fulfill a high level of outcome expectations.

Self-efficacy positively predicts exploitative innovation. As Bandura (1997) explained, being innovative without self-efficacy is challenging. Spreitzer (1995, cited in Ahlin et al., 2014) agrees with the notion that high self-efficacy correlates with innovation

and success. However, Drnovšek et al. (2010) argue that firms in the growth phase lean toward exploiting innovation more than firms in the start-up phase. Generally, this finding is consistent with prior self-efficacy and innovation studies (Drnovsek and Glas, 2008; Chen and Zhou, 2017, cited in Wei et al., 2020).

Proactiveness is considered an antecedent of innovation (Covin and Miles, 1999, cited in Kreiser et al., 2002). In this study, proactiveness positively predicts exploitative innovation, which is consistent with the findings of Kollmann and Stöckmann (2010), Kollmann and Stöckmann (2014) and Hughes and Morgan (2007). While Pérez-Luño et al. (2011) find no relationship between a firm's proactivity and exploitative innovation, Craig et al. (2014) explained that proactivity influences innovation outputs. Thus, proactive entrepreneurs are more likely to exploit innovation than less proactive entrepreneurs and I support this assertion.

In this study, resilience is found not to predict exploitative exploitation. Resilience is a continuous adaptation process (Windle, Bennett and Noyes, 2011, cited in Franco et al., 2021). Korber and McNaughton (2018) claim that entrepreneurial resilience is strengthened by focusing on continued innovation and learning. Arguably, entrepreneurs tap into their creativity to achieve innovation during challenging and unpleasant times (Russell and Faulkner, 2004). Hallak et al. (2018) support the notion that resilience predicts innovation. Another study supports the finding that resilience is positively related to innovation (Purwanti and Hapsari, 2022). Resilience is related to creative transformation and innovation (Korber and McNaughton, 2018), though, perhaps not in a structured Gulf national system.

The social relations network context assesses *wasta*. It is a term used and known in the Middle East and North Africa (MENA) region and is referred to as “the utilization of personal connections” (Al-Twal, 2021, p.517). *Wasta* is found to be positively related to

exploitative innovation, which is in line with prior studies in the *wasta* domain (Baranik et al., 2018; AlHussainan et al., 2022; Hutchings and Weir, 2006). Related to this, the governorate is found to be positively significant in predicting exploitative innovation, which can be explained by population density. Access to resources and knowledge in these governorates is competitive for entrepreneurs. Hence, arguably, *wasta* is “central to the transmission of knowledge and the creation of opportunity” (Hutchings and Weir, 2006, p.143). According to AlHussainan et al. (2022) *wasta* can help access insights from *wasta* providers, individuals who provide access to finance and knowledge.

To facilitate interpretation of the key empirical results that contribute to different areas of scholarship, a summary table is provided and confirms whether the regression results find support for each hypotheses pertaining to exploitative innovation (see Table 7.2).

Table 7. 2: Summary of the results of the exploitation hypotheses

Exploitation Hypothesis	
Hypothesis 1b: Entrepreneur technology adoption - performance expectancy is positively and significantly related to exploitative innovation.	Supported
Hypothesis 1d: Entrepreneur technology adoption - behavior intention is positively and significantly related to exploitative innovation.	Supported
Hypothesis 2b: Health is positively and significantly related to exploitative innovation.	Not Supported

Hypothesis 2d: Happiness is positively and significantly related to exploitative innovation.	Not Supported
Hypothesis 2f: Negative affect is negatively and significantly related to exploitative innovation.	Not supported
Hypothesis 2h: Positive affect is positively and significantly related to exploitative innovation.	Supported
Hypothesis 3b: Entrepreneurial passion is positively and significantly related to exploitative innovation.	Not supported
Hypothesis 3d: Entrepreneurial self-efficacy is positively and significantly related to exploitative innovation.	Supported
Hypothesis 3f: Entrepreneurial proactiveness is positively and significantly related to exploitative innovation.	Supported
Hypothesis 3h: The need for cognition is positively and significantly related to exploitative innovation.	Not supported
Hypothesis 3j: Entrepreneurial resilience is positively and significantly related to exploitative innovation.	Supported
Hypothesis 4b: <i>Wasta</i> is positively and significantly related to exploitative innovation.	Supported

7.4 Distinctions between Exploratory and Exploitative Innovation Results

The previous sections discussed the findings pertaining to contextual dimensions and exploratory and exploitative innovation with, each respective dimension, considered in isolation. However, this section discusses the findings pertaining to the combined effects of different contextual dimensions taken together on exploratory innovation and exploitative innovation, and also, any variations. Indeed, there are calls to go beyond research that refers to entrepreneurial innovation contexts as one dimensional and narrow (Autio, 2014; Audretsch et al, 2021; Welter et al, 2019). As such, a crucial main contribution reflects how contextual dimensions relate differently to entrepreneurial innovation with varying magnitudes of novelty. I show that certain combinations of complementary contextual dimensions influence both exploratory and exploitative

innovation in a similar way, though, there are some important exceptions, this represents a more realistic entrepreneurial innovation evolutionary pattern. Therefore, this section arguably answers the most important research question: *“Do combined effects of technology adoption, subjective wellbeing, entrepreneurial behaviour and social network relations differ between exploratory and exploitative innovations in the context of SMEs in Kuwait?”*

The research findings present some similar effects when contextual dimensions are combined, though, more importantly, exceptions in the combined effects of contexts on exploratory and exploitative innovation. These differences can be partly explained as exploration is influenced by entrepreneurs’ personal characteristics such as subjective wellbeing (Diener and Ryan, 2009; Pathak, 2021; Baron, 2008; Cardon et al., 2012; Madrid and Patterson, 2018), while the exploitative model is influenced by behavioral microprocesses and cognitive characteristics (Forbes, 2005; Gardner, 1994, cited in Kickul and Gundry, 2002; Hopp and Stephan, 2012; Bandura, 1997).

Intention to use technology is positively and significantly related to exploratory innovation, but this is not significantly related to exploitative innovation. Technology performance expectancy is positively related to exploitative innovation, but this is not significantly related to exploratory innovation. Intention to use or behavior intention (BI) is positively significant to predict exploratory innovation. BI, as a single construct, is argued to predict system use (Venkatesh et al., 2008; Venkatesh et al., 2003). Moghavvemi et al. (2012) define intention to use as “behavior intention indicating how SME owners are willing to try and exert effort in order to perform the behavior” (p.236). Innovative individuals are more likely to use innovative technology than less innovative individuals (Chiu and Hofer, 2015). Koo et al. (2015) explain that exploration stresses “scanning slowly for answers to any questions” (p.137). Technology adoption is argued to reach a

level of easiness that increases its usage (Venkatesh et al., 2003). As a result, BI positively influences the users' behaviors of innovation (Patil et al., 2020).

Performance expectancy is positively significant to exploitative innovation. Performance expectancy is defined as “the degree to which an SME owner perceives using IT innovation would be free of effort or takes less effort or is user-friendly” (Moghavvemi et al., 2012, p.235). Pérez-Luño et al. (2011) claim that adoption of innovation is parallel to exploitative innovation. Performance expectancy is one of the important factors affecting users' adoption of technological innovation (Venkatesh et al., 2003; Moghavvemi et al., 2011; Ibrahim et al., 2018). Entrepreneurs will assess whether the adoption of innovation has the potential to transform changes in their ventures and to improve their businesses performance. This evaluation is called performance expectancy (Mensah et al., 2021).

Turning to subjective wellbeing, negative affect is negatively significantly related to exploratory innovation, but the variable was not included in the full model of exploitative innovation. Positive affect is not statistically significant in either of the two full models.

Affect (negative affect and positive affect) is central for exploratory innovation because positive affect can enhance creativity and focus and can increase optimism and collaboration to produce exploratory creative ideas (Foo et al., 2009; Davis et al., 2017; Williamson et al., 2019; Baron and Tang, 2011, cited in Baron, Tang and Hmieleski, 2011). Positive affect helps in generating new ideas and enhancing cognitive flexibility (Baron et al., 2011). Negative affect's finding is supporting that of section 7.2. Negative affect drives negative thoughts. These thoughts distract from the entrepreneur's motivation and focus (Stroe et al., 2020). Also, the relationship between negative affect and exploratory innovation is supported by Madrid and Patterson (2018).

Whilst for the entrepreneurial behavioral microfoundations contextual dimension, we see that self-efficacy is positively significantly related to both exploratory and

exploitative innovation. In both full models, proactivity and NFC are statistically significant. The former appearing with positive signed coefficients and the latter has negative coefficients. This supports the well-established literature on entrepreneurial learning and behavioural judgements and actions in all stages of the entrepreneurial process (Pollack et al., 2020; Shepherd et al., 2019; Zahra and Wright, 2011).

Social network relations and *wasta* seem to relate to exploitative innovation. This finding can be explained as *wasta* not being important to access new knowledge, but being important for sharing knowledge (Cai et al., 2021; Torres and Liang, 2016). Exploitation is about focusing on “executing, conducting, and realizing with speed” (Koo et al., 2015, p.137). Ahsan et al. (2022) argue that exploitation activities enhance the current knowledge for businesses. *Wasta* is argued to be important in the accessibility to insights from *wasta* providers (AlHussainan et al., 2022). The Arab world is considered to be a difficult region for entrepreneurs because of *wasta* that limits the access of resources to only those entrepreneurs who have access to *wasta* (Baranik et al., 2018).

The statistically significant control variables for the exploratory innovation model are gender and governorate, whereas for the exploitative innovation model they are habitual, firm size and industry. These findings are explained from the perspectives of exploratory and exploitative innovation. Exploratory innovation involves search, discovery and experimentation (March, 1991) and the development of new products or services (Kollmann and Stöckmann, 2014; Kuckertz et al., 2017). Consequently, Hong et al. (2018) posit that exploratory innovation is considered riskier than exploitative innovation. Arguably, small businesses have a bigger appetite for risk than larger businesses, thus small businesses are more explorative than exploitative innovators (Peltier et al., 2012; Luu and Nguyen, 2021). Because of small and medium businesses’ vulnerability to environmental risks, firm age plays an important role in influencing entrepreneurial behaviors and

exploratory innovation for SMEs (Khedhaouria et al., 2015; Newman et al., 2019; Newman et al., 2019). Firm age contributes to entrepreneurs' experience in judging their behaviors to develop new products or services (Damanpour and Daniel Wischnevsky, 2006; Khedhaouria et al., 2015; Newman et al., 2019).

Gender findings explain that female entrepreneurs are more likely to positively influence exploratory innovation than male entrepreneurs because they are expected to socialize more, to express positive emotions and to have higher wellbeing than male entrepreneurs (Sweida and Sherman, 2020; Pathak, 2021). This relationship is influenced by the patriarchal societies in the Middle East (Barragan et al., 2018; Mehtap et al., 2017; Tlaiss, 2014). Technological innovation is considered an influential factor in supporting and developing female entrepreneurial activities in the Middle East (Ameen and Willis, 2016; Mathew, 2010; Jose, 2018). Female entrepreneurs use information technology innovation to close the entrepreneurial gap between them and male entrepreneurs (Mathew, 2010).

Governorate findings suggests that businesses located in a governorate with smaller populations are more likely to explore innovations. Brown and Lindsay (2012) argue that community support contributes to the location of entrepreneurs' businesses. Another justification is that Kuwait's government's main entities are in Al-Asima governorate. This governorate has an under average population according to PACI.

Exploitative innovation involves refinement or improvement of processes or existing products and services (March, 1991; Kollmann and Stöckmann, 2014; Kuckertz et al., 2017). The habitual findings explain that entrepreneurs with greater prior experience (habitual) have a lower level of exploitative innovation than those with less or no prior experience.

Firm size is found to be negatively related to exploitative innovation. Small businesses are found to exhibit lower levels of exploitative innovation than medium businesses. These findings contradict that of Kickul and Gundry (2002) who claim that strategic orientation of small businesses is influencing the development and implementation of innovations within them. Arguably, small businesses are slower in adopting innovation (Mohr et al., 2009, cited in Peltier et al., 2012). Furthermore, Luu and Nguyen (2021) posit that firm size has no relationship with exploitative innovation. Industry is negatively related to exploitative innovation. Thus, businesses in the service industry have lower levels of exploitative innovation. Peltier et al. (2012) found that small retail businesses are slow in adopting innovation. However, a study conducted by Luu and Nguyen (2021) reports that the service industry has no relationship with exploitative innovation.

7.5 Conclusion

In conclusion, this chapter discusses the findings of the research as follows: the first section presents the introduction to the chapter. The second section discusses the hypotheses related to exploratory innovation that tests the four contexts. The third section discusses the hypotheses related to exploitative innovation that tests the four contexts. The fourth section discusses the full contextual models and the distinctions between exploratory and exploitative innovation. Findings that contribute to several areas of scholarship are discussed deeply and exactly.

Chapter.8 Conclusion

8.1 Interpretation of Core Theoretical Contributions

Overall, I contribute a timely study pertaining to ‘*what*’ contextual entrepreneurial dimensions exhibit combined effects on different types of innovation and thus, build on recent calls by scholars to go beyond a narrow and one-dimensional view of entrepreneurship (Audretsch et al, 2021; Henry and Lewis, 2023; Welter et al, 2019; Wigren-Kristofersen et al, 2019).

Moreover, very few studies focus on the specific relationship between contextual dimensions and entrepreneurial innovation in the Arabic, Gulf region. As Autio et al (2014) stress, contextual dimensions could relate differently to entrepreneurial innovation with varying magnitudes of novelty in different country, regional contexts, though, very little empirical research addresses this relationship (Linan et al., 2016; Morales et al, 2019; Pollack et al., 2020; Welter et al., 2019). Additionally, the research draws on recent subjective wellbeing and health research in the entrepreneurship literature and integrates this alongside contextual dimensions such as technology, entrepreneurial behavioral microfoundations, and social relations.

First, this study addresses the lack of research pertaining to entrepreneurship in Kuwait and the Middle East (Abu Bakar et al., 2017; Bruton et al., 2008). In addition, it contributes to entrepreneurship innovation research by following the recommendations of Autio et al. (2014) to contextualize entrepreneurship innovation research, and Su et al. (2015), Shirokova et al. (2022), Huang et al. (2020) and Welter et al. (2019) to investigate contextual entrepreneurship research in emerging economies.

This study explained the relationships of exploratory and exploitative innovation with technology adoption, subjective wellbeing, entrepreneurial behaviors and social network relationships. Scholars have called for researchers to address these contexts in depth, theoretically, and in non-Western or developing economies (Audretsch et al., 2022; Renko et al., 2021; Shepherd et al., 2019; Autio et al., 2014; Shirokova et al., 2022; Zahra and Wright, 2011; Stephan, 2018; Welter, 2011; Wiklund et al., 2018; Williamson et al., 2022; Moghavvemi et al., 2017; Ngoasong, 2018; Zahra et al., 2014; AlHussainan et al., 2022; Huang et al., 2020; Stuart and Sorenson, 2005). This study responds to these research calls.

Second, it reveals that exploratory innovation and exploitative innovation relate to contextual dimensions in varying ways. As regards exploratory innovation, intention to use, self-efficacy and proactivity are positively related to exploratory innovation; and negative affect and cognition are negatively related to exploratory innovation. Conversely, in the exploitative innovation context, performance expectancy, self-efficacy and proactivity and *wasta* are positively related to exploitative innovation. Although, cognition is negatively related to exploitative innovation. These results contribute to innovation theory, as different innovation types can be influenced by entrepreneurs' technology adoption, subjective wellbeing, entrepreneurial behavioral microfoundations and social relations, specifically in developing countries like Kuwait.

8.2 Limitations and Future Research

This study has certain limitations which provide opportunities for further empirical investigation. The two primary limitations of quantitative studies are data collection and research design. This study used a self-reported data collection method (survey) from the same data source; hence, the relationships between variables might be influenced by common

method bias (CMB) (Hair et al., 2019). CMB and multicollinearity were not issues in this study and did not influence the relationships between the variables (Siemsen et al., 2010). This study employed a cross-sectional design. As a result, conclusions were drawn from the cause-effect relationships. Due to the nature of the cross-sectional design, the data were collected at a single point in time (Visser et al., 2000) constraining the inference of causality at different times and between evolving relationships. Hence, a longitudinal design is recommended for future studies to address these constraints (Martinez et al., 2011). Future studies should investigate the relationship between the persistence of dependent and independent variables over time. For example, this study used the positive and negative affect scale (PANAS) developed by Watson et al. (1988) who recommend using the scale over time (weekly, monthly). The study was unable to test the entrepreneurs' mood fluctuations.

The Covid-19 pandemic has affected both response rates and construct choices (De Koning et al., 2021). SMEs struggle to face the challenges of the 2020 pandemic (Zainal et al., 2022). Ghura et al. (2021) add that "SMEs have been struggling to pay salaries and rent expenses without reducing payroll or making layoffs" (p.25). The authors found that 50.9% of their sample knows at least one entrepreneur who closed or stopped owning a business due to the 2020 pandemic.

Kuwait's government response to the COVID pandemic was not anticipated positively by the private sector, and Ghura et al. (2021, p.32) add that "the private sector has reservations about the government's response to the economic consequences of the COVID-19 pandemic" and "national experts' ratings of the governmental response to the economic impacts of the pandemic, scored as insufficient" (p.33). Thus, the perception of entrepreneurship in this period is negative.

In line with Ghura et al. (2021), the COVID pandemic has affected the research findings. Some relationships conflict with that found in the literature. For example, health and happiness have no relationship with both types of innovation (Wiklund et al.,2019; Meijer et al., 2009). The need for cognition has a negative relationship with both types of innovation. Future research should use panel data such as GEM data in Kuwait and other countries to study the absence of a relationship between health and happiness, and the negative relationship between NFC and innovation. The response rate may have played a critical part in these results due to the timing of the research during the pandemic. Scholars have found that COVID affected their research findings (Zainal et al.,2022; Alhaimer, 2021).

Temporality is a meaningful context, according to Zahra et al. (2014) and Welter (2011), but our study focused on the importance of dimensionality. This focus served the purpose of this study at one point in time while it also represents a limitation. Future studies should test the temporal effects on innovation at different points in time. For example, health and happiness are measured annually by the UK's Office of National Statistics (ONS).

The length of the survey was a concern because the research included over 12 variables. Therefore, the researcher minimized the number of items in the constructs using the most relevant constructs from the literature. For example, the use of the shorter version of the NFC resulted in contradictory findings that need to be investigated in the future. NFC has a negative relationship with both types of innovation. This finding contradicts the literature on NFC spaces (Venkatraman and Price, 1990; Mensmann and Frese, 2019; Dollinger, 2003). Future research should investigate NFC from a full dimensional perspective to examine its role in innovation as recommended by Lord and Putrevu (2006). Another example is the use of the shorter version of the Technology Adoption Decision and Use (TADU) constructs in the

technology context, namely, performance expectancy and behavior intention, which were minimized into the most recommended constructs in the literature for technology adoption (Moghavvemi et al., 2016; Venkatesh et al., 2016). This shorter version of TADU resulted in contradictory findings between performance expectancy and behavior intention for exploratory innovation and exploitative innovation that need to be investigated in the future. Future research may add full constructs to test and validate the relationship between exploratory and exploitative innovation and the independent variables in the study.

Generalizability was affected by sample size, country context and the sample list database called the “National Registry”. First, the sample size was moderate-to-small, making it difficult to generalize the findings in Kuwaiti or other regional contexts. However, smaller sample sizes are common in emerging economies and entrepreneurship research (Harzing, 2006; Ahlin et al., 2014; Cardon and Kirk, 2015; AlHussainan et al., 2022; Kickul and Gundry, 2002). Additionally, women were less represented in the sample than men (26% and 74% respectively); thus, more focus is needed to increase their participation, which limits the generalizability of the sample. However, this is common in emerging economies and Arab regions (Tipu and Ryan, 2016; Abu Bakar et al., 2017; Moghavvemi et al., 2012). Covid-19 has significantly lowered response rates, which potentially affects the findings (KUNA, 2020; Evens, 2020; Sitar-Taut and Mican, 2021). Resurveying the same sample post-Covid may increase the response rate and result in different conclusions, because the research was conducted during a natural disaster and lockdown negatively influenced health and socialisation (Torrès et al., 2022; Hadjielias et al., 2022). De Koning et al. (2021) suggest that “the pandemic has affected how research in and of itself is conducted, and the feasibility of conducting non-COVID-19 related studies” (p.2). Additionally, Korsgaard et al. (2020) argue

that small and medium enterprises were affected the most, and governments struggled to implement effective policies to help them because “the COVID-19 crisis differs markedly from other recent crises, such as the financial crisis of 2008” (p.698).

Second, the country context is another restriction on generalization. Kuwait is considered a high-income economy; hence, the findings cannot be applied to all Arab countries (World Bank, 2020; OPEC, 2020). The World Bank (2020) considers Kuwait, the UK, Saudi Arabia and the UAE as high-income countries, while Egypt, Lebanon and Tunisia are considered lower- and upper-middle-income countries. According to the World Bank, the GNI (Gross National Income) per capita for Kuwait is \$36K, for the UK is \$42K, for Saudi Arabia is \$21K, and for the UAE is \$43K while for Egypt, Lebanon and Tunisia the figure is \$3, \$5K, and \$3K, respectively. Additionally, these research findings cannot be generalized because SMEs in Kuwait are projected to contribute to less than 3% of the total GDP (Gross Domestic Product) and 23% of the total workforce, which is problematic compared with high-income and emerging economies (World Bank, 2016). For example, in the U.K., SMEs contribute 51% of turnover, while in the U.S., SMEs contribute 43% to GDP (U.K. Government, 2022; U.S. Small Business Administration, 2019) and in the UAE, SMEs contribute 60% of GDP (Government of the United Arab Emirates, n.d.).

Lack of empirical contextual research in non-western countries limits this study from assessing the validity of its findings (Su et al., 2015). Future research is recommended to replicate this research in other countries such as Bahrain, Oman, the UAE and Saudi Arabia. According to the World Bank (2021a) Saudi Arabia is the largest economy in the GCC with a GDP of \$833 billion, and the second largest GDP in the GCC is the UAE, with \$415 billion. However, Bahrain, Kuwait and Oman have GDPs of \$38b, \$105b, and \$88b respectively.

Third, the sample has two limitations that affect generalizability. Initially, the sample was drawn from a convenience sample rather than a random entrepreneur sample, because of the difficulty in reaching and finding entrepreneurs in Kuwait. Thus, these findings cannot be applied to all entrepreneurs in Kuwait. Subsequently, the National Registry allows only SMEs that meet specific definitions and criteria according to Ministry Law No. 51 for 2018 to be registered in the database (National Fund, 2021). Thus, the sample was restricted to SMEs that could register with the National Registry. Additionally, the researcher was not given direct access to the National Registry's SME owners list. The National Fund managed accessibility to the list by sending an electronic survey link on behalf of the researcher. These restrictions prevented the study from assessing a larger sample of SMEs in Kuwait. Future research could replicate this study using another sample list, such as the Kuwait Chamber of Commerce. The researcher contacted the Kuwait Chamber of Commerce, but the Chamber could not help in time because of Covid-19.

Kuwait has six governorate localities. Kuwait has not publicly published economic data since 2020 (World Bank, 2022; Central Statistical Bureau, 2022) and economic data for each governorate. For example, the Central Statistical Bureau has not published Kuwait's economic indicators on their website; the last GDP estimate was published for the fourth quarter of 2020, and no annual report has been published (Central Statistical Bureau, 2022). The Central Bank of Kuwait published their last economic report in 2020 (Central Bank of Kuwait, 2023). Additionally, the National Fund (NF) maintains that the National Registry has no industrial sector classifications in its SMEs database. This limitation made it unreliable to contextualize governorates in spatial, market and industry contexts due to the scarcity of data. However, spatial and industry were tested as control variables and were found to influence exploratory

and exploitative innovation. Future research is recommended to test these two variables as contexts and validate the findings with the current research findings.

8.3 Implications for Kuwait's National Registry and Fund

One of the primary objectives of the NF is to support and encourage innovation (Wamda, 2015). Audretsch et al. (2022, p.5) assert that “policy-makers who wish to encourage more entrepreneurs transiting from latent to emergent form by introducing new processes and products to the market may deviate from supporting total entrepreneurship activity, rather than focus on creation and the growth of the most innovative types of entrepreneurs.” Accordingly, this study supports the claim of Audretsch et al. (2022) and it finds that two entrepreneurial behavioral variables appear to influence exploratory and exploitative innovation: proactiveness and self-efficacy. Hence, self-confidence, leading behavior and initiative are the main drivers of entrepreneurial innovation (Morris et al., 2011).

NF policies should enhance entrepreneurial traits. Thus, NF should promote entrepreneurs' training and facilitate access to market insights, opportunities, counselling and coaching, for example, by replicating the American model of Small Business Development Centers (Roth and Morris, 2020; Small Business Administration, n.d.). The World Bank (2016) recommended training entrepreneurs on managing business activities such as accounting and hiring and developing online spaces for entrepreneurs' interactions. Additionally, Roth and Morris (2020) explain that the Small Business Development Center in the US “provides no-cost, confidential consulting and low-cost training to both start-up and existing for-profit business ventures” (p.321). Also, the NF should encourage and promote the development of business incubators because it could promote positive mental perspectives and cognitive styles of thinking, and “nurture[s] the development of entrepreneurial companies, helping them

survive and grow during the startup period, when they are most vulnerable” (Al-Mubarak and Busler, 2010, p.2).

Al-Mubarak and Busler (2010) state that “Kuwait and the other GCC member states might consider adopting an expanded version of the incubator concept tailored to their local environments and economic development needs” (p.19). Furthermore, policymakers and the NF should replicate the BADIR technology incubation program that was developed by King Abdulaziz City for Science and Technology to promote, help and support the development and establishment of technology incubator industries in Saudi Arabia (Khorsheed et al., 2014b)..

Several control variables also revealed interesting relationships with regard to gender, governorate business location, firm age, prior experience (habitual), firm size (small-medium) and sector (services). The NF is recommended to focus on policies that encourage female entrepreneurs to start businesses to influence exploratory innovations. Female entrepreneurs in the Middle East face societal challenges that are common in the culture of Islamic and patriarchal societies (Barragan et al., 2018; Mehtap et al., 2017; Tlaiss, 2014; Jabeen and Faisal, 2018). Ameen and Willis (2016) assert that female entrepreneurs in the Middle East face micro and macro level challenges in starting businesses such as gender gaps, cultural barriers and norms, social and family barriers and a lack of decisive and dedicated government support and policies. In Kuwait, female entrepreneurs were found to influence exploratory innovations more than male entrepreneurs. However, future studies should investigate why male entrepreneurs negatively influence and female entrepreneurs positively influence exploratory innovation on a large scale.

Business location influences exploratory innovation. Businesses located in areas with smaller populations influence exploratory innovation more than those with larger populations.

Due to the scarcity of economic data in Kuwait, more research is needed to confirm this conclusion, for example, industry sector data per governorate, household income three categories (high, middle and low), and GDP per governorate population (Koellinger, 2008; Pérez-Luño et al., 2011; Schillo, et al., 2016). However, the NF should encourage exploratory entrepreneurial innovations in larger governorates, while continuing to support businesses in smaller ones. Policymakers should help the NF open centers in every governorate to develop small business development centers and open spaces for entrepreneurs' networking (Roth and Morris, 2020). Additionally, policymakers should cooperate with researchers to find the barriers that prevent exploratory innovations in larger governorates.

Interestingly firm age positively influences exploratory innovation, although it was not statistically significant. Scholars argue that smaller firms tend to adopt technologies less than larger firms because of the cost associated with technology adoption (Jin, 2007; Peltier et al., 2012; Moghavvemi et al., 2016). Additionally, smaller firms take more risks than larger firms (Peltier et al., 2012). As a result, larger firms are more efficient in managing resources than smaller firms. Thus, the NF should focus on promoting and supporting older firms to support exploratory innovation. This research found that the older the firm, the more likely it is to create or develop new products and services. Positive and negative affect influence exploratory innovation which is in line with past empirical research (Pathak, 2021; Foo et al., 2009; Baron and Tang, 2011). The NF should promote policies to enhance entrepreneurs' positive affect and decrease their negative affect.

Prior entrepreneurial experience (habitual) was found to negatively influence exploitative innovation. In other words, novice entrepreneurs performed better than habitual entrepreneurs in achieving exploitative innovation. This finding contradicts past research that

found either a positive relationship between prior entrepreneurial experience and exploitative innovation or found no relationship at all (Khedhaouria et al., 2015; Campos, 2017). However, NF policies should be constructed for less-experienced entrepreneurs to help them exploit innovation. This study found a negative relationship between service industry businesses and exploitative innovation. Consequently, NF should construct policies to encourage more businesses in the non-service industries. Kuwait needs to focus on promoting primary industries, which are the least represented in the sample, to diversify the country's exports because 92% of Kuwait's export revenue comes from oil (OPEC, 2020). However, the NF, since early 2021, has already suspended financial support and accepted new applicants for businesses in the retail and services industries (National Fund, 2021). Medium-sized businesses were found to have a greater influence on exploitative innovation than smaller businesses; thus, the NF should focus on promoting entrepreneurship in smaller businesses. Smaller firms tend to take more risks than larger firms, making them explore innovations to create new products or services (Peltier et al., 2012). Thus, smaller firms need support from policymakers and the NF to help them confront external risks such as the Covid-19 pandemic.

Wasta appears related to exploitative innovation, though, further dedicated research is needed. *Wasta* argues for help in the accessibility and transmission of new knowledge that helps exploit innovation (AlHussainan et al., 2022; Hutchings and Weir, 2006). *Wasta* is argued to act as a double-edged sword with both negative and positive effects (AlHussainan et al., 2022; Cunningham and Sarayrah, 1994). As a result, the NF should enhance the network relationship of entrepreneurs by developing official entrepreneur networks and mentorship to help entrepreneurs access and exploit new knowledge. The NF should sponsor SMEs trade exhibitions and forums to enhance entrepreneurs' network relationships. The last forum the

NF sponsored was in 2015 (the National Fund for SME Development, 2021). Additionally, the Kuwaiti Government should replicate how it developed steps and regulations to criminalize any activities related to *guanxi*, the Chinese version of *wasta* (Guo et al., 2018). The steps that can be taken to promote *wasta* are increasing transparency by disclosing trade and financial information and promoting anti-corruption campaigns. Policymakers are recommended to develop regulations and laws to criminalize *wasta* and encourage the development of entrepreneurial networks.

Finally, the technology adoption constructs yielded mixed results. Performance expectancy influences exploitative innovation whereas behavioral intention (intention to use) influences exploratory innovation. Performance expectancy refers to the belief that using new technology will help entrepreneurs improve their job performance (Mensah et al., 2021; Venkatesh et al., 2003). In contrast, behavioral intention refers to an entrepreneur's willingness to use or reject a new technology (Moghavvemi et al., 2016). The NF should direct its policies to increase entrepreneurs' technology performance expectancy and behavioral intention by arranging workshops and seminars, and providing guidance and support to promote and explain technologies that may help entrepreneurs explore or exploit innovations. Thus, the technology adoption type determines how entrepreneurs explore or exploit innovations for their businesses.

8.4 Implications for Policy

Zahra and Wright (2011) explain that misunderstandings between public policymakers and entrepreneurship researchers lead to narrow views of their research relevance to practitioners and policymakers. They add that an opportunity exists to link research programs with national policies. Entrepreneurship research driven by public policy can help develop

related theoretical and empirical concerns (Zahra and Wright, 2011). The research findings in this thesis show that self-efficacy and proactiveness are the most important factors in both exploratory and exploitative innovation. Policymakers should focus their policies on supporting these entrepreneurial traits, in particular, should promote access to technology, economic and demographic data and support knowledge sharing between experienced and nascent entrepreneurs to help in enhancing entrepreneurs' self-efficacy and proactiveness.

Zahra and Wright (2011) assert that “research on academic entrepreneurship, for example, offers insights into the value of aligning academic agendas with public policy debates” (p.81). Audretsch et al. (2022) suggest that policymakers should consider the influence of diverse contexts (technological, social, etc.) on entrepreneurial activities and other domains such as innovation and education. Middle Eastern and Gulf policymakers should align their policies with academic and scientific research, it is advised to evaluate entrepreneurs not only based on financial outcomes but also on innovation outcomes. However, policymakers should try to help and enhance business support activities by offering entrepreneurial education programs to business owners/managers. Audretsch et al. (2022) argue that “policymakers who wish to encourage more entrepreneurs transiting from latent to emergent form by introducing new processes and products to the market may deviate from supporting total entrepreneurship activity, rather than focus on creation and the growth of the most innovative types of entrepreneurs” (p.5).

Additionally, policymakers should decide the type of innovation that is important for implementing the country's economic growth plan. Exploratory innovation is about creating new products or services while exploitative innovation is about enhancing existing products or services (Kollmann and Stöckmann, 2010). Therefore, policymakers should reform

entrepreneurial education systems and promote science parks, innovation centers and business incubators.

8.5 Implications for Entrepreneurs

These findings can assist entrepreneurs in understanding their traits that lead them to explore or exploit innovations. Entrepreneurs who seek to explore innovation and create new products or services tend to have high proactiveness, a low need for cognition, and high behavior intention for technology adoption. Conversely, passion and entrepreneurial resilience do not affect entrepreneurial innovation (exploratory or exploitative). However, subjective wellbeing plays an important role in entrepreneurs' innovation explorations. Whilst positive affect was not statistically significant in either of the two full models for exploratory and exploitative innovation; and negative affect was significant in the full model of exploratory innovation, the results tentatively suggest that entrepreneurs should increase their positive affect and lower their negative affects by engaging in social events, relieving stress and improving their health (Watson and Pennebaker, 1989; Watson, 1988).

Additionally, entrepreneurs must maintain high levels of effectual learning, self-efficacy and proactiveness. Thus, entrepreneurs must work to enhance their belief in their abilities to achieve their goals and enhance their competitive advantage in their markets. Bandura (1986) argued that four factors influence self-efficacy: enactive mastery, role modelling and vicarious experience, social persuasion and judgments of one's own physiological state. Entrepreneurs must adopt aggressive behavior directed at rivals, and pursue favorable business opportunities to enhance their proactive behavior (Kreiser et al., 2002).

Entrepreneurs who seek exploitative innovation have in general the same traits as exploratory innovation entrepreneurs – especially with regard to proactivity and NFC; but there were differences such as performance expectancy replaced behavior intention and *wasta* replaced subjective wellbeing constructs. These two constructs are influenced by accessibility to information. Thus, entrepreneurs need access to knowledge to exploit current or available innovations.

Also, *wasta* can help certain individuals to access insights and ideas while blocking others from accessing these insights and ideas (AlHussainan et al., 2022). As a result, *wasta* can be considered a privilege of exclusive access to networks and resources, and hence hindering innovation in total (Hutchings and Weir 2006; Cunningham and Sarayrah, 1994; Baranik et al., 2018). However, entrepreneurs are advised to strengthen their social network relationships, and share their knowledge with other entrepreneurs.

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Appendix

Appendix I

Systematic literature review Articles

Author/s	Title	Year	Journal
Martens, C. D. P., Lacerda, F. M., Belfort, A. C. and de Freitas, H. M. R.	Research on entrepreneurial orientation: current status and future agenda	2016	International Journal of Entrepreneurial Behaviour and Research
Tlaiss, H. A.	Entrepreneurial motivations of women: Evidence from the United Arab Emirates	2015	International Small Business Journal
Touzani, M., Jlassi, F., Maalaoui, A. and Hassine, R. B. H.	Contextual and cultural determinants of entrepreneurship in pre- and post-revolutionary Tunisia Analysing the discourse of young potential and actual entrepreneurs	2015	Journal of Small Business and Enterprise Development
Dutot, V. and Van Horne, C.	Digital Entrepreneurship Intention in a Developed vs. Emerging Country: An Exploratory Study in France and the UAE	2015	Transnational Corporations Review
Erogul, M. S.	Entrepreneurial activity and attitude in the United Arab Emirates	2014	Innovation
Gupta, N. and Mirchandani, A.	Investigating entrepreneurial success factors of women-owned SMEs in UAE	2018	Management Decision
Iqbal, F., Hung, P. C. K., Wahid, F. and Mohammed, Smqa	A glance at research-driven university's technology transfer office in the UAE	2018	Journal of Technology Management
Jabeen, F., Faisal, M. N. and Katsiolouides, M. I.	Entrepreneurial mindset and the role of universities as strategic drivers of entrepreneurship Evidence from the United Arab Emirates	2017	Journal of Small Business and Enterprise Development
Jabeen, F., Farouk, S. and Katsiolouides, M. I.	Empowering Emirati Women through Entrepreneurship: Success factors and Financial Resource Acquisition Perspective	2015	The 26 th IBIMA conference on Innovation Management and Sustainable Economic Competitive Advantage: From Regional

			Development to Global Growth will be held in Madrid, Spain 11-12 November 2015
Naguib, R. and Jamali, D.	Female entrepreneurship in the UAE: a multi-level integrative lens	2015	Gender in Management
Thomson, G. S. and Minhas, W.	Enabling Entrepreneurship: Entrepreneurial Intentions among Emirati Students	2017	Journal of enterprising culture
Tipu, S. A. A. and Ryan, J. C.	Predicting entrepreneurial intentions from work values Implications for stimulating entrepreneurship in UAE national youth	2016	Management Decision
Kebaili, B., Al-Subyae, S. S. and Al-Qahtani, F.	Barriers of entrepreneurial intention among Qatari male students	2017	Journal of Small Business and Enterprise Development
Arshi, T. and Burns, P.	Entrepreneurial Architecture: A Framework to Promote Innovation in Large Firms	2018	The Journal of Entrepreneurship
Belwal, R., Balushi, H. and Belwal, S.	Students' perception of entrepreneurship and enterprise education in Oman	2015	Education + Training
Ghouse, S., McElwee, G., Meaton, J. and Durrah, O.	Barriers to rural women entrepreneurs in Oman	2017	International Journal of Entrepreneurial Behaviour and Research
Subrahmanian, M., Subramanian, K., Al-Haziazi, M. and Herimon, P. C.	Entrepreneurial Intent of Prospective Graduates in Sultanate of Oman	2017	European Conference on Innovation and Entrepreneurship (pp. 653-661). Academic Conferences International Limited
A. R. Abu Bakar, S. Z. Ahmad, N. S. Wright and H. Skoko	The propensity to business startup Evidence from Global Entrepreneurship Monitor (GEM) data in Saudi Arabia	2017	Journal of Entrepreneurship in Emerging Economies
S. Alkhaled and K. Berglund	And now I'm free': Women's empowerment and emancipation through entrepreneurship in Saudi Arabia and Sweden	2018	Entrepreneurship and Regional Development
W. N. Almobaareek and T. S. Manolova	Entrepreneurial motivations among female university youth in Saudi Arabia	2013	Journal of Business Economics and Management

W. J. Aloulou	Entrepreneurial Intention among Freshmen Students: Application of the Theory of Planned Behaviour in Saudi Context	2015	Journal of Enterprising Culture
W. J. Aloulou	Predicting entrepreneurial intentions of final year Saudi university business students by applying the theory of planned behavior	2016	Journal of Small Business and Enterprise Development
W. J. Aloulou	Investigating entrepreneurial intentions and behaviours of Saudi distance business learners: main antecedents and mediators	2017	Journal of International Business and Entrepreneurship Development
A. Alshumaimri, T. Aldridge and D. B. Audretsch	Scientist entrepreneurship in Saudi Arabia	2012	Journal of Technology Transfer
M. N. Faisal, F. Jabeen and M. I. Katsioloudes	Strategic interventions to improve women entrepreneurship in GCC countries A relationship modeling approach	2017	Journal of Entrepreneurship in Emerging Economies
F. Jabeen and M. N. Faisal	Imperatives for improving entrepreneurial behavior among females in the UAE: An empirical study and structural model	2018	Gender in Management
S. Jose	Strategic use of digital promotion strategies among female emigrant entrepreneurs in UAE	2018	International Journal of Emerging Markets
Aloulou, W. J.	Predicting entrepreneurial intentions of freshmen students from EAO modeling and personal background A Saudi perspective	2016	Journal of Entrepreneurship in Emerging Economies
Alshumaimri, A., Aldridge, T. and Audretsch, D. B.	The university technology transfer revolution in Saudi Arabia	2010	The Journal of Technology Transfer
Ameen, N. A. and Willis, R.	The use of mobile phones to support women's entrepreneurship in the Arab countries	2016	International Journal of Gender and Entrepreneurship
Baranik, L. E., Gorman, B. and Wales, W. J.	What Makes Muslim Women Entrepreneurs Successful? A Field Study Examining Religiosity and Social Capital in Tunisia	2018	Sex Roles
Barragan, S., Erogul, M. S. and Essers, C.	Strategic (dis)obedience': Female entrepreneurs reflecting on and acting upon patriarchal practices	2018	Gender, Work and Organization
Bastian, B. and Zali, M. R.	The impact of institutional quality on social networks and performance of entrepreneurs	2016	Small Enterprise Research

Bastian, B. L., Sidani, Y. M. and El Amine, Y.	Women entrepreneurship in the Middle East and North Africa: A review of knowledge areas and research gaps	2018	Gender in Management: An International Journal
Bastian, B. L. and Zali, M. R.	Entrepreneurial motives and their antecedents of men and women in North Africa and the Middle East	2016	Gender in Management: An International Journal
Bertelsen, R. G., Ashourizadeh, S., Jensen, K. W., Schott, T. and Cheng, Y.	Networks around entrepreneurs: gendering in China and countries around the Persian Gulf	2017	Gender in Management: An International Journal
Bodolica, V. and Spraggon, M.	Life on heels and making deals A narrative approach to female entrepreneurial experiences in the UAE	2015	Management Decision
Kalafatoglu, T. and Mendoza, X.	The impact of gender and culture on networking and venture creation An exploratory study in Turkey and MENA region	2017	Cross Cultural and Strategic Management
Khorsheed, M. S. and Al-Fawzan, M. A.	Fostering university-industry collaboration in Saudi Arabia through technology innovation centers	2014	Innovation
Khorsheed, M. S., Al-Fawzan, M. A. and Al-Hargan, A.	Promoting techno-entrepreneurship through incubation: An overview at BADIR program for technology incubators	2014	Innovation
Mathew, V.	Women entrepreneurship in Middle East: Understanding barriers and use of ICT for entrepreneurship development	2010	International Entrepreneurship and Management Journal
Mehtap, S., Ozmenekse, L. and Caputo, A.	I'm a stay at home businesswoman: an insight into informal entrepreneurship in Jordan	2019	Journal of Entrepreneurship in Emerging Economies
Mehtap, S., Pellegrini, M. M., Caputo, A. and Welsh, D. H. B.	Entrepreneurial intentions of young women in the Arab world Socio-cultural and educational barriers	2017	International Journal of Entrepreneurial Behavior and Research
Nasra, R. and Dacin, M. T.	Institutional Arrangements and International Entrepreneurship: The State as Institutional Entrepreneur	2010	Entrepreneurship Theory and Practice
Panda, S.	Constraints faced by women entrepreneurs in developing countries: review and ranking	2018	Gender in Management: An International Journal
Sadi, M. A. and Al-Ghazali, B. M.	Doing business with impudence: A focus on women entrepreneurship in Saudi Arabia	2010	African Journal of Business Management

Tlaiss, H. A.	How Islamic Business Ethics Impact Women Entrepreneurs: Insights from Four Arab Middle Eastern Countries	2015	International Small Business Journal
Van de Vliert, E., Janssen, O. and Van der Vegt, G. S.	Hard or Easy? Difficulty of Entrepreneurial Startups in 107 Climato-Economic Environments	2016	Applied Psychology
Welsh, D. H. B., Memili, E., Kaciak, E. and Al Sadoon, A.	Saudi women entrepreneurs: A growing economic segment	2014	Journal of Business Research
Zacca, R., Dayan, M. and Ahrens, T.	Impact of network capability on small business performance	2015	Management Decision
Zgheib, P.	Multi-level framework of push-pull entrepreneurship: comparing American and Lebanese women	2018	International Journal of Entrepreneurial Behavior and Research
M. K. Khan, T. Al-Saud, H. Alkhathlan and H. Al-Derham	New reforms of research, innovation and entrepreneurship in the GCC countries	2014	Innovation
Bastian, B. L. and Tucci, C. L.	Entrepreneurial advice sources and their antecedents Venture stage, innovativeness and internationalization	2017	Journal of Enterprising Communities
Al-Mataani, R., Wainwright, T. and Demirel, P.	Hidden Entrepreneurs: Informal Practices within the Formal Economy	2017	European Management Review
Saviano, M., Nenci, L. and Caputo, F.	The financial gap for women in the MENA region: a systemic perspective	2017	Gender in Management: An International Journal

Appendix II Letter



الصندوق الوطني
لرعاية وصحة المنشآت الصغيرة والمتوسطة
THE NATIONAL FUND
FOR SMALL AND MEDIUM ENTERPRISE DEVELOPMENT

دعوه للمشاركة في استبيان

المدير / المبادر ،،

السلام عليكم ورحمة الله وبركاته ،،

أشرف بدعوتكم للمشاركة في مشروعني للبحثي للحصول على درجة الدكتوراة من خلال التفضل بإكمال الاستبانة التالية. ستستغرق هذه الاستبانة على ما يقارب ١٥ دقيقة من وقتك وسأكون ممتناً جداً لسيداتكم لإكمالها. مقدمه الاستبانة مشعل العميري حيث أقوم بتدريس إدارة تكنولوجيا المعلومات في الهيئة العامة للتعليم التطبيقي والتدريب في الكويت.

حاليا أعمل للحصول على درجة الدكتوراة في الفلسفة من جامعة رويال هولواي – جامعة لندن تحت إشراف البروفيسور بول روبسون والدكتور روبرت لي .

بحثي تحت رعاية الهيئة العامة للتعليم التطبيقي والتدريب والصندوق الوطني لتنمية المشاريع الصغيرة والمتوسطة. الهدف من البحث هو دراسة العلاقة بين العوامل الاجتماعية والمعرفية وتبني التكنولوجيا وعمليات الابتكار في سياق الأعمال الصغيرة والمتوسطة في الكويت.

سيساعد البحث صانعي السياسات على تعزيز السياسات التي تسهل بدء الأعمال التجارية ودعمها في الكويت والمنطقة العربية. جميع المعلومات الواردة في هذا الاستبيان سرية ومجهولة المصدر ولن تُستخدم إلا للبحث الأكاديمي.

مشاركتك في هذه الدراسة تطوعية ولك مطلق الحرية في سحب مشاركتك من هذه الدراسة في أي وقت. في حال ترغب في الحصول على نسخة من الملخص التنفيذي لنتائج الدراسة والتوصيات والتي ستساعدك في اتخاذ القرارات لضمان استمرارية عملك يرجى تعبئة التفاصيل الخاصة بك في نهاية الاستبيان. إذا كان لديك أي أسئلة بخصوص الاستبانة أو الدراسة بشكل عام يرجى التواصل معي على عنوان البريد الإلكتروني المذكور بالأسفل.

شكرا لك على وقتك ،،

Dear Owner Manager/Owner,

I would like to invite you to participate in my nationally funded Doctor of Philosophy PhD Degree research project by kindly completing the following questionnaire – the link can be found at the end of this email. This will take approximately 15 minutes of your time and I would be very grateful.





My name is Meshal Alameeri and I teach Information Technology Management at the Public Authority of Applied Education and Training in Kuwait. I am studying for my Doctor of Philosophy PhD degree at Royal Holloway, University of London under the supervision of Professor Paul Robson and Dr Robert Lee and my research is sponsored by the Government of Kuwait and National Fund for Small and Medium Enterprise Development.

The aim of the research is to investigate the relationship between social and cognitive factors, technology adoption and innovation processes in the context of small and medium businesses in Kuwait. The research will help policy makers promote interventions that facilitate business start-up and support in Kuwait and the Arab Region.

All information provided in this questionnaire will be kept confidential and anonymous, and will only be used for academic research. Your participation in this study is voluntary and you are free to withdraw your participation from this study at any time.

Meshal.Alameeri.2018@live.rhul.ac.uk

Appendix II A: Questionnaire English Version

 ROYAL HOLLOWAY UNIVERSITY OF LONDON	 الهيئة العامة للتعليم التطبيقي والتدريب The Public Authority for Applied Education & Training	 الوزارة العامة للتعليم	 ROYAL HOLLOWAY UNIVERSITY OF LONDON
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CONFIDENTIAL SELF-COMPLETION QUESTIONNAIRE - NATIONAL FUND RESEARCH

INSTRUCTIONS-COMPLETING THE QUESTIONNAIRE: The questionnaire covers a wide range of entrepreneurship and innovation subjects and should take about 15 minutes to complete. No specialist knowledge is required to take part. I/we hope that you will find it interesting, stimulating and enjoyable.

Please read all instructions carefully and answer all questions. Only you should complete the questionnaire and all answers and information will be confidential and anonymous. *In addition, please answer all questions from the perspective of your main current business.*

If you need any assistance, please do not hesitate to contact me at:
meshal.alameeri.2018@live.rhul.ac.uk

THANK YOU AGAIN FOR YOUR HELP

Section 1:

Section 1: General Information

Here are some questions about your general background and company
Please select the appropriate answer or fill in the space

1.1 Gender

Male (1)

Female (2)

1.2 Age: Please state your age.

1.3 Level of Education: What is your highest level of education?
Please select only one answer.

- High school (1)
- Diploma (2)
- Bachelor (3)
- Master (4)
- PhD (5)
- Other: (6) _____

1.4 How many businesses have you established and operated including the current one?
Please state. _____

1.5 How many businesses do you currently have a majority or minority ownership stake in?
Please state. _____

1.6 How many businesses have you closed/sold where you had a majority or minority ownership stake in? Please state. _____

1.7 When was your firm established?
Please state. _____

1.8 In which sector of industry is your *main* business? Please select the appropriate answer.

- Primary (1)
- Manufacturing (2)
- Construction (3)
- Services (4)
- Retail (5)

Wholesale (6)

1.9 What is the main product/service you provide?

Please briefly describe. _____

1.10 How many employees are there in your firm?

Please state. _____

1.11 What is your firm's governorate location? Please select the appropriate answer.

Al-Ahmadi (1)

Al-Asima (The Capital) (2)

AlFarwaniya (3)

Al-Jahra (4)

Hawalli (5)

Mubarak Al-Kabeer (6)

Section 2: Innovation

Here are some questions about your company's innovation capabilities.

2.1 Exploratory Innovation

With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

	Strongly Disagree (1)	Disagree (6)	Neutral (7)	Agree (8)	Strongly Agree (9)
(a) We always accept demands that go beyond existing goods and services (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) We regularly approach new opportunities in new markets (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(c) We regularly experiment with new products and services in existing markets (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) We perpetually develop creative ways to satisfy customer needs (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.2 Exploitative Innovation

With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) We continuously improve the efficiency of the creation of goods or services (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) We perpetually reduce the costs of the creation of goods or services without quality loss (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) We continuously increase the levels of automation in the creation of goods or services (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3: Technology Adoption

Here are some questions about the role and importance of Information Systems Innovation.

3.1 With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) I find the Information Systems innovation to be useful in my business (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Using the Information Systems innovations enable me to accomplish tasks more quickly (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Using Information Systems innovation increases my productivity (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Using Information Systems innovation, increases my chances of getting more benefit in my business (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Using Information Systems innovation gives me competitiveness power in my business (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.2 With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
--	-----------------------	--------------	-------------	-----------	--------------------

(a) I predict I would use Information Systems innovation, if it is available in the future (1)

(b) My personal philosophy is to do whatever it takes using Information Systems innovation in the future (4)

(c) I have very seriously thought of using Information Systems innovation in my business if it is available in the next 2 months (5)

(d) I plan to use current Information Systems innovation in my work in the next year (6)

(e) I intend to use similar Information Systems innovation technology in the future (7)

Section 4: Wellbeing and emotional state:

Here are some questions about your general wellbeing and mood.

4.1 4.1 Overall, how happy did you feel yesterday?

Very unhappy (1)

Unhappy (2)

Neutral (3)

Happy (4)

Very happy (5)

4.2 In general, would you say that your health is:

Poor (1)

Fair (2)

Good (3)

Very good (4)

Excellent (5)

4.3 Please indicate to what extent you currently feel the following emotions at work, that is, how often you feel each emotion on average:

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
(a) Interested (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Distressed (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Excited (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Upset (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Strong (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(f) Guilty (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) Scared (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) Hostile (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(i) Enthusiastic (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(j) Proud (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(k) Active (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(l) Afraid (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(m) Irritable (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(n) Alert (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(o) Ashamed (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(p) Inspired (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(q) Nervous (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(r) Determined (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(s) Attentive (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(t) Jittery (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Section 5: Entrepreneurial Passion					
Here is a question about elements of entrepreneurial passion.					
5.1 With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?					
	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) It is exciting to figure out new ways to solve unmet market needs that can be commercialized (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) Searching for new ideas or products/services to offer is enjoyable to me (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I am motivated to figure out how to make existing products/services better (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Scanning the environment for new opportunities really excites me (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Inventing new solutions to problems is an important part of who I am (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(f) Establishing a new company excites me (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) Owning my own company energizes me (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) Nurturing a new business through its emerging success is enjoyable (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(i) Being the founder of a business is an important part of who I am (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(j) I really like finding the right people to market my product/service to (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(k) Assembling the right people to work for my business is exciting (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(l) Pushing my employees and myself to make our company better motivates me (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(m) Nurturing and growing companies is an important part of who I am (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 6: Entrepreneurial Self-efficacy

Here is a question about your personal judgement making capabilities

6.1 With regard to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
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(a) Starting this new business is much more desirable than other career opportunities I have (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) If I start this new business, it will help me achieve other important goals in my life (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Overall, my skills and abilities will help me start this new business (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) My past experience will be very valuable in starting this new business (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I am confident I can put in the effort needed to start this new business (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 7: Cognition

Here is a question about your style of thinking.

7.1 With regard to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) I would prefer complex to simple problems (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(b) I like to have the responsibility of handling a situation that requires a lot of thinking (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I find satisfaction in deliberating hard and for long hours (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) The idea of relying on thought to make my way to the top appeals to me (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I really enjoy a task that involves coming up with new solutions to problems (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) I prefer my life to be filled with puzzles that I must solve (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) The notion of thinking abstractly is appealing to me (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>(i) I usually end up deliberating about issues even when they do not affect me personally (9)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Section 8: Entrepreneurs proactivity</p>					
<p>Here is a question about your proactive behavior</p>					
<p>8.1 With regard to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?</p>					
	<p>Strongly Disagree (1)</p>	<p>Disagree (2)</p>	<p>Neutral (3)</p>	<p>Agree (4)</p>	<p>Strongly Agree (5)</p>
<p>(a) Go first and force rivals to respond (1)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>(b) Take the lead in offering new product, service, management skills, and product technologies (2)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>(c) Tend to take the strategic attitude to compete with rivals (3)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Section 9: Entrepreneurial Resilience</p>					
<p>Here is a question about how you respond to challenges.</p>					
<p>9.1 Please consider the extent to which the following statements describe you:</p>					
	<p>Does not describe me at all (1)</p>	<p>Does not describe me very well (2)</p>	<p>Describes me somewhat (3)</p>	<p>Describes me well (4)</p>	<p>Describes me very well (5)</p>
<p>(a) I look for creative ways to alter difficult situations. (1)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(b) Regardless of what happens to me, I believe I can control my reaction to it. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I believe I can grow in positive ways by dealing with difficult situations. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) I actively look for ways to replace the losses I encounter in life. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Section 10: Relationships and Wasta					
Here is a question about the maintenance of your business networking and relationships.					
11.1 This question will focus on the role of Wasta on jobs and businesses. With regards to the following statements, would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?					
	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
(a) I receive more opportunities because of my personal network (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) I have at least one person who tries to get me business opportunities (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) I have received support for my business because of who I know (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(d) I know people who try to get me resources for my business (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) I have at least one friend who is an entrepreneur (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix IIB: Questionnaire Arabic Version



ROYAL
HOLLOWAY
UNIVERSITY
OF LONDON

استبانة سرية لدراسة ريادة الأعمال بالصندوق الوطني لتنمية المشاريع الصغيرة والمتوسطة في دولة الكويت

تعليمات استكمال الاستبانة: تغطي الاستبانة مجموعة واسعة من الموضوعات عن ريادة الأعمال والابتكار والتي سيستغرق إكمالها حوالي 15 دقيقة ولا تستوجب وجود معرفة متخصصة للمشاركة. أملين أن تجدوا الاستبانة ممتعة ومحفزة بنفس الوقت

برجاء قراءة جميع التعليمات بعناية والإجابة على جميع الأسئلة. كل ما عليكم فعله هو الإجابة فقط على أسئلة الاستبانة. المعلومات والأجوبة التي سوف تزودونا بها ستكون سرية ومجهولة الهوية

إذا كنت بحاجة إلى أي مساعدة ، من فضلك لا تتردد في التواصل معي على
meshal.alameeri.2018@live.rhul.ac.uk

أشركم مرة أخرى على مساعدتكم ووقتكم الثمين

القسم الأول: معلومات عامة
فيما يلي بعض الأسئلة حول الخلفية العامة الخاصة بك و الخلفية الخاصة بشركتك
يرجى اختيار الإجابة المناسبة أو ملء الفراغ

1.1 الجنس

○ ذكر (1)

○ انثى (2)

1.2 العمر

يرجى ذكر العمر بالمساحة المخصصة

1.3: المستوى التعليمي (المؤهلات العلمية)

ما هو اعلى مستوى تعليمي حصلت عليه؟
يرجى اختيار اجابة واحدة 1.3

شهادة ثانوية (1)

دبلوم (2)

شهادة جامعية (3)

ماجستير (4)

دكتوراة (5)

اخرى: يرجى ذكر اجابتك دناه (6) _____

كم عدد الشركات التي قمت بتأسيسها ادارتها بما في ذلك الشركة الحالية؟ 1.4
يرجى ذكر إجابتك في المساحة المخصصة أدناه
1.4

كم عدد الشركات التي تمتلك حاليًا حصة ملكية أغلبية أو أقلية فيها ؟ 1.5
يرجى ذكر إجابتك في المساحة المخصصة أدناه
1.5

كم عدد الشركات التي قمت بإغلاقها او بيعها بحيث كان لديك حصة ملكية أغلبية أو أقلية بها ؟ 1.6
يرجى ذكر إجابتك في المساحة المخصصة أدناه
1.6

متى قمت بتأسيس مؤسستك / شركتك ؟ 1.7
يرجى ذكر إجابتك في المساحة المخصصة أدناه

في أي قطاع تدرج مؤسستك/ شركتك ؟ 1.8

الصناعات الأولية (1)

التصنيع (2)

اعمال البناء (3)

خدمات (4)

التجزئة (5)

الجملة (6)

١.٩ ما هو المنتج الرئيسي أو الخدمة الرئيسية التي تقوم بإنتاجها أو تقديمها
يرجى الوصف بإيجاز في المساحة المخصصة أدناه

ما عدد الموظفين في مؤسستك/ شركتك؟ 1.10
يرجى ذكر إجابتك في المساحة المخصصة أدناه 1.10

ما هي المحافظة التي تقع بها مؤسستك / شركتك ؟ 1.11

الأحمدى (1)

الفروانية (2)

العاصمة (3)

حولي (4)

مبارك الكبير (5)

الجهراء (6)

القسم الثاني: الابتكار المؤسسي
فيما يلي بعض الأسئلة حول قدرات الابتكار الخاصة بشركتك

الابتكار الاستكشافي 2.1-

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير موافق بشدة؟ 2.1

لا أوافق بشدة (1) | لا أوافق (2) | محايد (3) | موافق (4) | موافق بشدة (5)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. نحن دائماً (1) ما نقبل طلبات تتخطى ما هو موجود من بضائع وخدمات
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. نحن (7) نقترب بشكل منتظم من الفرص الجديدة في الأسواق الجديدة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. نحن (8) نختبر بشكل منتظم منتجات وخدمات جديدة في الأسواق الموجودة فعلياً
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د. نحن (9) نطور باستمرار طرقاً إبداعية لتلبية احتياجات العملاء

الإبداع الاستغلالي 2.2-

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير موافق بشدة؟ 2.2

لا أوافق بشدة (1)	لا أوافق (2)	محايد (3)	موافق (4)	موافق بشدة (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. نعم (1) بشكل مستمر على تحسين فعالية استحداث بضائع أو خدمات جديدة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. نعم (7) باستمرار لخفض التكاليف ذات الصلة لانتاج البضائع أو الخدمات مع المحافظة على الجودة المطلوب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. نحن (8) نختبر بشكل منتظم منتجات وخدمات جديدة

القسم الثالث: تبني ابتكار تكنولوجيا المعلومات
سيركز هذا القسم على ابتكار تكنولوجيا المعلومات وتبنيها في عمالك / شركتك

فيما يلي بعض الأسئلة حول دور وأهمية التكنولوجيا

يرجى تقييم مدى تلبية تكنولوجيا المعلومات لتوقعات عمالك / تجارتك فيما يتعلق بالعبارات التالية ، هل - 3.1
سنقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير موافق بشدة؟ 3.1

لا أوافق بشدة (1) غير موافق (2) محايد (3) أوافق (4) أوافق بشدة (5)

لا أوافق بشدة (1)	غير موافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

أ. أرى أن (1)
الابتكار في
تكنولوجيا
المعلومات سوف
يكون مفيداً في
عملي التجاري

ب. استخدام (4)
الابتكارات
الحديثة في
تكنولوجيا
المعلومات يمكنني
من تنفيذ المهام
بصورة أسرع

ج. (5)
استخدام
الابتكار في
تكنولوجيا
المعلومات يزيد
من قدرتي
الإنتاجية

د. (6)
استخدام
الابتكار في
تكنولوجيا
المعلومات يزيد
من الفرص التي
تمكنني من
الحصول على
المزيد من المزايا
في عملي التجاري

هـ. استخدام (7)
الابتكار في
تكنولوجيا
المعلومات

يعطيني قدرة
تنافسية أكبر

يرجى تقييم مدى نيتك في استخدام تكنولوجيا نظم المعلومات -3.2
فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير موافق بشدة؟ 3.2

غير موافق (1) تماما	غير موافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. (1) أتوقع أنه يمكنني استخدام الابتكار في تكنولوجيا المعلومات إذا ما أتحت لي في المستقبل
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. فلسفتي (4) الشخصية هو القيام بكافة ما أستطيع لاستخدام الابتكار في تكنولوجيا المعلومات في المستقبل
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. لقد (5) فكرت بجدية في استخدام الابتكار في نظم المعلومات في عملي إذا كان متاحًا ، في الشهرين القادمين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د. أخطط (6) لاستخدام ما هو متوفر حالياً من ابتكارات في تكنولوجيا المعلومات في عملي للعام القادم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	هـ. (7) اعترزم استخدام ابتكارات في تكنولوجيا المعلومات مشابهة في المستقبل.

القسم الرابع: الحالة المزاجية / العاطفية

فيما يلي بعض الأسئلة حول صحتك العامة وحالتك المزاجية. 4

إجمالاً، ما مدى السعادة التي كنت تشعر بها بالأمس؟ 4.1 - 4.1

غير سعيد جداً (1)

غير سعيد (2)

محايد (3)

سعيد (4)

سعيد جداً (5)

بصفة عامة ، هل تقول أن صحتك هي: 4.2 - 4.2

سيئة (1)

طيبة نوعاً ما (2)

جيدة (3)

جيدة جداً (4)

ممتازة (5)

يرجى توضيح إلى أي مدى تشعر حالياً بالعواطف التالية في العمل ، أي عدد المرات التي تشعر فيها بكل عاطفة 4.3
في المتوسط: 4.3

أبدأ (1)	نادراً (2)	أحياناً (3)	غالباً (4)	دائماً (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. (1) مهتم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. (39) أشعر بالضغط

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب.ت (40) مستنار
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب.ث (41) محبط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج.ج (42) قوي
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ح.ح (43) منذب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	خ.خ (44) مذعور
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د.د (45) عدواني
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ذ.ذ (46) متحمس
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ر.ر (47) فخور
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ز.ز (48) نشط
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	س.س (49) خائف
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ش.ش (50) سريع الانفعال
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ص.ص (51) متيقظ
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ض.ض (52) أشعر بالعار

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ط. (53) مستلهم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ظ. (54) عصبي
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ع. (55) حازم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	غ. (56) ملتفت الانتباه /مكثرت
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ف. (57) شديد النفرة

: القسم الخامس: شغف ريادة الأعمال
هذا القسم سوف يتم فيه التركيز على شغفك وطموحك

فيما يلي سؤال حول عناصر شغف ريادة الأعمال

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير -5.1 موافق بشدة؟ 5.1

لا أوافق بشدة (1)	غير موافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. (1) إنه من المثير استحداث طرق جديدة لحل ما هو غير متاح من الاحتياجات السوقية والتي يمكن التعامل معها بشكل تجاري.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. (14) البحث عن أفكار جديدة لمنتجات / خدمات أمر أتمتع به بشكل شخصي
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. (15) لدي حوافز تجعلني استحدث كيفية

					جديدة لتحسين ما يتم تقديمه من منتجات / خدمات
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	بث (16) يثيرني حقاً مسح البيئة للبحث عن فرص جديدة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. (17) يعد ابتكار حلول جديدة للمشكلات جزءاً مهماً مني
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ح. (18) يثيرني إنشاء شركة جديدة.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	خ. (19) امتلاك شركتي الخاصة ينشطني
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د. (20) من الممتع رعاية عمل تجاري جديد عبر ظهور نجاحه
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ذ. (21) أن أكون مؤسس شركة هو جزء مهم مني.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ر. (22) حقاً أحب العثور على الأشخاص المناسبين لتسويق منتجاتي / خدمتي
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ز. (23) هيكله الموظفين بشكل صحيح للعمل في تجارتني أمر مثير للغاية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	س. (24) أشعر بالتحفيز عندما أدفع الموظفين وأدفع نفسي شخصياً لوضع شركتي في مركز أفضل

ش (25) تطوير
وتنمية الشركات
يمثل جزء هام من
شخصيتي

القسم السادس: الكفاءة الذاتية لريادة الأعمال
: فيما يلي سؤال حول قدراتك على اتخاذ القرارات الشخصية

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير -6.1 موافق بشدة؟ 6.1

لا أوافق بشدة (1) غير موافق (2) محايد (3) أوافق (4) أوافق بشدة (5)

لا أوافق بشدة (1)	غير موافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>أ. أن أبدأ في (1) هذا العمل التجاري الجديد أمراً هو أكثر شيء أرغب فيه مقارنة بأي فرص عمل أخرى</p>				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>ب. (6) إذا ما بدأت هذا العمل التجاري الجديد فإن هذا سوف يساعدني على تحقيق أهداف هامة أخرى في حياتي</p>				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>ج. إجمالاً (7) ما لدي من مهارات وقدرات سوف تساعدني في البدء في هذا العمل التجاري الجديد</p>				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>د. خبراتي (8) السابقة سوف تكون ذات قيمة كبيرة عند البدء في هذا العمل التجاري الجديد</p>				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>هـ. أشعر (9) بالثقة كوني أستطيع بذل الجهد المطلوب للبدء في هذا</p>				

:القسم السابع: الإدراك

فيما يلي سؤال حول طريقة تفكيرك

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير -7.1 موافق بشدة؟ 7.1

لا أوافق بشدة (1)	غير موافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. (1) أفضل المشاكل الأكثر تعقيداً عن المشاكل البسيطة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. (19) أحب أن أتحمل مسؤولية التعامل مع موقف يتطلب الكثير من التفكير.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ت. (20) أجد الرضا في المداولات الشاقة والتي تمتد لساعات طويلة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ث. (21) فكرة الاعتماد على أفكار ما بعينها لشق طريقي للقيمة أمر يجذبني بشدة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. (22) أنا أستمتع حقاً بمهمة تتضمن التوصل إلى حلول جديدة للمشكلات
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ح. (23) أفضل أن تكون حياتي مفعمة بالألغاز التي يجب أن أجد حلولاً لها

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	خ (24) فكرة التفكير المجرد جذابة بالنسبة لي
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د. (25) أفضل المهام التي تتسم بالقدرة الفكرية والصعوبة والأهمية عن تلك المهام التي لا تكون هامة بشكل كبير ولا تحتاج الكثير من التفكير.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ذ. (26) عادة ما ينتهي بي الأمر بالتداول حول قضايا حتى عندما لا تؤثر علي شخصيًا.

القسم الثامن: استباقية رواد الأعمال
في ما يلي سؤال حول سلوكك الاستباقي

فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير -8.1 موافق بشدة؟ 8.1

لا أوافق بشدة (1)	لا أوافق (2)	محايد (3)	أوافق (4)	أوافق بشدة (5)	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. أكن أولاً (1) وادفع الآخرين لملاحقتي في المنافسة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. (4) أخذ زمام المبادرة في تقديم منتجات جديدة وخدمات ومهارات إدارية وتقنيات المنتج
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ت. (5) اميل إلى اتخاذ موقف استراتيجي للتنافس مع المنافسين

القسم التاسع : الصمود الريادي
في مايلي سؤال حول كيفية استجابتك للتحديات. 9

يرجى تقييم مدى وصف العبارات التالية لك أو عدم وصفها لك: 9.1- 9.1				
لا يصفني (1) على الإطلاق	لا يصفني (2) جيدا	يصفني إلى (3) حد ما	يصفني جيدا (4)	يصفني (5) بشكل جيد جدا
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

أ. (1) أبحث عن طرق خلاقة (إبداعية) للتعامل مع المواقف الصعبة

ب. بغض النظر عما يحدث لي فأناي أؤمن أنني أستطيع التحكم في ردود أفعالي نحو هذا الأمر

ج. أعتقد (6) أنني أستطيع أن أنمو بطرق إيجابية من خلال التعامل مع المواقف الصعبة

د. أبحث (7) بشكل نشط عن طرق أستطيع من خلالها استبدال الخسائر التي أصادفها في حياتي

القسم العاشر المحسوبية (الواسطة) والعلاقات :

سيركز هذا السؤال على دور الواسطة في الوظائف والأعمال التجارية فيما يتعلق بالعبارات التالية ، هل ستقول أنك موافق بشدة ، أو موافق ، أو محايد ، أو غير موافق ، أو غير-11.1 موافق بشدة؟ 11.1

لا أوافق بشدة (1) غير موافق (2) محايد (3) أوافق (4) أوافق بشدة (5)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	أ. (1) أحصل على المزيد من الفرص لما لدي من شبكة للعلاقات الشخصية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ب. عندي (6) شخص واحد على الأقل يحاول أن يوفر لي فرص تجارية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ج. تلقيت (7) دعم بخصوص عملي التجاري لما لدي من معارف
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	د. لدي (8) أشخاص من معارفي يحاولون توفير الموارد اللازمة لعملي التجاري
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	هـ. لدي (9) صديق واحد على الأقل رائد أعمال

