# Activity Theory as a Lens for Managerial Innovation in the Kuwaiti Amiri Guard

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**A thesis submitted in partial fulfilment of the requirements of the degree of Doctor of Philosophy**

**October 2022**

# Table of Contents

# List of Tables

# List of Illustrations

# Acknowledgements

First and foremost, my sincerest thanks and appreciation are extended to my God for the infinite miracles and generosity that have afforded me the opportunities, ability, and knowledge necessary to complete this PhD thesis. I am indebted for all His blessings.

I owe significant appreciation and gratitude to my supervisors Dr Marie Griffiths and Dr Jonathan Owens, without whom this thesis would not have been possible. From the bottom of my heart, I thank them for their infinite guidance, understanding, encouragement, knowledge, patience, and insight. During this PhD journey, I have faced considerable challenges such as the loss of my brother and the need to complete the study during a global pandemic. However, through their expert supervision my thesis could be realised. Thank you, Dr Griffiths and Dr Owens, for everything.

I would also like to take this opportunity to thank the PGR Support Officer, Ms Michelle Jones, for her exceptional help provided to all postgraduate students, as well as thanking the PGR team and all the faculty members in the University of Salford who delivered the taught sessions during the PhD programme.

I must pay tribute to my parents for my education and for developing my self-discipline since childhood. My father, you are at God's mercy so I cannot inform you directly about this achievement, but I will ensure that you can always be proud of your son, as my name follows yours. I will use all that God has gifted me in health, education, and wealth to help society and creation. What can I say to my mother, for her patience and understanding when I could not be with her? Thank you, my mother for your prayers, unlimited encouragement, and limitless love.

I would like to extend special thanks to my wife, Athari Alsuwaidan, for her encouragement, support, sacrifices, patience, and for managing the serious responsibility towards me, our son Saud and our daughter Rania. Thank you, my dear wife, for your infinite help and belief over these years to enable me to realise my dream and pursue doctoral study. I must also thank Saud and Rania for moving abroad to attend school here in the UK, and for accepting my dereliction of duty as a father while I have been engaged in my research.

I would like to confer special gratitude to my country, the State of Kuwait; to my sponsor, the Ministry of Defense; and to the Military Education Authority for providing me with the opportunity to achieve my dream and pursue doctoral study. I am also most grateful to my commanders Lieutenant General Sheikh Abdullah Nawaf Alsabah, Lieutenant General Fahad Abdulrahman Alzaid, and General Hamad Abdullah Alsaleh, who believed in and supported me. Furthermore, I would like to thank the Military Attaché Office in London for their ongoing support and assistance, while offering special thanks to all the participants who took part in this research by sharing their knowledge, experience, and opinions.

Thank you, God, for everything …

# Dedication

*To the Kuwaiti Ministry of Defense and my commanders for your trust, support, and encouragement.*

*To Athari, Saud, and Rania for your sacrifices, patience, and unconditional support.*

# Declaration

I certify that this thesis, which I now submit for examination for the award of Doctor of Philosophy, is entirely my own and has not been taken from the work of others, save and to the extent that such work has been cited and acknowledged within the text of my work. This thesis was prepared according to the regulations for postgraduate study by research of the University of Salford and has not been submitted in whole or in part for an award in any other Institute or University.

The work reported in this thesis conforms to the principle and requirements of the University's guidelines for ethics in research. The University has my permission to keep, lend, or copy this thesis in whole or in part, on condition that any such use of the material or the thesis be duly acknowledged.

Signature of candidate: Abdulaziz Aldaremi……

# Publications

Aldaremi, A., Owens, J., & Griffiths, M. (2021). *Managerial Innovation as an Approach for Optimising Business Performance* [Conference paper]. The British Academy of Management Conference 2021. Lancaster University. https://www.researchgate.net/publication/354655903_Managerial_Innovation_as_an_Approach_for_Optimising_Business_Performance

Aldaremi, A., Owens, J., & Griffiths, M. (2022). *Managerial Innovation: An Approach for Mitigating the Increasing Costs in the Global Economy*. [Submitted to Strategic Change journal]

Mohamad, M., & Aldaremi, A. (2020). *Activity Theory as a Lens for Corporate Managerial Innovation: A Proposed Systematic Framework for Military Managerial Innovation* [Conference paper]. The British Academy of Management Conference. University of Manchester. https://www.researchgate.net/publication/341736556_Activity_theory_as_a_lens_for_Corporate_Managerial_Innovation_A_Proposed_Systematic_Framework_for_Military_Managerial_Innovation

# List of Abbreviations

| | |
|---|---|
| AI | Artificial Intelligence |
| APSC | Australian Public Service Commission |
| EFS | Economic and Fiscal Sustainability |
| EGIS | Electronic Government Information Services |
| FDI | Foreign Direct Investment |
| GDP | Gross Domestic Product |
| HIT | Health Information Technology |
| ICT | Information and Communication Technology |
| IDC | International Data Corp |
| IMF | International Monetary Fund |
| IoT | Internet of Things |
| IoMT | Internet of Military Things |
| KAFO | Kuwait Achievers for Future Opportunities |
| KNDP | Kuwait National Development Plan |
| MENA | Middle East and North Africa |
| MI | Managerial Innovation |
| MIS | Management Information System |
| PPP | Public–Private Partnership |
| R&D | Research and Development |
| RFID | Radio-Frequency Identification |
| RQ | Research Question |
| SCPD | Supreme Council for Planning and Development |
| SIA | State, Industry, and Academia |
| SME | Small and Medium-sized Enterprise |
| UK | United Kingdom |
| USA | United States of America |

# Abstract

This research explores managerial innovation (MI) and its embeddedness in the characteristics of a public-sector military organisation. MI reflects novel organisational structures, administrative systems, management practices, processes, and techniques with value-creation potential for organisations. Moreover, it facilitates organisational development through the utilisation of new approaches so that resources can be utilised to their full potential. Innovation has primarily been associated with the private sector, where the concept and definitions were initially developed. Therefore, to investigate MI in the military, a less frequently explored domain, a systematic analysis of MI in the public- and private-sector contexts becomes necessary.

This research focuses its lens on the manner in which MI is realised with respect to the organisational activities in a military setting. To achieve this, the activities were viewed within the context of the policies/rules/regulations and those individuals who perform their respective roles in carrying out the organisational activities. Furthermore, focus was placed on the tools utilised or necessary to successfully conduct the organisational activities. To understand the organisational setting in terms of the activities requiring MI implementation, activity theory was utilised to provide a basis to explore the organisational setting in view of three dimensions: the subjects, objects, and tools of MI.

This researcher selected the Kuwaiti Amiri Guard as the case study for this investigation, which is responsible for military duties such as providing protection for the heads of state and the Royal Palaces. This case was selected since, to date, no investigation has been conducted to explore the military organisation, despite the Kuwait Vision 2035's focus on the need to develop a sustainable diversified economy, creative human capital, and progressive infrastructure. An in-depth systematic literature review was undertaken for consideration of the MI concepts that exist in the public sector. From this review, the conceptualisation of a framework was derived and inspired from activity theory, which led to the adoption of an activity system in order to facilitate understanding of how MI might evolve within certain public-sector military organisations. Qualitative data were then collected through semi-structured interviews with 25 key decision makers and leaders of the Kuwaiti Amiri Guard (i.e., the head of the organisation, heads of branch, and unit leaders), while the data analysis utilised template analysis and grounded theory.

The data analysis found that the current MI practice within the organisation involves a certain degree of top-down directed innovation, with potential to shift this MI practice towards greater directed and undirected (bottom-up) innovation through innovative skills, leading to the creation of an organisational structure grounded in innovative practice. However, the investigation identified limited resources and capabilities available for MI implementation. Furthermore, the study found insufficient opportunities for MI development due to time pressures, the interactivity of human resources, and the technical capability. The need to integrate the tools of MI (e.g., information and communication technology, the internet of (military) things, and management information systems) at the organisation was found to be restricted by issues relating to non-inclusive decision-making, availability of funds, the rigid organisational structure, and the lack of dedicated MI professionals (talent) or an MI department. However, the case study identified a willingness to adopt MI practices and recognition of where these could benefit the activities of the organisation, thus presenting the Kuwaiti Amiri Guard as an MI-friendly organisation where MI implementation can prosper

and help fulfil the organisation's obligations under the Kuwait Vision 2035 strategic development plan.

A Kuwaiti Amiri Guard Theoretical MI Framework emerged from the data analysis, which can enable GCC-based military organisations, and public-sector organisations in other nations featuring similar contexts, to utilise the framework for the evaluation of their current MI usage and the scope to develop the full potential of the organisation through the transformation process. The internal and external validity of the resulting MI framework were determined in this study through its appraisal and the responses from three military organisations based in Kuwait. The developed framework will enable the assessment of the organisational subjects of MI (i.e., the processes, mechanisms, and systems of management), objects of MI (i.e., the leaders, management, and staff) and tools of MI (i.e., ICT advancement and integration) to realise the benefits of information accuracy, cost-savings, efficiencies, improved collaboration, and increased performance. Furthermore, this study presents a roadmap as an empirical resource for military organisations sharing similar characteristics to develop innovation adoption through the domains of management, leadership, technology, and environment.

This research contributes to the paucity of literature in the domain of MI in the military field by extending our understanding of MI concepts in the research context of a military organisation in the Gulf region in general, and in Kuwait in particular. Moreover, the research contributes to knowledge through the development of the Kuwaiti Amiri Guard Theoretical MI Framework, which provides an opportunity for such military organisations to conduct an in-depth analysis of the existing MI pillars and to identify where improvements may be achieved. A further methodological contribution is made through the research methodology and case study coding approach, applied to investigate a military context in a GCC country, namely the Kuwaiti Amiri Guard. This study believes that the developed research methodology has potential for application more widely in military and public-sector organisations that share similarities with the case study in this investigation, thus highlighting the potential transferability of the research methodology.

# Chapter 1
# Introduction

## 1.1 Background

There is a considerable number of academic publications and corporate reports that point out the importance of managerial innovation (MI), as well as how it can improve the organisational processes and enable the transformation from classical management to the modern style (Abdul *et al*., 2018; Burgess *et al*., 2005; Damanpour & Aravind, 2012; Jolles *et al*., 2016; Su *et al*., 2018). Su *et al*. (2018) described MI as an intelligent method to facilitate a corporation's development and increase its managerial strength and capabilities by utilising new approaches to develop important resources. While some scholars consider MI as a process (Rouse, 2018), others consider it as a cyclical procedure of organisational change through ideation until the final stage of successful implementation has been achieved (Shultz, 2016).

According to Agogué *et al*. (2017), MI has proved to be a motivating tool to encourage managers and leaders to generate the principles of relativity, contingency, and agility in designing and implementing managerial policies and strategies. In the context of MI, *relativity* can be described as emerging from new technologies' impact, as well as the manner of practice within the organisational management (Kisperska-Moroń, 1992); while *contingency* is the extent of the relationship variables found between the size of the organisation and the environmental uncertainty, which are often influential to the degree of innovation and control within organisations (Damanpor, 1996); and *agility* refers to the competency of a firm that enables adaptation to the environmental contingencies imposed, with a firm's capacity to innovate having a positive impact on the organisational and management agility (Ravichandran, 2018). On the other hand, according to Sheehan *et al*. (2014), MI enhances employees' self-achievement and self-esteem through the notion of organisational citizenship. In addition, García-Cruz *et al*. (2018) argued that managers need to establish an integrated environment by creating a suitable communication and collaboration system with their employees. This is achieved by managers seeking continuous development or dynamic change in management via technology and the available resources that develop and increase performance, communication, speed, accuracy, and productivity, while simultaneously reducing costs, effort, and redundancy. As observed, an aspect of the

MI literature indicates that managers ought to prove their commitment towards their employees in terms of self-development and enhanced learning, from the top management to the operational level, to obtain an improved understanding of the multiple perspectives in the systems of an organisation (Agogué *et al*., 2017; García-Cruz *et al*., 2018; Sheehan *et al*., 2014).

The private sector and the public sector have distinct characteristics, which create specific internal environments and capacity to dynamically adapt to their surroundings. Shultz (2016) highlighted the accelerating gap between the private sector and military sector in terms of understanding and practising MI. Accordingly, there is a need to summarise the corporate practices of MI and embed then in a proposed framework (or conceptual framework) for military institutions. On the other hand, innovation scholars have attempted to create new conceptual models to understand innovation or to improve the existing models so they can address the dynamic changes unfolding in modern organisational life and enable the achievement of the Millennium Goals, which represent desirable aims for any public-sector organisation seeking to develop and improve (Heeks *et al*., 2014). For example, Heeks *et al*. (2014) presented a novel model recognising the need for the continuous development of innovation models rather than relying on previous models, considering the latter as a platform for development and improvement that can provide superior testing of the models and enable relevant selection that allows a clear comparison.

Yet, there is a lack of systemic views that address the origin, the deployment, and the impact of MI as a comprehensive process at different levels of management, thus representing a gap in the literature that this study seeks to address by examining the accordant dimensions of MI with respect to the subjects, objects, and tools through the application of activity theory. Accordingly, this research begins with a systematic literature review to map the research gaps in terms of the MI definition and building blocks, as well as the conceptualisation of the MI parameters, to critically evaluate the MI literature. Since MI is a concept that includes the exercising of innovation, three theories have been used to conceptualise MI, specifically, *innovation diffusion theory*, *open innovation theory*, and *inclusive innovation theory*. Representing the main theories of innovation, and addressing elements of the innovation domain, the advantages and disadvantages of each theory are thus discussed to justify the choice of the proposed conceptual framework for MI systems of activity in Chapter 3. This framework offers a unique perspective of the MI activity system in

the military as a first attempt to theorise MI in general, and thus represents one of this study's contributions in terms of facilitating MI implementation into a public-sector military organisation.

## 1.2 Research Context

### *1.2.1 Kuwait Vision 2035*

In the changing geo-economic climate, innovation and entrepreneurship can be utilised to drive an economy such as Kuwait's to propel it into the post-oil paradigm in a much more diversified and developed manner (Isik, 2018). Kuwait has a vast supply of petroleum commodities that designates the state as a critical component in the framework of the global economy. Nonetheless, the essentially acute unpredictability of the value of oil presents a serious threat to the Kuwaiti economic system (Hassan *et al.*, 2017). Furthermore, in the current scenario, those oil-producing countries that fail to prepare for the global shift away from fossil fuels are threatened by risk to their economic stability (Deghan, 2021). Conversely, numerous studies have highlighted the urgent need for economic diversity to secure performance excellence in the long run, which is being obstructed by mono-sectorial single-line economic systems (Fruman, 2017).

Since the discovery of oil, the states of the Gulf Cooperation Council (GCC) have worked with a model of development based on oil. This has been predominantly true for Kuwait, since oil has transformed this small nation-state from a thriving trading point into an oil-exporting centre with a highly financialised but non-diverse economy (Al-Shamsi *et al.*, 2018).

Statistics demonstrate the extent to which the Kuwaiti economic system is reliant upon oil, which represents more than half of the total gross domestic product (GDP) at approximately 95% of the total exports, and around 90% of governmental income (Shawki, 2019). Although oil has generated extreme wealth for Kuwait, it has also propelled it into unidirectional economic dependence. Due to oil price instability, GCC's oil-dependent economies have entered into uncharted territory. As a result, in 2010 the Kuwaiti government unveiled the Kuwait Vision 2035: a strategic plan to transform the country into a financial and commercial centre (Ramadhan *et al.*, 2013).

The Kuwait Vision 2035 strategic development plan is aspiring, comprehensive, and compulsory. However, the key question is whether Kuwait can adapt by building a robust, diversified, and sustainable economy outside of oil. Kuwait needs to create a private sector that can construct a flourishing knowledge economy, as well as a regional trading centre that matches the heights of Kuwaiti history. This will assist the nation in becoming not only a vital region of the Middle East and the world at large, but also a significant financial destination for economic development across the Arab world. Prospects like the Northern Economic Zone—also recognised as the Silk City project[1]—are not only an opportunity for Kuwait to reclaim its historical place amongst the modern nation-states as a vital trading port, but also represent the opening up of a traditional system for local investors to join forces with their international counterparts to create profitable and sustainable commercial prospects (Alrukaibi *et al*., 2020).

To realise the ambitions of Kuwait's strategic development plan, the numerous inherent challenges should be recognised and addressed. In this regard, the venture community must comprehend the entirety of the prospects and related challenges, and determine the role to be played in order to overcome these issues. Kuwait's economic future is centred on its ability to diversify its income streams, obtain foreign capital in the form of investment and cultivate its private sector.

Enormous financial shock absorbers, together with the substantial foreign resources of the Kuwait Investment Authority that reached $560 billion in 2018, permit Kuwait to address the issue of financial reforms with less urgency than other GCC countries (Bridge, 2019). Even with the ongoing limited fiscal reforms, Kuwait anticipated the current account and fiscal balances (including investment income) to stay within the range of surpluses until 2021, provided that the oil price remained at or above $60 per barrel (Alshamsi *et al*., 2018).

However, Kuwait still trails behind its regional peers with respect to the global competitiveness rankings, and is below par with regards to the ease of doing business (positioned 97$^{th}$ out of 190 countries in 2019) (World Bank, 2019). The current mechanisms of government and administration, bureaucracy, restrictive labour laws, and obstacles in terms of the ability to access finance (in particular for small and medium-sized enterprises

[1] The Silk City project is an economic free zone and deep-sea port that includes five islands and a territory in the north of the country that is connected to the capital by the Sheikh Jaber Al Ahmed causeway. The objective is to diversify away from oil exports and develop the private sector to help reduce public-sector spending on salaries and subsidies (Westall & Hagagy, 2019).

[SMEs]) are referred to as major challenges, although the global classifications should steadily improve in the coming years if reforms are implemented. Furthermore, Kuwait must strive to achieve satisfactory inflows of foreign direct investment (FDI) beyond the energy sector to expand the economy and generate a vibrant and extensive private sector. Moreover, considerable policy formulation should be undertaken to facilitate a national infrastructure that is suitable for the diversification and expansion of the economic zones, which currently fall far behind the United Arab Emirates and Qatar, owing to the restricted public investment over the last two decades.

The key constraint to the vital restructuring, broadening, and divergence of Kuwait's economic system is the delays in the legislative branch of the government. Albeit that such an issue is unlikely to be addressed in the short term, stakeholders hope for some headway in structural improvements over the coming years. Nevertheless, the required changes to expand the economy away from oil will take some time to gain traction.

The labour market configuration in Kuwait must provide incentives for citizens to extend their contribution in the private sector. Regrettably, the likely attraction of the private sector is overshadowed by lucrative and risk-free rewards in the public sector, which employs 80% of Kuwaiti nationals or 40% of the overall workforce (Gulseven & Mostert, 2017). In addition, the policies to maintain the low rate of unemployment via public-sector recruitment are self-defeating and unsustainable in the long run if the economy is to grow. In this framework, a complete overhaul of the educational system is essential to align the expertise and abilities of the new participants of the labour force with the marketplace requirements. Despite the fact that the Kuwaiti government is familiar with the challenges of refocusing the economy away from the oil sector dependency, limited progress has been made in executing the reform agenda to advance a conducive business milieu and enhance the private sector, principally through the growth of SMEs (Alzougool, 2019). Continued obstruction and disapproval of deeper reforms by some legislators could halt further progression towards implementing the Kuwait Vision 2035 development plan.

### *1.2.2 GDP and the Non-Oil Economy*

The discovery of oil reserves and subsequent extraction began an era of socio-economic abundance in Kuwait's history. Since then, the national development has been driven by the petroleum sector, stimulating the growth of a public-sector workforce and the

injection of investment capital into the common infrastructure. However, the public sector flourished at the expense of the private sector, to such a degree that the development and growth of the private sector was considered unnecessary, and thus the spirit of enterprise was never nurtured at the state level. The one-directional economic approach of the oil-rich nation of Kuwait has led to vast economic disparities in terms of GDP, whereby in the latter part of the 20th century the state-controlled domain was estimated to represent more than half of the total Kuwaiti economy, with approximately 91% of the state revenue generated via the export of petroleum products (Kaboudan, 1988).

The sudden end of the previous oil boom in 2014—particularly with regard to the regulation of the per-barrel cost—revealed the vulnerability of oil-dependent GCC countries. Kuwait experienced a significant decline close to 13% of its total GDP in the 2015–2016 period, which trended the economy's decline from a 27% budget surplus in 2013 (World Bank, 2016). Therefore, if Kuwait did not radically redesign its economic structures, the country was projected to incur a fiscal shortfall in the range of $75–80 billion by 2022–2023 (DiChristopher, 2018).

On the other hand, through careful investment Kuwait has managed to maintain a relatively healthy economic status. Besides its broad oil assets and in addition to its economic agility, Kuwait retains substantial sovereign wealth funds and investments, significant treasury funds, and a satisfactory right of entry into debt markets to support its ability to absorb the recent economic challenges (Al-Kuwari, 2019). Developing rational strategies and implementing them in the years ahead will ensure Kuwait emerges from the current situation in a much stronger position. Moreover, the present state of economic affairs does, in fact, offer an opportunity and a platform that could be utilised as a facilitator to gain broad acceptance in order to bring about the comprehensive transformation prerequisite to expand and diversify the economic system.

To that end, the national programme for Economic and Fiscal Sustainability (EFS) provides tangible strategies based on a concrete framework of how to reduce the financial dependency on oil via the sustained enablement of private-sector development in a bid to revolutionise the state's economic structures. Introduced under the grand plan of the Kuwait Vision 2035, the EFS aims to profoundly enhance the business environment to facilitate commerce, to support the private sector by augmenting external and internal funds, to

stimulate the employment marketplace, and to diminish fiscal disparities by streamlining government expenditure and the intensification of non-oil returns.

However, numerous challenges have to be addressed in a systematic manner to achieve the targeted goals of the necessary economic transformation. Prior to 2014, Kuwait had experienced sixteen uninterrupted years of economic surplus, suggesting the notion of unrestricted wealth to both the state executives and citizens alike. Changing these perceptions of abundance and conveying the inevitability of transformation will entail substantial determination in terms of the management of narratives for innovation (Sertin, 2019). In doing so, much of the effort will similarly have to be focused on the National Assembly of Kuwait, wherein directly elected members have the authority and inclination to block or sway many of the difficult but necessary reform plans. Therefore, it is of the utmost importance to achieve a national consensus on how to initiate the comprehensive reforms necessary to tackle the present situation, which can only be attained by engaging a range of stakeholders in all the stages of establishing and executing the reform plan. Conversely, numerous other issues are anticipated, such as encouraging the citizens to engage in self-sufficiency practices and bringing education and skills into line to cater for the requirements of a developing private sector.

The recent economic and financial paradigm shift provides the state and people of Kuwait with a vast scope of opportunities. The application and implementation of the much-needed reforms will facilitate the formation of more competent institutions and, in the long run, build a more vibrant and flourishing economy. If sufficiently addressed, these measures will aid in the process of re-building a future for the state and people of Kuwait that is grounded in sustainability and prosperity.

The most recent severe deterioration in oil prices unsettled Kuwait's settled financial outlook. From the upper range of well over $100 per barrel in 2014, the market saw the oil prices tumble, which only halted at well under $30 per barrel in 2016 (Stocker *et al*., 2018). Since then, the per-barrel value has fluctuated between lows of $27 per barrel in January 2016, to highs of $80 per barrel in January 2022 (United States Energy Information Administration, n.d.). The unanticipated collapse in crude oil prices came at a time when government spending was at its peak. In the 2015–2016 fiscal year, the government of Kuwait was engaged in $71 billion of expenditure (Stocker *et al*., 2018). Government outgoings saw massive capital outflows in infrastructure, huge revenues allocated to social

benefits for the citizens of Kuwait, and an oversized and inefficient public sector. Due to this liberal spending structure, Kuwait's hydrocarbon-centred economic system witnessed its first financial shortfall in 15 years with a deficit of $9 billion, after allocations to the Kuwait sovereign wealth fund and the Future Generation Fund (Ingram, 2019).

Kuwait had per-capita earnings of $43,100 in 2014, ranked 34th in the Global Competitiveness Index. Its annual report on GDP growth recorded a sharp decline in 2014 to 0.1% (CEIC, 2018). However, in 2017 the International Monetary Fund ([IMF], 2017) projected a stronger performance of Kuwait's GDP in the next decade based on the country's reform programme. Kuwait retains the world's sixth largest confirmed oil reserves; indeed, the oil industry contributes 40% of total GDP (Aljarallah & Angus, 2020). Therefore, the oil sector dominates the Kuwaiti economy and has an extensive secondary impact on the non-oil sectors of the economy, despite the fact that the manufacturing segment contributed 6.8% of GDP in 2013 (Central Statistical Bureau, 2013). More importantly, the oil and gas sector enable public expenditure to redirect spending, activating several other economic segments.

The government sector employs approximately 300,000 Kuwaiti citizens, whereas in the private sector, the number of employees is close to 1.6 million, of whom merely 76,000 are Kuwaiti nationals (World Bank, 2018). In addition to the absence of local youth employability in the private sector, Kuwait is considered to be the least appealing Gulf country for external and internal investors, whereby many avoid investing in Kuwait due to the administrative obstructions and the bureaucratic measures necessary to acquire business licences. As a result, it is absolutely necessary to address the institutional framework, to streamline the bureaucratic measures, and to incentivise Kuwaiti nationals to shift into the private sector, along with a comprehensive overhaul of the Kuwaiti system of education. It is pertinent to mention here that the most challenging features requiring systemic reforms in terms of conducting business in Kuwait are the specific labour circumstances, whereby the majority of the private-sector workers are migrants who are paid far below the standards expected by Kuwaiti nationals, thus explaining the challenges that the Kuwaiti government has experienced in migrating Kuwaitis into the private sector (International Labour Organization, 2020).

In relation with FDI, the capital inflows to Kuwait remain hindered by the counterproductive business environment and inadequate prospects for investment. Predominant is the fact that global companies and foreign venture capitalists who aspire to

finance or establish businesses in Kuwait must obtain a partnership agreement with a Kuwaiti company that owns a minimum 51% stake in said business. The unveiling of the Kuwait Direct Investment Promotion Law, which permits direct investment and absolute foreign proprietorship in some sectors, is a promising improvement but may ultimately be inadequate for meaningful increases in FDI (Kuwait Direct Investment Promotion Authority, n.d.).

#### *1.2.2.1 Non-Oil Economy and the Military Sector*

The dependency of Kuwait as an oil-based economy has also represented an obstacle for its military. Following the Gulf War, Kuwait decided to spend approximately $12 billion over a 10-year period to overhaul the nation's armed forces (see Figure 1.1). Maintaining the defence issue as an important theme, the Defense Review Group asserted that the armed forces need to be capable of withstanding an attack for 48–72 hours, until such time as international aid has arrived. Nevertheless, the result of this investment has led to an overreliance on oil by the economy of Kuwait (Cordesman & Al-Rodhan, 2006).

Moreover, the oil-based economy of Kuwait has caused a serious decline in the capability and training of the nation's citizens, resulting in 90% of private-sector employees being non-Kuwait nationals. On the other hand, personnel numbers have been an issue due to a comparative lack of applications for military positions. Military spending is observed to be in competition with the government's need to provide employment, services, and subsidies to Kuwaiti citizens.

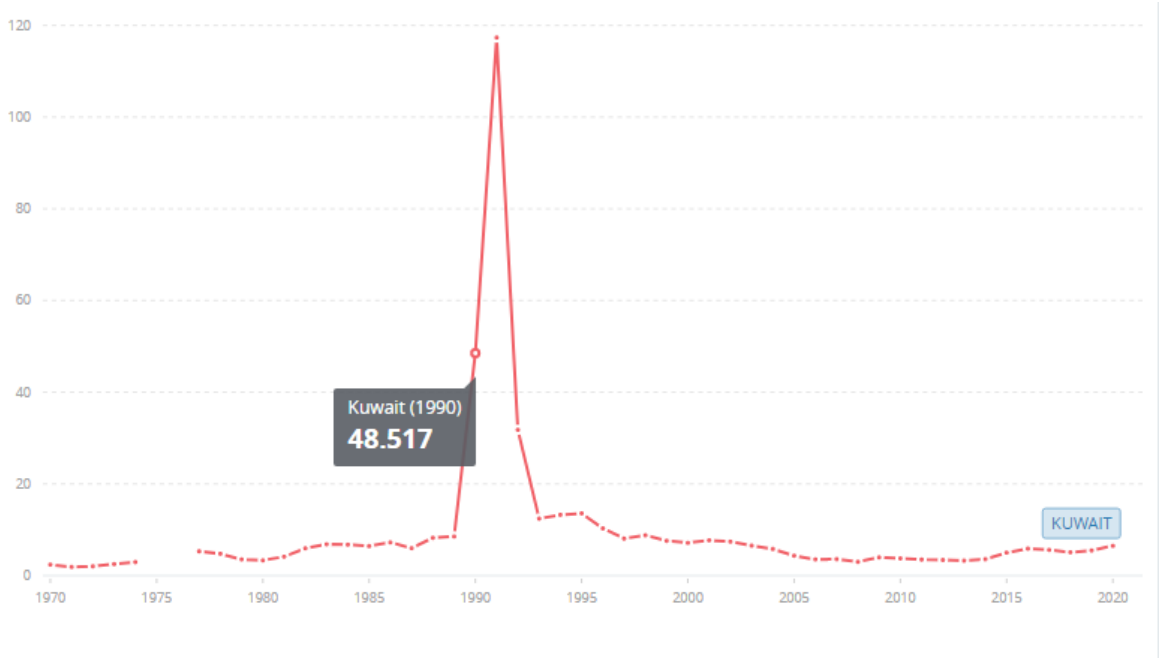



**Figure 1.1: Kuwait Military Spending - Percentage of GDP (World Bank, 2021)**

#### *1.2.2.2 Kuwait Economic Constraints & Vision 2035*

The advancement of business conditions, keenness, and affordability, the availability of a workforce with aligned skillsets, and relevant legislation are the fundamental requirements for higher investment in the diversification drive under the Kuwait Vision 2035; however, Kuwait ranked lowest in the GCC countries in terms of the Expat Insider's ease of settling in and quality of life indices (InterNations, n.d.). Kuwait, like Saudi Arabia, must strive to gain sufficient FDI outside of its energy sector to aid in the diversification of the economy beyond oil, and thus build a vigorous private sector. To this end, the sectors of information technology, financialised SMEs, and renewable energy can be utilised to gain FDI (Alabduljader, 2019). The tenacious monitoring, regulatory, and administrative challenges, the absence of transparency and sluggish improvements thus deem Kuwait as one of the least appealing destinations compared to the other GCC countries.

The narrow size of the market and the country's substantial dependence on oil may limit the expanded emerging-market portfolio managers from investing more funds in Kuwait, with FDI decreasing in the 2016–2020 period and comprising only $104 million in 2019 (Whiteaker, 2020). Nevertheless, banking influxes have been optimistic in the last five years, and this trend is speculated to continue, provided that global investment confidence does not depreciate markedly. Estimated government expenditure of around 5% and the gap

resulting from the previous year's growth-oriented economic stance will underpin the non-oil real GDP development, which had the potential to increase from 2.6% in 2018 to approximately 3% in 2020 (Aljarallah & Angus, 2020). On the other hand, inclusive growth will remain at around 1%, owing to oil production cuts in the light of the OPEC+ treaty. In the context of the Kuwait Vision 2035 strategic plan, ongoing government spending, robust buyer confidence, and a resilient project pipeline will uphold the non-oil growth of around 3.5% over the medium duration (Kuwait Times, 2019). Reforms have been inadequate due to some lawmakers' resistance in the parliament, which thus limits the administrative capability to undertake ambitious plans. Under the Kuwait National Development Plan (KNDP) of the Kuwait Vision 2035, the authorities have registered 20 international benchmark indices to mark the country's progress (New Kuwait Summit, 2019).

Despite the economic improvements, and the intention to transform Kuwait into a lucrative business and central hub, the Kuwait Vision 2035 does not address spending in the military sector. Moreover, the transformation of the military sector through innovative measures requires attention. On the other hand, although Kuwait has a well-established strategic relationship with the United States of America (USA) in terms of defence and security (Ibrahim, 2021), the small size of the country leads to a reliance on the USA and GCC countries (Biscop & Sassel, 2017). With innovation-deployment improvements to the Kuwaiti military sector lacking robust action, this study therefore represents a contribution towards identifying the need for innovation in the military sector of Kuwait.

### *1.2.3 The Need for Innovation*

In a quest to realise the Kuwait Vision 2035, it must undertake significant innovation in the various segments of the economy, as per the United Arab Emirates that was ranked as an innovation leader in the region in the 2021 Global Innovation Index (World Intellectual Property Organization, 2021). When considering the state machine, that is, the administrative arm of the apparatus in the numerous domains of state control, it is possible to frame the essential transformation plans that will permit the state to carry out its functions much more efficiently. Only then will the stakeholders of the Kuwait Vision 2035 arrive at the crucial understanding that this transition is fundamentally managerial. In addition, the horizontal and vertical nature of the change management of the central, state, and local bodies is not merely a superficial reform exercise (Government of the State of Kuwait & United Nations, 2019):

the Kuwait Vision 2035 is essentially calling for the large-scale transformation of all sectors of the economy to become a diversified world-class financial capital. To achieve this, Kuwait is required to undertake massive reforms to empower the private sector to make a viable and significant contribution—equal to the oil sector—to the future GDP.

To achieve this structural change, it is necessary to create a contemporary system of management while eliminating the bureaucracy that holds the entire system hostage, although Biygautane *et al*. (2016) highlighted the administrative and cultural challenges when conducting market-based reforms in oil-dependent Middle-East states such as Kuwait. At this stage, the government organisations of Kuwait are not able to facilitate the required processes, businesses, and people (Blom *et al*., 2010). Today, there are immense bureaucratic hurdles presented by the ministries and departments through an outdated system of rules and regulations (Department of State, n.d.). Consequently, the programmes and projects that emerge from these state institutions are regressive and not in the long-term economic interests. Therefore, the first requirement is to bring innovative transformation to the public sector so as to create a private sector free of bureaucratic constraints. Furthermore, Kuwait needs to realise that its rules of business are becoming redundant in the increasingly post-oil world. Henceforth, the initial stage is to craft a comprehensive plan of action to meet the requirements of the changing world—geo-economic realities—and undertake reorganisation, restructuring, and facilitation in terms of skills, knowledge, and funds (AME Data, 2019).

Active incorporation of entrepreneurship in the public sector will enhance the probability of flexibility, dynamism, and agility benefitting the Kuwaiti society at large. The systematic convergence of the public and private sectors can take Kuwait out of its current isolation, inefficiency, and one-dimensional economic constraints. However, barriers to entrepreneurship involve licensing delays, lack of talent, investment challenges, and slow customs clearance for imports/exports (OECD, 2021). In the fertile free market and exchange environment, internal and external public-sector partnerships with the private sector, along with a vibrantly engaged civil society should be encouraged in a participatory manner, particularly in the proposal and policy formulation stages. Linked to partnership is the networking that should occur with people and organisations that have common interests, and which should be freely articulated without power relationships. Stimulating this kind of work also means changing the form of the state's role.

In the closed culture of the Kuwaiti nation, it is of paramount importance to foster the framework of a free exchange of ideas and knowledge to gather accumulated information on exactly how to ensure the ease of doing business and attracting foreign and local investment in the form of long-term partnerships. In doing so, the other imperative features of innovation to be included in the public sector are knowledge management, enterprise resource planning, and information MI (Kuwait Voluntary National Review, 2019a).

The application of a multi-dimensional innovative and entrepreneurial management ethos will only gain traction and become efficacious, however, if it is balanced by a system of fair governmental support, rather than one of socio-economic control (Kleysen & Street, 2001). It is pertinent to note here that the culture of innovation at all levels of a society can only be fostered through the strategic multi-level engagement of all sectors of the economy. Moreover, the open discourse on innovation should be interactive, transparent, and empowered, with the purpose of ensuring the sustained entrenchment of strategic capacity within the public sector, which is necessary to unlock the potential of the private sector.

In this era of a globalised techno-economy, electronic government information services (EGIS) are progressively gaining ground in the pursuit of performance excellence in terms of delivering the necessities of both citizens and businesses in developed countries (Office of the Government Chief Information Officer, 2018). As a result, e-government advocates of developing countries such as Kuwait are pursuing the integration of simplified inner and outer exchanges and services. This demand for the strategic inter-operation of government agencies and their respective private-sector counterparts is through close partnerships for the adoption and implementation of EGIS across public departments (Office of the Government Chief Information Officer, 2018). In the context of Kuwait, the core purpose of advocating for e-government integration and inter-operation with the private sector has the potential to systematically propel the diversification of the economy under the Kuwait Vision 2035. Information management is the key component of contemporary innovation principles; however, information can be managed on multiple levels and in many ways, necessitating a multipronged approach to integration. Additionally, government organisations who participate in information-sharing operations tend to hold manifold interpretations of the significance of the information exchanged (Yang & Maxwell, 2011). Similarly, the implementation of these technologies is required at different levels of all segments of the Kuwait economy.

### *1.2.4 The Need for Managerial Innovation*

One of the greatest issues faced by Kuwait is the structural disparity between private- and public-sector employment. As the World Bank (2018, p. 22) observed, "oil rents are distributed through subsidies, transfers and public employment, with 80 percent of employed Kuwaiti nationals working in the public sector", with the Kuwait public sector one of the largest globally, responsible for "51 percent of GDP in 2016" (World Bank, 2018, p. 14).

To confront this systematic incongruity and propel the country in the direction of attaining the status of a cultural, commercial, and financial centre, the Kuwaiti government initiated a revised strategic plan in 2017 known as the New Kuwait Vision 2035. The strategic plan is based on seven pillars: global positioning, innovative human capital, operational civil service, sound infrastructure, universal healthcare, diversified economy, and a sustainable environment (New Kuwait Summit, 2019). The Kuwait Achievers for Future Opportunities (KAFO) is part of this strategy, with its mission of providing local and Kuwait-based achievers, specifically Kuwait youth, with a vehicle to demonstrate their skills and link them with openings in the private sector (KAFO, 2020). The Amiri Diwan initiative, developed in partnership with the Ministry of Youth, also seeks to inspire alliances among the country's talented youth achievers in order to foster a culture of knowledge sharing and transfer among all the people of Kuwait.

KAFO functions to offer assistance to the Kuwait Vision 2035 as an interactive youth body for the exchange of ideas and to identify talented adolescents who can be aligned with the various pillars of the initiative; for instance, in terms of human capital, the body is organising online courses with the aid of experts to offer learning materials that can develop soft skills (Blader & Tyler, 2003).

Under the Kuwait Vision 2035, the Kuwaiti government has undertaken the strategic task of stimulating developmental innovations in the public sector, and in particular the military sector. To achieve that, the national security establishment of Kuwait must allow access to the field of innovation in order for it to be assimilated into the national and regional security environment (Omar *et al.*, 2006). Furthermore, the institutionalisation of the paradigm of innovation is of the utmost importance, wherein the sustained accessibility to innovative knowledge- and technology-based military products and services is granted. The organised sites of innovative development are known as innovation habitats, with

contemporary technological parks offering a fertile environment to exchange knowledge and form multilateral connectivity amongst entrepreneurs to fuel comprehensive innovation across the full spectrum of the state (Kleysen & Street, 2001). Likewise, it is noted that these interactions may transform into the institutionalisation of the notion of Triple Helix, which is a demonstrative link between the leading members of the state, industry, and academia (SIA) (Martini *et al*., 2012).

For the technological parts to be functional at their optimal level, it is vital to ensure the sustained consolidation of segments of the entire state continuum based on strategic knowledge management, entrepreneurship, an engaged public sector, and military stakeholders. Given the aforementioned contextualisation of the subject, this study aims to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. As is established through the course of this study, the strategic nature of the investigation will culminate in the outlining of military innovation in line with the Kuwait Vision 2035. This will result in the fostering of a conducive environment for the development of the national defence–industrial complex. The Kuwait Vision 2035 does not address the steps or strategy for introducing innovative measures to transform the military sector**.** Nor does it discuss the innovative management of the military system, or refer to improvements of the military sector through innovative or technical means. Therefore, there is a significant need to forward a viable prototype of the governance infrastructure of organisational innovation for the Kuwaiti Army based on the nation's geo-strategic position in the context of regional security, the economy, and its regional and international alliances. In the light of this identified need, the present study seeks to investigate the potential for MI within the Kuwaiti Amiri Guard.

The innovation habitats offer a conducive environment and inducements for the entrepreneurial engagement required to produce innovative technological products. Moreover, innovation requires the alignment of the state, with the organisational focus on strategic knowledge management and the development of innovative products. Conversely, Czulda (2018) argued that sensitive technology parks involve organisations run by elite professionals who concentrate on the promotion of an innovation culture to generate specialised military knowledge to enhance the competitive advantage of military bodies. In doing so, these parks work towards the entrenchment of logistical, technical, and managerial infrastructure to aid the process of technological transfer, knowledge sharing, competitive enhancement, and value-added innovation creation.

### *1.2.5 Narratives of Managerial Innovation in Kuwait*

In Kuwait, public- and private-sector organisations must recognise the need to improve their businesses and institutional frameworks to develop imaginative approaches to support their presence and progression, due to the rapid diversification of global energy needs. With the advent of information and communication technologies (ICTs), the Kuwaiti private sector has an opportunity to transform the economy in a post-oil age through the support of government.

Through the lens of MI, every member of staff in an organisation is important to empower the process of innovation via the harvesting of individual intellectual capacities to help drive innovation. Numerous studies have been conducted to showcase the value of cultivating and developing the innovative capability of youth (Dimant & Tosato, 2018; Trantow *et al*., 2012;). Furthermore, in the techno-economy era, it is in the interests of developing countries such as Kuwait to foster a conductive environment for innovation at a large scale. The phenomenon of innovation has empowered developed nations with transformative skills to renew civilisations, cultures, and economies; rehabilitate businesses; and provide innovative approaches for generating and financing economic development across the world (Grimpe, 2017).

The focus of the strategic development plan under the Kuwait Vision 2035 is on the facilitation of a knowledge-based economy to create an environment of synergy amongst the educational institutions and industry leaders to encourage the smooth flow of strategic assets of knowledge. From this viewpoint, the government bodies need to establish technological knowledge parks in the vicinity of the educational and research centres, with an explicit aim of developing the infrastructure to support the technological experimentation and innovation. Therefore, it is imperative to craft the narrative of innovation at the governmental level in a bid to engage the society in entrepreneurial, technological, and innovation activities based on systematic exchange and synergy amongst the various components of innovation (Kim *et al*., 2016). The Kuwaiti government must produce innovation ecosystems to realise its targeted goals of the Kuwait Vision 2035 via the creation of state narratives for the collaboration of the institutional and cultural elements that appeal to the investment sensibility of entrepreneurs and financiers. Moreover, it is vital to establish knowledge-sharing centres (Al-Alawi & Al-Bassam, 2020), think tanks (GOVERN Center, 2020), smart cities (OECD, 2019), and science and technology parks (UN, 2018), amongst others.

The establishment of technology parks and smart cities with the assistance of national and local government, such as Silicon Valley in California and Route 128 in Massachusetts (locations where innovation has been implemented and practised within an innovation-positive environment), has shown tremendous success in bringing about tectonic shifts in all spheres of life (Saxenian, 1994). It is important to note that technological innovation is made possible by the engagement of three main actors: SIA. As an overview, Route 128 is the uniting agent of SIA, in particular at Harvard University and the Massachusetts Institute of Technology. Amongst the numerous aspects that led to the constellation of technology-based defence companies around Route 128, in addition to the presence of high-quality human capital, was the availability of venture capital (Otto *et al*., 2019). Therefore, in the context of the Kuwaiti military, it is pertinent to note that Route 128 originated in the constructs of innovation ecosystems via the connectivity of SIA, based on the Triple-Helix model to provide for the military's needs.

The current need to apply a new and efficient system of science, technology, and innovation is dependent on two strategic challenges: (i) the extant military system does not currently support the present generation of innovation in terms of the military transformation procedures; and (ii), the current model of the Kuwaiti Army places little emphasis on the evolving demands of the prevalent strategic security environment. In this regard, the current scenario features the misalignment of the strategic security demands and the influx of traditional defence products into the system stream. In addition, and considering the aforementioned economic state of strong oil dependency, Kuwait needs to drive the transformative modernisation to realise higher performance excellence and to reduce the technological gaps to enable enhanced national and regional security. In the pursuit of military strategic preparedness, the Kuwaiti government currently lacks focus on the innovative transformation of its military sector. Therefore, included in the Kuwait Vision 2035 is the need to develop creative human capital, a sustainable diversified economy, and strong progressive infrastructure (Mahdi, 2018).

To ease the dependency on external strategic knowledge, the Kuwaiti government must encourage investment in the national human capital. This should feature an explicit intention of increasing the internal innovation capacity to the extent that when immersed in scientific and technological advancement, it can provide support for the diversification of the economy as an emerging power on the global stage (Loschi *et al*., 2015). From the strategic

perspective, and as discussed above, scientific and technological independence is of paramount importance in realising greater sovereignty and enhanced operational capability in the Kuwaiti military.

### *1.2.6 The Importance of Governmental Innovation in Kuwait*

The directive of Kuwait's governmental body, the Supreme Council for Planning and Development (SCPD), is intended to guarantee that the Kuwait Vision 2035 is followed as envisioned by His Highness the Emir of Kuwait, and that it is achieved by 2035 to thus provide the state's strategic national development agenda, supervise its evolution and implementation, and rationalise the planning and development strategies (Abdul *et al*., 2018). The role of the SCPD is to enable and synchronise the planning and development procedures from the conceptualisation stage through to completion, which entails conducting wide-ranging research utilising high-quality data. The planning portfolio also concentrates on identifying goals, objectives, and pointers, and formulating strategic performance plans and timelines for implementation. At the same time, policy research is undertaken and carried out by national and international experts, as part of constructing empirically supported public plans and enabling cognisant decision-making procedures. At the same time, the national development planning is plotted in orientation with the Sustainable Development Agenda 2030 and the seventeen Global Sustainable Development Goals. Ultimately, the final roadmap of the national development plan is to be submitted to the SCPD for appraisal before it is deferred to the Council of Ministers that, in turn, will bring it to the National Assembly for approval (Kuwait Voluntary National Review, 2019b).

Kuwait's present model utilises an organic method for development planning. The model is a diversion from the top-down, government-focused conservative design to a more involved participatory approach that employs nearly all stakeholders: government bodies, the private sector, academia, and civil society. Fundamentally, the current model is human capital-centred. It influences the most maintainable resource—the human capital—in adopting an all-embracing approach to national development (Blader & Tyler, 2003). Certainly, the national planning ought to provide ownership to all stakeholders, thus engaging non-government bodies to participate in the process, share their views, have their voices heard, and their needs fulfilled.

According to Khaled Mahdi (2018), the Secretary-General of the SCPD, the most persistent challenge is that the majority of the domestic workforce are in the employment of the government. The second task is to fill the skill gap, namely the human capital and the fundamentally prevailing misalignment between the requirements of the labour market and the scholastic outcomes. In addition to the issue of corruption, there are numerous other problematic areas such as inefficient public administration practices, and the sluggish-to-absent digitalisation of public services.

The KNDP is essentially designed to transform the economy as per His Highness the Emir's Vision of a new Kuwait by 2035. The Kuwait Vision 2035 was conceptualised in 2006, founded on four dominant constituents and pronounced in 2010 as the very first five-year national plan. Essentially, the purpose of the KNDP is to recover Kuwait's principal role as a regional trading pivot by (i) shifting the government from the position of economic controller—in essence, a policymaker—to its rightful role as the regulator of economic undertakings, while empowering the private sector as one of the leaders in the country's economic development; and (ii) investing in and developing Kuwait's singular and institutional human capital that is capable of playing its part in the transition to a private-sector-led economy (New Kuwait Summit, 2019). To achieve this, the main goal is to build a diversified sustainable economy, which requires widespread modifications and adaptations to the present economic system to permit and empower the private sector to lead the drive towards diversifying economic activities, stimulating free enterprise, simplifying access to finance, and financing commercial and business projects.

The Kuwait Vision 2035 is founded upon the seven aforementioned pillars envisioned to define Kuwait's development and global position. A flagship of this development plan is the Silk City, which is projected to enclose five islands and nearly all of the northern region of Kuwait in a special economic zone (Rousseau, 2019). The region will act as a strategic trading and transit pivot, part of China's Silk Road Economic Belt and Road Initiative, and will have a special zone, airport, Olympic-size stadium, housing for 700,000 people, schools, public entertainment areas, and a central business district (De Freitas, 2019).

In the quest for innovation, Kuwait's privatisation model entails numerous innovative instruments for the public, rather than merely being a mechanism for the sale of state assets; for instance, one instrument calls on the private sector's operational management proficiency to run certain public-sector services. The case in point, Sheikh Jaber Hospital, will be

managed by a corporation that the government will inaugurate, called the Al-Enaya Hospital Management Company, to run the operations of the all-inclusive hospital (Williams & Wallace, 2017). Moreover, there are around 38 other public ventures that are being considered for denationalisation over the next two decades, most notably the Northern Shuaiba Power Station and Kuwait's landline, fibre optic, and digital subscriber line (DSL) services. The Supreme Council for Privatisation directs the state's privatisation plans, in the same vein that the Small and Medium-sized Enterprise National Fund is in control of SMEs, and the Kuwait Public–Private Partnership Authority is responsible for public–private partnership (PPP) operational projects (Williams & Wallace, 2017).

There is a broad range of prospects accessible in the system of PPP ventures, such as power stations, solid waste management plants, wastewater treatment, and so forth (PriceWaterhouseCoopers, 2015). The recent amendments to the law of privatisation enable a far-reaching understanding that is not restricted to the handover of assets, but encompasses the transfer of management and leasing. There are various types of privatisation, focusing primarily on the operational management of the health sector and the railroads. Essentially, the government builds the infrastructure, but the operations of the project will be managed by the private sector. Likewise, the private sector will be encouraged to finance and manage the Entertainment City project. In terms of the numerous other projects, the private sector will play a leadership role to foster a culture of entrepreneurship. In the Kuwait Vision 2035 strategic plan, private-sector organisations are not thought of as contractors, but rather as partners and investors. The investment companies are requested by the government to evaluate the PPP projects that are presented by the Kuwait Public–Private Partnership Authority, such as power stations and wastewater management (Aleisa & Alshayji, 2019). The national and international investors are invited to invest in the facilities management and operations in the healthcare sector and the petrochemical sector; for instance, the Al-Zour refinery, which is to be associated with a petrochemical plant.

To elaborate the Silk City project, it has three modules that are thought to be the key preconditions for the accomplishment of the Special Economic Zone or Northern Region project, known locally as Silk City: (i) the master plan, to determine the project's feasibility, zoning, and implementation; (ii) the financing model, to be constructed once the master plan has been finalised to allow the private sector to lead it via financing and management; and

(iii) the legislative guidelines, with an initial draft presented to the National Assembly (Rousseau, 2019).

Kuwait is a constitutional monarchy that identifies with its institutions. Under the Kuwait Vision 2035 strategic plan, human capital is the most important strategic pillar in the KNDP, which necessitates presenting educational reforms that can bridge the gap between the requirements of the labour market and the learning outcomes. The human capital pillar naturally encompasses the component of women's empowerment, the youth, and people with special needs. The rationale of the educational reforms is to move to a more science, technology, engineering, and mathematics (STEM)-based curriculum (Boisseau, 2019). The reforms in the area of education also seek to introduce an accreditation programme for schoolteachers in the private sector, and to ensure that the entire education system is populated by licensed instructors (AlQudsi-Ghabra *et al*., 2012).

The core aim of Kuwait is to progressively break from its dependency on crude oil as the principal stream of income, which can only be possible via diversification as an enabler. Moreover, moving forward with the denationalisation drive and growing the SME portfolio, along with consistent improvements in the ease of conducting business, should make financing or investing in mega projects appealing to national and international investors.

Associated with the purpose of this research, the formation of governance with technological innovation at the core is advocated as an innovative strategic approach. In this regard, Kuwait should work to foster a culture of collaborative governance as part of its PPP, for it is believed likely that coherent interactive relationships will be adopted between the numerous members of the SIA that are a crucial facet of the innovation ecosystems at the forefront of the strategic development plan proposed under the Kuwait Vision 2035. In a collaborative form of governance, it is vital to train up-and-coming young leaders and those professionals who should take the lead in the process of innovation (Iordanoglou *et al*., 2014). Through this, the collaboration can amalgamate as milieus that accumulate in the fundamentals of the defence system, academia, and industry.

#### *1.2.6.1 The Kuwaiti Ministry of Defense*

With a prominent position globally, the State of Kuwait enjoys good international relations. Nevertheless, the nation encountered a significant challenge in the late 20$^{th}$ century. Therefore, the State of Kuwait required the Kuwaiti Ministry of Defense to ensure that its

armed forces were robust and prepared to confront any future hostilities by developing the Kuwaiti infantry's combat capabilities, supplemented by advanced equipment and engaging in joint manoeuvres with friendly states (Ministry of Defense, n.d.). The Kuwaiti state seeks to preserve peace through justice and the Ministry of Defense. In terms of this military public-sector organisation, the achievement of peace and stability is through creating an educational, religious, social, and cultural environment, with the military personnel being trained and equipped based on advanced scientific approaches (Ministry of Defense, n.d.).

### *1.2.7 The Value of Exploring the Military Sector in Kuwait*

With an identified need of investigating the MI in public-sector organisations, the military can be considered as a significant government sector where the majority of the individuals are military personnel. This is opposed to the civilian management professionals found in the private or public sector, who manage the organisation under the military umbrella while performing managerial and military tasks.

Such a focus has the potential to illuminate the MI approach in this military domain, thus motivating the researcher to explore MI in this field by extracting the MI pillars established in the literature (human elements and intangible motives) to determine how these dynamics unfold in a military context; for example, the role of information systems/ICTs in MI, the potential to reduce the number of managerial tasks, and providing timely information to support the decision-making systems. The dependency of Kuwait on an oil-based economy has been a hurdle to its military sector (Cordesman & Al-Rodhan, 2006).

### *1.2.8 The Military as a Public-Sector Organisation*

Johnson (2020) defined the public sector as any entity owned and funded by the public, whereby in contrast to the efficiency needs of the private sector, there is a greater emphasis in the public sector on accountability, democracy, the public interest, and transparency. Moreover, those employees engaged in the public sector have a greater tendency to work for the national interest, since their ultimate employer is the government (Appleby, 1945). With the defence sector being heavily reliant on public funding (Sezal & Giumelli, 2022), and the public sector being the provider of essential services such as education, healthcare, housing, infrastructure, law enforcement, and the military (Breen *et al*., 2020), the defence sector in general and the military in particular are thus established as falling within the public-sector domain.

### *1.2.9 Overview of the Kuwaiti Amiri Guard*

Having equivalence to the Secret Service in the USA, the primary role of the Kuwaiti Amiri Guard is to protect the national heads of state (Jones, 2015). The Kuwaiti Amiri Guard, also equivalent to the "Royal Guards", is based on the Grenadier Guards, an iconic regiment that is one of the oldest in the British Army (British Army, n.d.). Sheikh Hamad Jaber Al-Ali Al-Sabah, the Minister of Defense and Deputy Prime Minister of Kuwait, asserted that the Kuwaiti Amiri Guard is unique in terms of its activity and distinction, representing an exceptional unit of the Kuwaiti Army that is required to maintain a high degree of readiness and performance, while conducting ongoing training and development (Kuwaiti News Agency, 2021).

The military structure of the Kuwait Army follows that of the British Army, and thus the ranking structure is similar (see Figure 1.2). Soldiers are referred to as non-officer ranks, which range from Private to First Warrant Officer or Regimental Sergeant Major, while the Second Lieutenant and higher are considered as officers in the ranking structure (Drummond, 2018).


**Figure 1.2: Military Rank Structure (Drummond, 2018)**

With the Kuwaiti Amiri Guard regiment responsible for military duties in terms of the heads of state, the role includes providing protection for the Emir and President of Kuwait

Sheikh Nawaf Al-Ahmad Al-Jaber Al-Sabah, the Crown Prince Mishal Al-Ahmad Al-Jaber Al-Sabah, and their VVIP (very, very important person) visitors through their deployment in the Amiri (Royal) Palaces and military base. According to Captain Jamal Al-Obaidi, the Kuwaiti Amiri Guard's tactical team leader, "It's an honor to safeguard our national leaders" (Jones, 2015). Besides providing security for the Emir of Kuwait, the Kuwaiti Amiri Guard additionally engages in training for special missions (Bunn, 2015). The USA and Kuwait have ongoing cooperation in regards to defence, such as the collaboration of techniques and tactics between the US Army's 1st Battalion, 68th Armor Regiment, and the Kuwaiti Amiri Guard (Jones, 2015). According to Major Mohammad Al Jareki, the training that occurs through such collaboration helps to improve the Kuwaiti Amiri Guard by breaking normal routines (Bunn, 2015). The USA provides Kuwait with technical support for defence and the military, while both nations cooperate through investment and trade agreements (Department of State, 2021).

In the US Army context, a Pew Research Center survey found that the proportion of enlisted women increased four-fold from 42,000 in 1973 to 167,000 in 2010 (Patten & Parker, 2011), while in 2013 the US Secretary of Defense Leon Panetta decided that women could serve in combat units (Vergun, 2013). In the Kuwaiti military context, a shift is also occurring, with Colonel Tariq Al-Sabr, Director of the Directorate-General of Mobilization, reporting that 200 female cadets would join the Kuwait Army: 50 women will serve in the armed forces medical services, while 150 will serve in the Kuwaiti Amiri Guard (Arab Times, 2021). According to the Defence Minister, Hamad Jaber Al-Ali Al-Sabah, it is now possible for women to join a range of military ranks, including as officers (The Express Tribune, 2022), with Major General Khaled Al-Kandari, the Deputy Chief of the General Staff of the Army, explaining:

> There are some fields in which women are necessary, such as medical and paramedical fields. Also, women inspectors are needed to work as Amiri guards at palaces and personal guards for delegations of women visiting Kuwait. In addition, they are important in the technical, engineering, electronics, air force, air defense and administrative fields as well.
>
> (Fattahova, 2021)

After exploring the research context in terms of Kuwait in general, and the Kuwaiti Amiri Guard in particular, as well as the importance of MI, the next section considers the need for MI in the military sector.

### 1.3 Managerial Innovation in the Military Sector

For centuries, there has been interrelation between technology and military practices to achieve victory. More recently, military innovation in the technology domain has received significant attention to achieve asymmetrical advantages against adversaries (Bendett *et al*., 2021). With militaries increasing employing ICTs, the result is organisations that are more connected (Saritas & Burmaoglu, 2017).

The British Army Chief of the General Staff, Sir Nick Carter, claimed the need to recruit young people because their technological skills make them well suited to 21st century warfare (Jamieson, 2017). Furthermore, in the current epoch of technological development, modern technologies have resulted in a high degree of interconnectedness (Cooke, 2019).

Nowadays, consideration of the Internet of Things (IoT) has signalled the emergence of smart technology through the integration of several applications or devices, as well as exchanging information among connected devices that offers added value to military operations in terms of intelligence, reconnaissance, supply chain logistics, surveillance, and urban operations (Tortonesi *et al*., 2016). Since information availability can be a life-or-death issue for soldiers in conflict, there is therefore a pressing need for technology and equipment that improves routing, processing, and communication (Mariani *et al*., 2015).

The IoT can be found in numerous areas of research including mobile, embedded systems, ad-hoc networks, wireless sensors, data analytics, cloud computing, and wearable computing, offering military applications to acquire valuable information (Tortonesi *et al*., 2016); for example, the capability of the army to understand, adapt, expect, and utilise such connectivity will be relevant to future battlefields (Internet of Battlefield Things) and offer increased competitive advantage (Popescu, 2019). According to Tortonesi *et al*. (2016), the number of *things* connected in the cloud is increasing in military operations to support tracking human performance, logistics and supply chain processes, and medical tracking. Along with the IoT, artificial intelligence (AI) is playing a critical role in improving the military-sector performance, such as offering robotic assistance in the battlefield, providing resilient obstacle avoidance for eliminating enemies, offering secure and fast logistical supply chain processes, health monitoring systems, replacing soldiers in the battlefield, and feeding intelligence for decision-making (Bistron & Piotrowski, 2021; Gotarane & Raskar, 2019; Reis *et al*., 2021).

### *1.3.1 Technology and Human Performance*

The concept of war has changed dramatically from traditional battles. Modern conflicts are based on information and the main operations are often complex due to urban settings (Headquarters Department of the Army, 2006). Furthermore, the soldiers' battlefield perspective has been broadened through the use of sensors and computers, with increased potential for the command and control of munitions that can be precision guided (Saritas & Burmaoglu, 2017).

The technological response to these challenges is the Internet of Military Things (IoMT) (Suciu, 2021), with military and aerospace experts adopting the latest wearable devices to improve efficiency (Howard, 2015). For example, the Canadian Armed Forces are connecting mobile ad-hoc networks with SMART glass head-up displays and linking this with smartphones for scattered operations. Significantly, International Data Corp (IDC) analysts estimated that 72.1 million wearable devices were shipped in 2015, compared to 26.4 million such devices the previous year (Howard, 2015).

Ramon Llamas, wearables research manager at the IDC, reported that wearable devices are providing improved user interfaces and applications, while the US Department of Defence is exploring investment in wearable computing systems in the battlefield (Howard, 2015). Moreover, as part of its exoskeleton evaluation programme, the U.S. Army Research, Development and Engineering Command Soldier Center is analysing current and emerging exoskeleton products to provide soldiers with increased mobility and stamina (Solider Center Public Affairs, 2018).

According to Bryce (2016), the US Army invested $80 million to develop a smart uniform called a Tactical Assault Light Operator Suit. There are many justifications for utilising wearable devices on the battlefield, such as enabling robust sensor networks for each military unit to track and evaluate the current situation for each soldier by acquiring the acquired data from physiological sensors that provide body temperature, blast effects, heart rate, and respiration rate (Howard, 2015).

Gotarane and Raskar (2019) discussed the deployment of the IoMT for improving human performance through advanced methods of object detection used for enemy elimination, smart city applications for disaster scenarios, and inter-device communication on the battlefield. A recent study considering the role of technology for enhancing military

competitiveness in warfare was carried out by Bistron and Piotrowski (2021). The study focused on solving the problems faced by the military, where object detection and robotics can be applied for improving human performance. The use of AI was identified for creating advanced object detection to avoid obstacles and thereby improvise human performance in warfare. On the other hand, a study by Reis *et al*. (2021) discussed the development of a decision-making AI system. The study proposed three modes of system: (i) mechanical intelligence (with no human involvement for decision-making), (ii) thinking intelligence (allowing some human control for decision-making), and (iii) feeling intelligence (allowing the involvement of human control for decision-making when needed). The third mode of intelligence system was identified as the preferred approach for improving human performance in military decision-making.

### *1.3.2 Technology in Military Logistics*

Modern wars involve both information exchange and strategic plans. Therefore, warfare relies on information transmission in battlefield operations that creates a critical network requiring a massive need for exchange, communication, identification, surveillance, localisation, control, and management (Zhang *et al*., 2012). IoT technology is shaping military logistics support into a new era through integrated technologies such as radio-frequency identification (RFID). This approach has developed command and control systems by utilising the IoMT in logistics to support visualisation with weapons and equipment management that connects and coordinates the demand and response in real time (Zhang *et al*., 2012). According to Martin *et al*. (2020), establishing a military logistics supply chain platform and merging it with the IoT and 5G bandwidths will enable the real-time monitoring of supplies from the point of manufacture to the battlefield, thus improving decision-making processes through increased responsiveness and agility.

The IoT plays a role in command-and-control systems in military logistical support that depends on information flow and integrated systems that build vertical connectivity and horizontal integration by effectively linking warehouses, individuals, and transportation networks. Such connectivity is based on RFID technology, sensors, cameras, and global positioning systems that work by collecting information from the units in the combat and storage units like reserve and consumption, ammunition and equipment status, traffic, and environmental conditions (Zhang *et al*., 2012). Information will also be forwarded to a data-

processing centre in the headquarters that includes a military network, machine-to-machine wireless, wireless local area networks (WLANs), and a navigation satellite. Then, it will be converted into intelligence information through data mining and cloud computing. After that, the commanders at each level can organise, command, and control in real time and make informed decisions (Zhang *et al*., 2012).

A study by Kim and Laskowski (2018) presented a model deploying the advanced technology of the IoT and smart contracts (i.e., pieces of software that can self-execute based on a pre-determined condition). This supports the persistency, auditability, anonymity, and decentralisation of logistics supply chains, and thus enhances security for military applications. On the other hand, to improve the reliability and safety of supply chains, Sobb *et al*. (2020) proposed the Military Supply Chain Cyber Implications Model that combines cybersecurity and logistics. Then, a recent study by Bistron and Piotrowski (2021) discussed the deployment of the IoT to reduce the logistics' response time and improve the speed of actions.

### *1.3.3 Technology in Medical Care for Soldiers*

Due to the high likelihood of injury and evacuation, military physicians will encounter severe cases, under pressure, and in different situations. Therefore, there is a definite need to recognise the health status and injury level of soldiers before reaching the hospital, which can be achieved by merging IoT technologies and advances in Health Information Technology (HIT) to improve healthcare through different connected devices on the battlefield and in the headquarters that increase information-sharing and facilitate data-driven decisions (Gondalia *et al*., 2018).

The IoT has enabled HIT to improve monitoring through self-powered biosensors that track sleep and other activities, with sensors incorporated into the military uniform (Gondalia *et al*., 2018). Point-of-care biosensors can reduce the time and effort doctors and nurses require for diagnosis (Vasan *et al*., 2013), while wireless body area networks can alert medical staff to soldiers' health status and location when injuries have occurred during missions (Kang *et al*., 2020). Gotarane and Raskar (2019) discussed the use of the IoT with sensors for monitoring soldiers' health and providing health status updates. Another means of supporting the safety of soldiers' health in warfare is through the introduction of robots (Bistron & Piotrowski, 2021), which can work with intelligent systems to perform human

actions such as obstacle avoidance and enemy elimination. Furthermore, AI systems with feeling intelligence can be deployed for making battlefield decisions that also allow for human involvement, where necessary (Reis *et al.*, 2021).

### *1.3.4 Challenges*

The characteristic of the internet itself is a challenge due to the issue of availability on the battlefield, the massive storage requirements, and the specialised networks needed for military purposes, as well as the time necessary for installation and administration, and the need for the electronic and physical security of such devices (Seng, 2016). In addition, there are security and complexity challenges in IoT systems as the connected devices are typically small in size, thus limiting their memory capacity and the ability to employ a computing platform that offers complex security algorithms (Cisco Systems, n.d.). Therefore, in defence systems, the complexity is high, leading to the high costs necessary to retain this technology in service (Parkinson, 2015). On the other hand, the security concerns, the societal response to mechanical intelligence, and concerns of human feelings while using robotics in the battlefield represent challenges to deploying advanced technology in the military sector (Bistron & Piotrowski, 2021; Gotarane & Raskar, 2019), even though the deployment of cybersecurity with logistics can reduce the risk of insecurity in the supply chain (Gotarane & Raskar, 2019). Stephen Hawking's observations on the challenges of deploying AI for military purposes are worthy of consideration: "the creation of powerful artificial intelligence will be 'either the best, or the worst thing, ever to happen to humanity'" (Hern, 2016). Essentially, IoT applications with the assurance of security, capability to deal with technical faults, and error-free performance on the battlefield will need to be proven. Therefore, the military sector will need to benefit from the advantages of IoT technologies and consider the security challenges by ensuring that the technology is valid for military practices.

The Kuwaiti Amiri Guard has implemented certain intelligent technology, such as access control security systems for the Amiri Palaces, and more general surveillance and control, thus demonstrating the organisation's willingness to adopt technology to improve its operations. However, in the light of the extensive possibilities discussed in this section through the emergence of the IoMT, RFID, HIT, and AI, clearly there is considerable scope to modernise into a cutting-edge military organisation by engaging with the technologies emerging in the sector.

## 1.4 Activity Theory

Considering the context of technology deployment and implementation if innovation is practised in the military sector, the realisation of the organisational setting is required. This realisation is achieved through an exploration of the organisational activities that occur under the procedural setting, the deployed tools, and the individual's role in carrying out the activities. To understand and explore this concept, the application of activity theory provides a holistic and context-based approach to support research in the interpretative and qualitative domains, and particularly where the participants, their aims, and tools are undergoing continual change (Hashim & Jones, 2017). Activity theory is grounded in psychology, was developed by Lee Vygotsky, Alexander Luria, and Aleksei Leontiev, and focuses on awareness and activity (Sawyer, 2014). The theory emerged from a field trial to explain the relationship and the interaction between human beings and a motive or purpose (Yamazumi, 2006). Activity theory is considered a theory through the common understanding and the interpretation of the term (Karanasios & Allen, 2013).

## 1.5 Rationale for the Research

This study is necessary to contribute to the research on MI in public-sector military organisations since there is limited understanding of how organisational and social factors influence army personnel behaviours, with the National Academy of Sciences (2014) encouraging exploration in this field. Moreover, to date, no investigations have been conducted that explore the Kuwaiti Amiri Guard as a military organisation, despite the Kuwait Vision 2035's focus on the need to develop creative human capital, a sustainable diversified economy, and strong progressive infrastructure (Mahdi, 2018). Moreover, due to the lack of robust innovation-deployment improvements to the Kuwaiti military sector, research is needed to identify the implementation of innovation in the Kuwaiti Amiri Guard.

With the researcher's access, this study offers an opportunity to shed light on the Kuwaiti Amiri Guard and to provide insight for the body of knowledge on MI in a public-sector military organisation in the Middle East. Furthermore, with Isik (2018) identifying the importance of innovation as an economic driver to propel Kuwait into a post-oil state that can compete more effectively with its regional peers and fulfil the potential of the Kuwait Vision 2035, this study can help to promote the embedding of knowledge management, enterprise resource planning, and information MI (Kuwait Voluntary National Review, 2019a) in the

target organisation, while offering resources for other military and public-sector organisations in similar contexts in the region. With activity theory able to function as a lens to improve our understanding of innovation management in public institutions (Allen & Karanasios, 2011; Jussila *et al*., 2019; Karanasios & Allen, 2013), engaging with this theory thus has the potential to offer valuable insight into the current and possible MI implementation in the Kuwaiti Amiri Guard as the proposed organisation of focus in this research.

## 1.6 Aim and Objectives

The main aim of this research is to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard.

The research contribution is through conducting primary research on a military MI activity system in the Gulf region in general, and in Kuwait specifically.

To fulfil the research aim, the following objectives are established:

1) To conduct a systematic literature review to inform the development of a framework that can realise MI in view of activity theory
2) To investigate the activities of MI by the departments of the Kuwaiti Amiri Guard through conducting semi-structured interviews
3) To understand the interactions of the managerial activities carried out by the Kuwaiti Amiri Guard through the case study
4) To explore how activity theory can be utilised to frame the mechanism of MI in the departments of the Kuwaiti Amiri Guard, and to understand the interaction of the administrative activities
5) To evaluate the Kuwaiti Amiri Guard Theoretical MI Framework in terms of the pillars of MI and develop a roadmap to actualise MI activities in the Kuwaiti Amiri Guard departments

## 1.7 Research Questions

To help to achieve the research aim and objectives, the following research questions are established to guide the study:

RQ1: What are the mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard?

RQ2: How can ICTs enhance the MI in the Kuwaiti Amiri Guard?

RQ3: To what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard?

## 1.8 Thesis Structure

This thesis is structured as follows:

**Chapter 2** presents a systematic literature review that elaborates on MI and its definitions, while investigating and determining the building blocks of MI. MI is explored in both the public- and private-sector contexts, while the innovation tools and practices not yet treated as MI are considered. The chapter identifies the research gaps in the building blocks of MI, conducts a critical evaluation of MI theories, and addresses and conceptualises the research gap.

**Chapter 3** proposes a conceptual framework for the study based on activity theory to function as a lens for MI activities in the Kuwaiti Amiri Guard.

**Chapter 4** introduces the research methodology and design undertaken in this study, while providing justification for the selected philosophy, approach, strategy, and design. The sampling strategy is discussed, as well as the data collection and analysis methods. Finally, the ethics. validity, and reliability of the research are addressed.

**Chapter 5** features the case study coding, where the qualitative interview data are organised into codes and categories to enable the analysis to take place.

**Chapter 6** provides the analysis of the case study and the findings that emerged from the data collected from semi-structured interviews with participants from the Kuwaiti Amiri Guard.

**Chapter 7** presents a reflective discussion based on the findings emerging from the analysis of the interviews carried out in Chapter 6, and the systematic literature review conducted in Chapter 2.

**Chapter 8** concludes the research by confirming how the research aim and objectives have been achieved, and the research questions answered. The internal and external

validation of the developed MI framework are described, with the theoretical and methodological contributions of the research presented, as well as the recommendations, limitations, and opportunities for future work.

## 1.9 Chapter Summary

This chapter provided the grounds for the need to conduct research on the phenomenon of military MI. First, the background to the study was presented, followed by the consideration of innovation in the military sector. From this, the research aim, research objectives, and research questions emerged. The study context of Kuwait was explored in terms of the Kuwait Vision 2035, the need to diversify from reliance on fossil fuel extraction, and thus the need for MI by managing, planning, designing, compiling, and directing the applications of innovation within the organisational context. It was found that while MI is frequently and sufficiently addressed in the private sector, there is a lack of such focus on MI in the public sector. Kuwait's economy was found to be primarily reliant upon the oil and gas industries, while lacking the application of MI in its public-sector organisations. Yet, the importance of innovation at the current time requires the Kuwaiti public sector to foster a strategic MI approach within the sphere of its public-sector organisations, with the Kuwait Vision 2035 reflecting this ideation. Since the military has significant importance as a sector within the public domain in Kuwait, the Kuwaiti Amiri Guard was selected as the case study for this research, with a rationale provided for its selection and the importance of the research.

The next chapter proceeds to explore the literature of MI through a systematic literature review.

# Chapter 2
# Systematic Review of Managerial Innovation

## 2.1 Introduction

This chapter conducts a systematic literature review into MI. The review incorporates MI practised in both the public sector and private sector from different perspectives, while considering the organisational and system of activities through the four elements of MI, whereby the *subjects*, *objects*, and *tools* interact through managerial processes that formulate the final *outcomes* of MI. MI is then conceptualised in terms of the most frequent theories adopted in the MI literature, namely, innovation diffusion theory, open innovation theory, and inclusive innovation theory. The chapter explores the different meanings and MI tools that have been addressed in the innovation literature, but not in significant public-sector organisations such as the military.

### *2.1.1 Logical Diagram of the Literature Review*

The diagram below in Figure 2.1 presents a visual representation of the literature review.

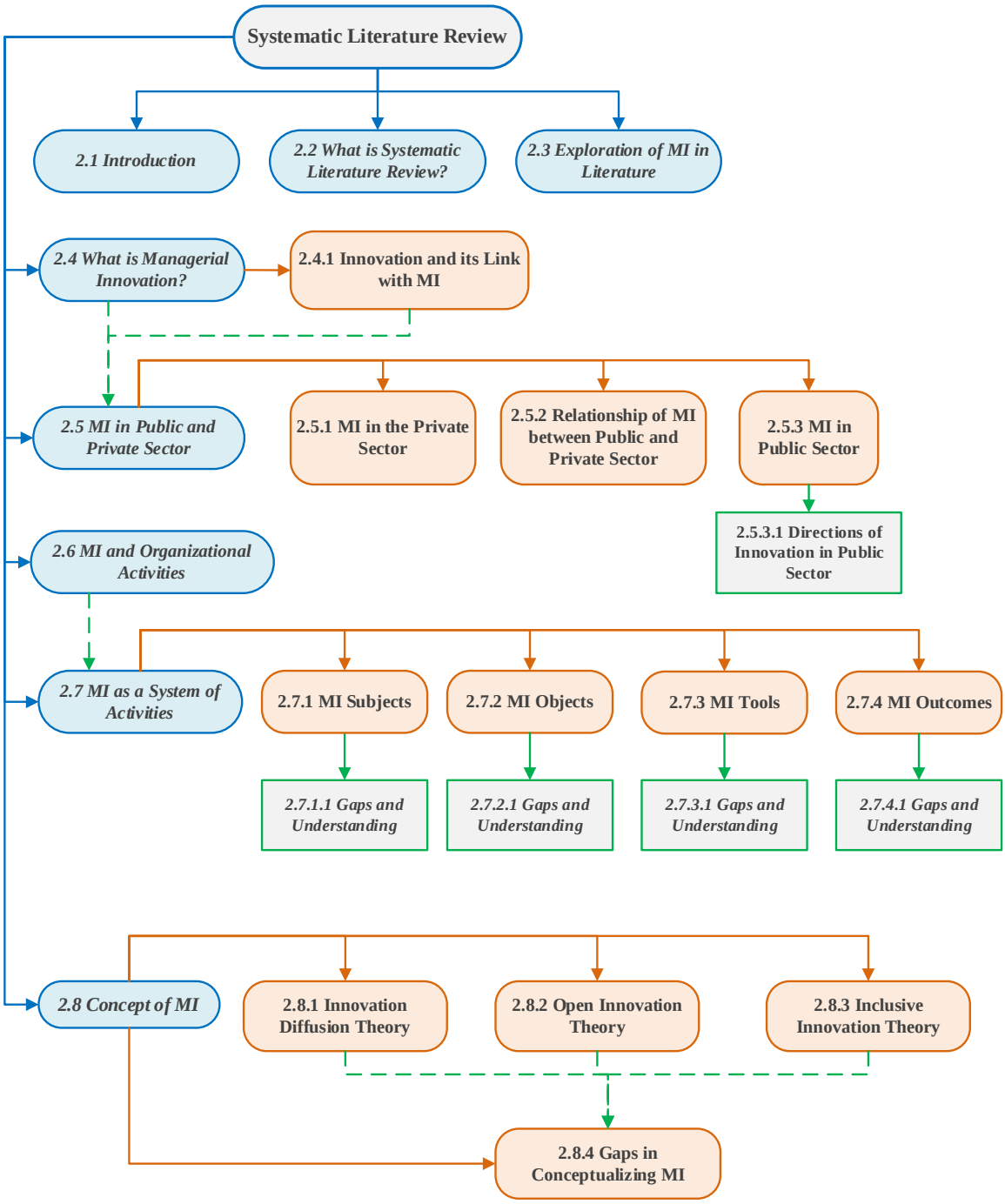



**Figure 2.1: Logical Diagram of the Literature Review**

## 2.2 What is a Systematic Literature Review?

In this study, a systematic literature review is conducted to clarify the importance of embedding MI in the public sector (e.g., for military management or managerial purposes), as well as the role of technology and MI concepts. The systematic literature review has been chosen because it is highly effective at reviewing the existing literature, which is one of the

main criteria of this study that will help to explore the topic of interest. This type of review enables a systematic search for the identification, selection, evaluation, and assembly of relevant evidence to respond to the research questions and the research area using a valid methodology that is reproducible and explicit, and minimises the bias. In addition, systematic reviews represent the best evidence in terms of the research source (Majumder, 2015).

The systematic literature review is more comprehensive than a typical literature review because it includes both published and unpublished literature, also known as *grey literature*. This is a significant part of the systematic literature review that adds additional value to the literature review and encourages the optimum utilisation of new papers, research, and thoughts. Moreover, grey literature tends to be more present and current than other published literature.

There are different types of systematic literature review:

- Qualitative: containing the results of related studies that are summarised regarding the outcomes of interest, and does not include any statistical data.
- Quantitative: where the results rely on statistical methods to combine or compare the results of related studies.
- Meta-analysis: including statistical methods, where the results are integrated into the estimations of the impact from other independent but related or similar studies, with the outcomes summarised.

(Majumder, 2015)

### 2.3 Review of the Terminology to Frame Managerial Innovation

To capture alternative terminologies of MI concepts/elements, this research utilises two databases: Business Source Premier (to explore academic articles and corporate publications) and the Web of Science (to develop citation analytics and extract the core elements/criteria). The selection of these databases was because they are widely used in the literature, as well as being considered resources significant in the field. For example, Business Source Premier features over 2,200 business journals, as well as market research, industry, and country reports (Electronic Information for Libraries, n.d.), while The Web of Science is the world's leading scientific citation search and analytical information platform (Li *et al.*, 2018). The keywords used were "managerial innovation", "management

innovation", and "administrative innovation". The search results were narrowed down to include published work during the last ten years.

The initial screening showed that some papers present the word *managerial* separately from the word *innovation*, but refer to the terms *managerial innovation*, *firm innovation*, and *organisational innovation* in their discussion and conclusion sections. Practical examples and testimonies of MI were found in only eight magazines, ten corporate publications, and two newspapers, due to the relevance of the numerical evidence and narratives.

The review outcomes highlighted a wide variety of search fields where MI was evidenced (see Table 2.1). However, the researcher selected the business and management discipline, and the *Association of Business Schools* (ABS) journal ranking was followed to select 4* and 3* articles to signify the theoretical and future contribution gaps within the business and management domain. Despite the strong theoretical orientation of these top journals, the review results lacked any theorisation/conceptualisation of MI, aside from the technological determinism of digital innovation. Therefore, the manner in which innovation activities take place across organisational structure, processes, and policies to add value to organisational performance remains limited (Anzola-Román *et al*., 2018).

**Table 2.1: Discipline's Web of Science Search Results for "Managerial Innovation"**

| Field | Record count | % of 51 |
|---|---|---|
| Business Economics | 48 | 94.1% |
| Engineering | 19 | 37.2% |
| Computer Science | 11 | 21.6% |
| Environmental Sciences Ecology | 10 | 19.6% |
| Mathematics | 5 | 9.8% |
| Social Issues | 5 | 9.8% |
| Public Administration | 4 | 7.8% |
| Energy Fuels | 3 | 5.9% |
| Geography | 3 | 5.9% |
| Psychology | 3 | 5.9% |
| Science Technology - Other Topics | 3 | 5.9% |
| Information Science & Library Science | 2 | 3.9% |
| Mathematical Computational Biology | 2 | 3.9% |
| Operations Research Management Science | 2 | 3.9% |
| Agriculture | 1 | 1.9% |
| Biodiversity Conservation | 1 | 1.9% |
| Biotechnology Microbiology | 1 | 1.9% |
| Fisheries | 1 | 1.9% |

| | | |
|---|---|---|
| Food Science Technology | 1 | 1.9% |
| Forestry | 1 | 1.9% |
| Government Law | 1 | 1.9% |
| Pharmacology Pharmacy | 1 | 1.9% |
| Social Sciences - Other Topics | 1 | 1.9% |
| Toxicology | 1 | 1.9% |
| Urban Studies | 1 | 1.9% |

The concept of MI still did not appear commonly as one phrase/term. The ABS journals' list included highly ranked journals titled as *Managerial Science*, *Managerial Finance*, *Managerial Psychology*, *Managerial and Financial Accounting*, *Managerial Auditing*, and *Managerial and Decision Economics*, with no journal addressing MI in terms of its broad meaning, tools, and theorisation. Therefore, the scope of these journals was not a venue for MI research and the researcher had to eliminate them from his review. Evidence of MI cases and definitions was found in the following top innovation journals:

- *Journal of Product Innovation Management*
- *Research Policy*

This study thus navigates within these high-quality sources to extract the core elements, parameters, tools, and environment of MI, and to create a theoretical MI framework.

A total of 1,319 articles were filtered from the *Journal of Product Innovation Management* to include only those published from January 2018 onwards to address the latest intimacy between the two areas. The result was 45 articles that mapped three industries: automotive, telecommunications, and transportation and logistics. These papers underscore the core principles for MI, such as stakeholder management improving the quality of organisational engagement within innovative communication and reducing the complexity of interactional tasks (Juntunen *et al*., 2018). The stakeholders addressed were end-users, middle managers, research and development (R&D) teams, and government (Schweitzer *et al*., 2018). Using technological products to enhance managers' ability to innovate new communication strategies and market penetration was also covered by Ko and Liu (2019).

Pollok *et al*. (2019) addressed other factors of MI around organisational roles, the institutionalisation of knowledge processes, managers' informal organisational practices, and technology use through crowdsourcing. In fact, various studies that examined

competitiveness in corporations conclude that rather than through optimising manufacturing, acquiring a greater competitive advantage could be achieved by innovative processes that can facilitate and increase speed in the management of firms (Griffin *et al*., 2019).

According to Sjödin *et al*. (2019), managers have appreciative capacity of external knowledge and convert it into internal knowledge through securing available resources that promote the integration and implementation of new practices. Sjodin and colleagues surveyed 410 firms in the software manufacturing industry and identified the need for continuous managerial development to enhance their strategies for product-oriented services. Technological uncertainty is another driver for MI in manufacturing corporations (Visnjic *et al*., 2019). The above-mentioned discussion underscores the importance of MI and its autonomous use with strategy, product development, and technological advances. This has been addressed at the firm, project, team, and individual levels. There is a clear linkage between the stakeholders (actors), the technical and managerial capabilities (tools), and the transformation process and the organisational vision (outcomes) (Camisón-Haba *et al*., 2019).

The second exploration was in the *Research Policy* journal to extract the concepts, tools, actors, and outcomes of MI in the corporate field. The keyword used in the search was "managerial innovation", which returned 80 results that were reduced to eight items published during the 2018–2020 period, as per the first exploration. This was to map the most contemporary associations between the concepts of "managerial" and "innovation".

Arundel *et al*. (2019) referred to policy making, capability building, strategy design, and performance management as key managerial practices where innovation plays an important role, while Crescenzi and Gagliardi (2018) confirmed that MI's performance in organisations is dynamic, with an impact on the surrounding environment and moderated by individuals' competencies. Fonseca *et al*. (2019) described MI as an element of a firm's competitive advantage and highlighted the concept of digital innovation.

Giannopoulou *et al*. (2019) underscored the rise of innovation incubators that offer financial and administrative partnerships between corporations, technology developers, and universities to enrich knowledge-intense industries with resources and managerial practices, and increase the GDP. Adding to this phenomenon, Hussinger *et al*. (2018) indicated that such incubators enhance radical technological changes and enhance their adoption in knowledge-intense firms. They referred to a new environment for MI and its impact on the

firm's competitiveness and long-term survival (Morris, 2018). A survey conducted by the European Community Innovation Surveys was cited by Wadho and Chaudhry (2018) to justify the ongoing need for research on how MI arises and to identify its processes, mechanisms, strategies, and the overall impact on a firm's performance. Lack of understanding of MI as a system usually leads to information ambiguity, the mismanagement of firm's assets and capabilities, organisational resistance, and failure (Hussinger & Pacher, 2019). Aiming to fill this gap, Chapter 3 proposes a conceptual framework that could be utilised to build MI systems in corporations and public institutions that perform similar commercial and industrial activities (e.g., the military). The following topics are explored while formulating the ground of this research based on the systematic literature review pattern.

## 2.4 What is Managerial Innovation?

The concept of MI presented in this research is synonymous with organisational, administrative, and firm innovation. It represents new organisational structures, new administrative systems, modern practices in management, processes, and adoptable techniques that might create value for firms; for example, the non-traditional implementation of total quality management, the quality circle, just-in-time production, and cost accounting (Damanpour & Aravind, 2012). Furthermore, different examples of utilising innovation to add managerial value for the organisations have been included. Through their examination of MI's antecedents, conceptual development, generation and adoption, and influence on organisational behaviour, Damanpour and Aravind (2012) sought to increase the understanding of MI and extend the theory on organisational outcomes and innovation processes.

### *2.4.1 Definition of Innovation and its Link with Managerial Innovation*

Schumpeter defined innovation as a phenomenon that impacts on societies, organisations, projects, and individuals (Hansen & Wakonen, 1997). He referred to the modernity aspect that creatively adds outcomes to quality improvement processes, to the provision of new goods or products, or to the new conciliation methods of existing products and services (Crossan & Apaydin, 2010). Therefore, the determination is to extract the needs and innovation related to developing production, services, and processes. However, Schumpeter only determined innovation within firms, by focusing on products, services, and

processes, while ignoring business model innovation and innovation ecosystems (Crossan & Apaydin, 2010). There are different typologies of MI such as administrative innovation, organisational innovation, technological innovation, and management innovation (Damanpour & Aravind, 2012). Administrative innovation refers to the more efficient and effective means of applying service provision policies, with Teece (1980) examining administrative innovation in large industrial firms through an elementary deterministic model frequently used to highlight technological innovation diffusion, where it was found that the study of technological innovation offers insights in the domain of administrative innovation. Organisational innovation typically refers to the adoption or creation of a novel knowledge-based behaviour or ideas within an organisation that is transformative in nature (Lam, 2006). Then, technological innovation refers to those innovations that lead to organisational change through the adoption of technological tools (e.g., equipment, methods, processes, systems, or techniques) (Subramanian & Nilakanta, 1996). MI has been developed by organisational behaviourists to refer to radical organisational changes and transformation in organisational processes, policies, and practices (Lin *et al*., 2017). Yet, there is no commonly agreed definition or clear understanding of MI (Basile & Faraci, 2015; Damanpour *et al*., 2018). Accordingly, this research attempts to offer a systemic view of MI and build an initial conceptual framework to facilitate researchers in understanding the perceptions of managers in terms of how this type of innovation is performed. The review results also highlight the accelerating gap between the private sector and military sector in regard to understanding and practising MI (Shultz, 2016). Therefore, this research will propose activity theory as a lens for viewing MI based on the subjects, objects, and tools of MI in a Kuwaiti military organisation as the first attempt in the relevant domain, since there is a paucity of understanding in terms of how organisational and social factors influence the behaviours of army personnel, with efforts encouraged to explore this field (National Academy of Sciences, 2014).

## 2.5 Managerial Innovation in the Private Sector and the Public Sector

### *2.5.1 Managerial Innovation in the Private Sector*

The concept of MI in the private sector underscores a relatable approach to innovation functions, with entrepreneurship considered to be the main driver (UN, 2017). Moreover, by considering the history of innovation it is evidenced that the private sector is the origin for the

various innovation techniques, driven by entrepreneurial action (UN, 2017). The basic perception of innovation in the private sector is linked to the process of creativity, which is obtained by enabling people to practise their ideas freely and to carry out certain processes that are aimed at achieving economic prosperity and sustainable growth in a private organisation. The concept of innovation in the private sector as presented by Schumpeter (1934, as cited in UN, 2017) focuses on the role of entrepreneurs, who are considered as the pioneers and fundamentals of innovation in the private sector. Moreover, while evaluating the approach for innovation in the private sector, a set of definitions is explored (Cankar & Petkovsek, 2013) such as the implementation of a strategy that leads to the production of improved goods or services, designing a new process, a new method for marketing products, a new approach to manage organisational activities, and managing the external and internal environment of an organisation with an improved strategy (Dutta *et al*., 2017). Furthermore, the definition of innovation in the private sector includes the deployment of technology, tools and techniques for the production of improved products, inclusive of the implications of complex ideas, whereby the society, markets, and government's acceptance influence the success of the proposed idea (Cankar & Petkovsek, 2013). Innovation is also identified as a mandatory factor for competitiveness and development in the era of the knowledge-driven economy—that is, those economies that are directly reliant on producing, distributing, and using knowledge (Hidalgo, 2004)—which constitutes the dependency on the deployment of knowledge and information, and its application in business management strategies, involving a sustainable supply chain process (Stošić *et al*., 2012). Therefore, conventional management approaches are replaced by innovation that utilises novel approaches through innovative techniques that are grounded in systems oriented towards knowledge.

On the other hand, since the development of technology has significantly impacted the business structure of various organisations, the requirement of knowledge-driven management in terms of innovation practices is a mandatory requirement for the success of a business in the private sector (Milutinovic & Stosic, 2013). Moreover, the deployment of innovation in the private sector is a viable approach for driving economic growth (Milutinovic & Stosic, 2013; Tidd & Bessant, 2009). Milutinovic and Stosic (2013) explored service innovation as a key economic growth driver due to the large volume of personnel employed in the sector, where it was found that successful service innovation is reliant upon innovation projects, with the study placing particular focus on the elements that impact on new service development models and projects.

### *2.5.2 Extrapolating the Relationship of Managerial Innovation in Private- and Public-Sector Organisations*

The concept of innovation in the public sector has similarities and differences when extrapolating its relationship with innovation activities in the private sector. In this context, a recent study by Modara *et al*. (2020) investigated the collaboration of the private sector with government services to explore the role of innovation activities in contributing to the economic development of Bahrain in terms of the knowledge economy. The researchers employed a qualitative methodology that comprised of the case study of multiple units with primary data gathered through individual interviews (n=22) and focus groups (n=3). The study found promising signs of an emerging knowledge-based economy driven by the private sector, with an identified need for the government to perform a more prominent role in the promotion, facilitation, and incentivisation of innovative developments and processes. The study therefore proposed the tangible support of private-sector innovation in an economy to facilitate economic progression. On the other hand, innovation in the public sector is making a case for sustaining competency in the quality of services. As investigated in a study by Cankar and Petkovsek (2013), public-sector innovation is primarily dependent upon specific factors such as the challenges from society, and compliance with new policies and regulations. The concept of public-sector innovation primarily enables the sourcing of radical solutions during periods of economic crisis. The concept of public-sector innovation proposes certain synergies, commonalities, and differences, such as the decision-making processes in the public sector being obstructive, time-consuming, and risk-averse when compared to private-sector innovation management. For instance, Cankar and Petkovsek (2013) emphasised the importance of when, where, and how to consider engaging the private sector with the public sector to ensure that skills, expertise, and trends of innovation can be incorporated to facilitate improvements. Yet, a report by the European Commission (2013) seeking to develop a novel policy framework for the European public sector, established on a foundation of the effective use of public funds and institutional innovation, identified common and broad challenges to public-sector innovation, highlighting the internal factors such as public administration, the organisation of public services, and the framed restrictions designed for the operation of government. Moreover, the findings emphasised the management tools for innovation activities, suggesting similarities between public-sector and private-sector organisations whereby the innovation management tools deployed in the private sector are useful for structuring innovation activities in the public sector (European

Commission, 2013). However, the challenges for public-sector innovation involve the complexity of the organisational structure, as it is influenced by the societal challenges of an ageing population. Despite the inherent challenges, the establishment of strategies for innovation activities can lead to optimal improvement in the business structure of public-sector organisations (European Commission, 2013; UN, 2017).

### *2.5.3 Managerial Innovation in the Public Sector*

The concept of MI in the public sector varies accordingly, depending on the economic structure as it corresponds to the size of the public sector (Dutta *et al*., 2017). Research by Gelan *et al*. (2021) explored the public–private sector relationships in the context of Kuwait via a unique set of input–output tables, in order to determine private- and public-enterprise originating transactions, while also establishing the sector-based imports. It was found that the public sector contributed 64% of GDP in 2016, while the chemicals industry was found to have balanced and reasonably robust linkages in both the private and public sectors. Gelan *et al*. (2021) concluded with the relevance of policy analyses to current public discussions in terms of the ongoing design of the economic reform programme. This suggests that public-sector innovation can offer a significant contribution to Kuwait's economy through reducing the cost of public services, improving the array and quality of services, and ultimately developing an indirect connection with the private sector for the growth of innovation capabilities such as embedding improvement and the expansion of business infrastructure that has a dependency on the public sector (UN, 2017). When describing innovation in the public sector, the role of managers carries considerable importance as they are responsible for the development of initiatives in organisations, as well as for managing change (Birken *et al*., 2013). Therefore, MI will be dependent on the characteristics and attributes of individuals who are responsible for managing the innovation activities in terms of MI and organisational activities in the public sector. As reported by the Global Innovation Index, the perception of MI at work is acquiring importance, where the approach of various countries towards innovation practices is progressing at a rapid pace, with Figure 2.2 describing the 2021 innovation ranking for the MENA region based on data from Cornell University, INSEAD, and the World Intellectual Property Organization, where it can be seen that Kuwait is in the mid-rank position (The Global Economy, n.d.).

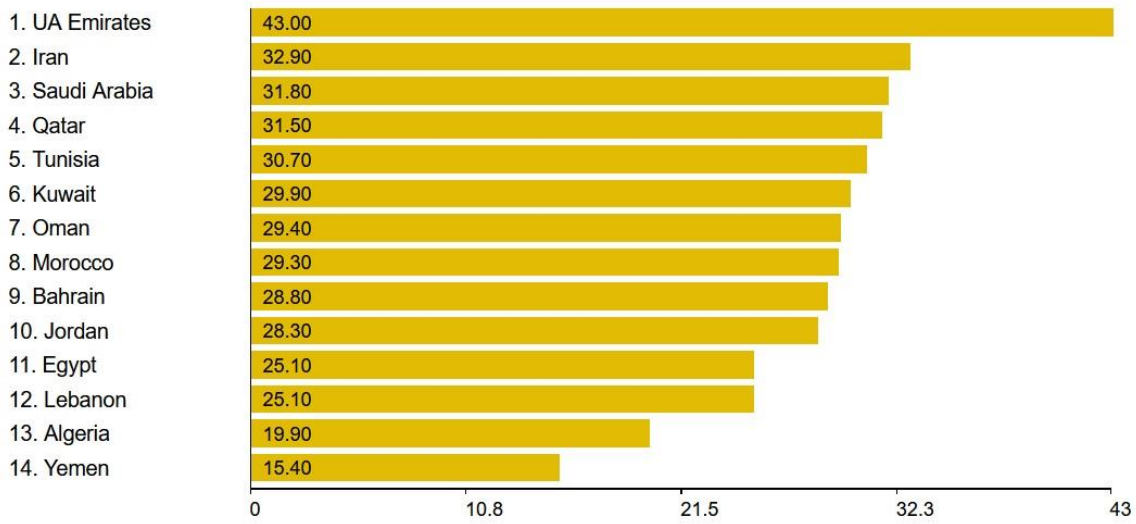



**Figure 2.2: Innovation Index for the MENA Region (The Global Economy, n.d.)**

### *2.5.3.1 Directions of Innovation in the Public Sector*

Based on the definition of MI with respect to activities in the system of public-sector organisations, the existing approach for integrating innovation is explored, such as a study by the Association of Chartered Certified Accountants ([ACCA], 2019), an international body for professional accountants, which investigated the innovation activities in the public sector by (i) carrying out a survey of its global membership, (ii) collecting qualitative data from 89 members based in 32 different nations, (iii) conducting an in-depth literature review on innovation and the public sector, and (iv) conducting individual interviews with experts to investigate the innovation roles played by public finance individuals. The study aimed to explore the directions of innovation in the public sector through analysing the kind of innovation applied for managing organisational activities in that sector. For instance, an innovation compass was used, where the four directions in the innovation compass were described by the terms *directed innovation*, *radical innovation*, *incremental innovation*, and *undirected innovation* that define the basic approach to fostering innovation in the public sector (see Figure 2.3). This identified the inclination of public-sector organisations towards adopting innovation in their business model, such as that described by the dimensions of innovation. The financial activities were realised by this research (ACCA, 2019). To understand the dimensions of innovation, the terms were defined as (i) incremental innovation, an approach for implying minor changes in the business structure so that value creation is successfully attained; (ii) radical innovation, an approach for providing a new infrastructure replacing the old technique or method; (iii) directed innovation, which follows

a top-down infrastructure that depends upon the organisation's management; and (iv) undirected innovation, including bottom-up infrastructure that focuses on the changes implied from the grass-roots level. These four dimensions highlight public-sector organisations' inclination to adopt innovation as the business/organisational model.

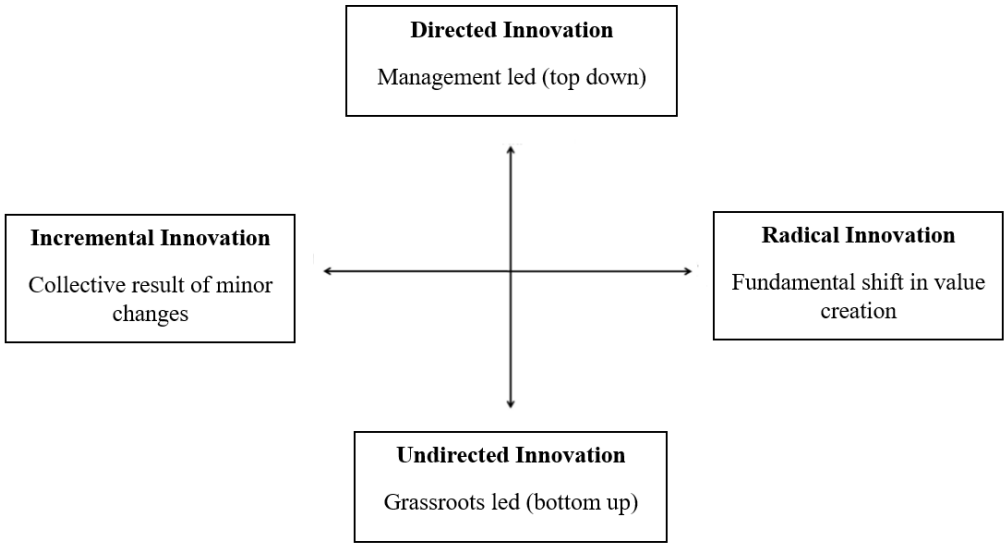



**Figure 2.3: Directions of Innovation (ACCA, 2019)**

The research explored the directions of innovation in the public sector in terms of radical innovation or transformative innovation, which depend upon managing activities based on the application of innovation within an organisation, where the innovation activities are focused on creating value. The findings revealed that the majority of the organisations in the public sector deploy incremental innovation, which implies that the public sector applies minor changes within the existing infrastructure of the organisation (ACCA, 2019). Burbidge and Webster (2019) reported on the approach of public-sector innovation activities via the partnership between the Royal Society for Arts, Manufactures, and Commerce (RSA) and the ACCA, whereby more than 4,000 ACCA members from around 140 nations participated in the global survey, with the study identifying that organisations in the public sector are keen to manage innovation activities so that progress is retained, with the graph in Figure 2.4 presenting a comparison between public- and private-sector innovation approaches with respect to organisational activities.

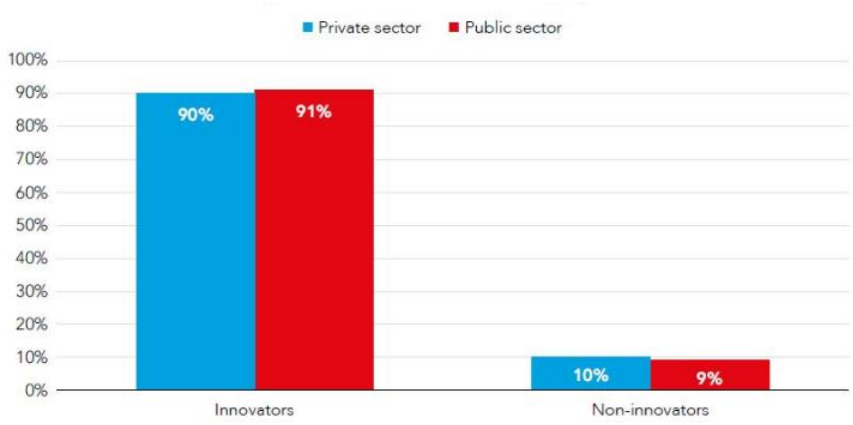



**Figure 2.4: Innovation Approach in the Public and Private Sectors (Burbidge & Webster, 2019)**

Moreover, Burbidge and Webster's (2019) study emphasised the existence of challenges that are encountered by public- and private-sector organisations, whereby skills and talent management represent the main challenge in the public sector that obstructs a progressive approach to innovation (see Figure 2.5).

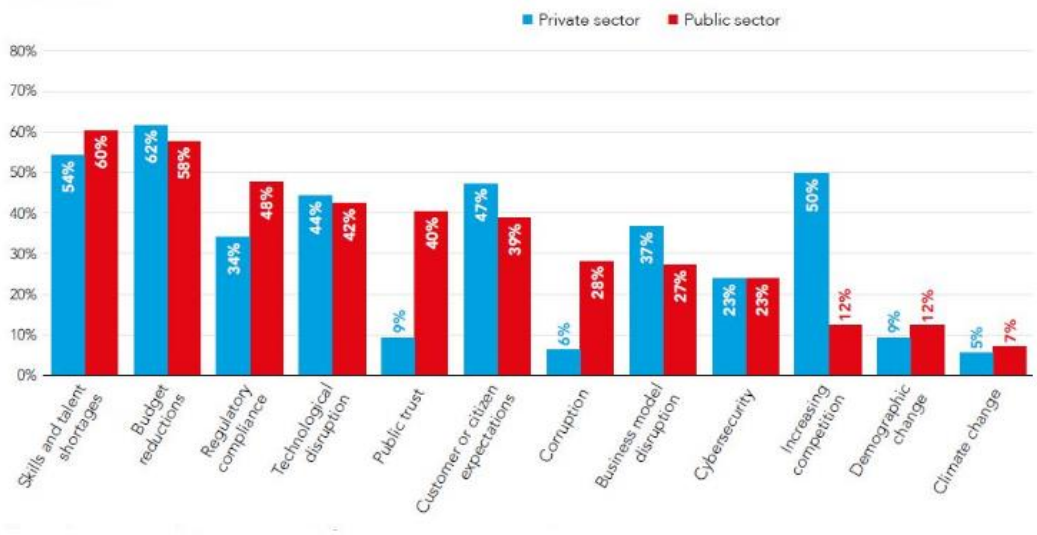
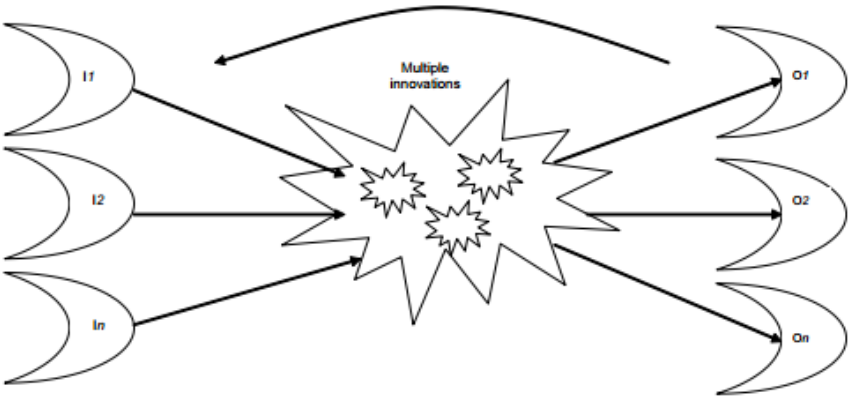



**Figure 2.5: Challenges to Public- and Private-Sector Innovation Activities (Burbidge & Webster, 2019)**

## 2.6 Managerial Innovation and Organisational Activities

The evaluation of managerial activities involves both the public and private sectors (de Vries *et al*., 2018). According to Wynen *et al*. (2013), who utilised data from over 200 public-sector organisations in multiple countries to explore the impact of the characteristics of new public management approaches on innovative culture, their study found that positive

and independent effects arise when managers have high levels of autonomy and result control. Moussa *et al*. (2018) conducted an in-depth literature review to explore innovation in the public sector, where it was reported that managerial activities include financial management and the autonomy of personnel management, while other activities involving higher controls are observed with a potential linkage to the innovative aspects of organisational activities. The authors also highlighted a need to develop a broad understanding of public-sector innovation, and for the development of criteria or indicators that can be employed by public-sector administrators in order to elevate the levels of innovation present in their processes. The association between organisational activities and innovative practices has been widely studied over the past decade, such as Arundel *et al*. (2019) who conducted a literature review into the advancement of innovation in the public sector that highlighted the importance of the Oslo Manual for the measurement of innovation in the public sector, since the manual offers definitions of innovation that can be applied to all sectors, and supports the collection of comparison data from the private sector (OECD and Eurostat, 2018). Arundel *et al*. (2019) proposed a framework to enable innovative activities to be benchmarked between the business and the public sector, and to measure innovation in the public sector in order to support policy requirements. Exploring the initial perspective for the management of organisational activities and innovation, a study by Vigoda-Gadot *et al*. (2005) addressed the notion of innovation in the public sector, where they suggested that existing knowledge regarding the antecedents, characteristics, and consequences of innovation should be considered as another important component of new public management. The authors presented a model for illustrating infrastructure, elaborating on the interrelating aspects of innovation and the management of organisational activities, with the model in Figure 2.6 representing this framework.




$I_{1-n}$: Information generation and dissemination, responsiveness and organizational learning capacity, internal communication, organizational conflict and politics, organizational structure, formalization, centralization and participation in decision making, reward system, managers' attitudes towards change, top managers' support and vision.

$O_{1-n}$: Individual factors (e.g., organizational commitment, esprit de corps, job satisfaction, job stress and burnout) and organizational/policy factors (e.g., organizational performance, policy outputs and outcomes, financial stability).

**Figure 2.6: Innovation and its Link with Organisational Activities (Vigoda-Gadot *et al*., 2005)**

A report by the Australian Public Service Commission ([APSC], 2016) drew on data from an Australian Public Service survey, a census of the 155,771 employees, and the organisation's employment database, with the report focused on three themes: capability, integrity and accountability, and performance. After investigating the strategies conceptualising innovation as deployed in different organisational activities, the report identified (i) the introduction of digital practices such as the use of ICT, advanced tools, and software applications; (ii) applying digital practices in the innovation processes, motivating employees to share innovative ideas; (iii) creating a framework for providing technology-oriented training; (iv) offering benefits and rewards based on the innovative skills of employees; and (v) creating an organisational structure based on innovative practices.

While discussing the approach of MI in the public sector, and considering the organisational activities, there is a need to understand the innovation system, which is defined as the set of interconnecting activities that are pursued by certain participants or actors, having a significant influence on their attributes and traits along with the impact of the socio-economic environment, which comprise crucial factors to determine the overall performance of innovation activities (Milutinovic & Stosic, 2013). The formulation of these activities includes the interaction of participants based on a cooperative or competitive approach, whereas the control of innovation activities in the public sector is distributed among all the

participants with respect to their assigned responsibilities. Essentially, organisational activities in the public sector depend on models such as the service innovation model that describes the approach to innovation in terms of organising the organisational activities in the public sector (Milutinovic & Stosic, 2013) and features five stages: (i) new service concept, (ii) design, (iii) analysis, (iv) development, and (v) launch. The model also includes three dimensions that provide a supporting role through process enablers, a novel interface for users, and a new service delivery system. According to Chen (2011), who developed the model and employed it in a case study of investment banking in order to examine its effectiveness, this model is of benefit due to its comprehensiveness through representing a compound of several models that have been developed in the past. The model suggests the approach of innovation activities in public-sector organisations, and is presented below in Figure 2.7.

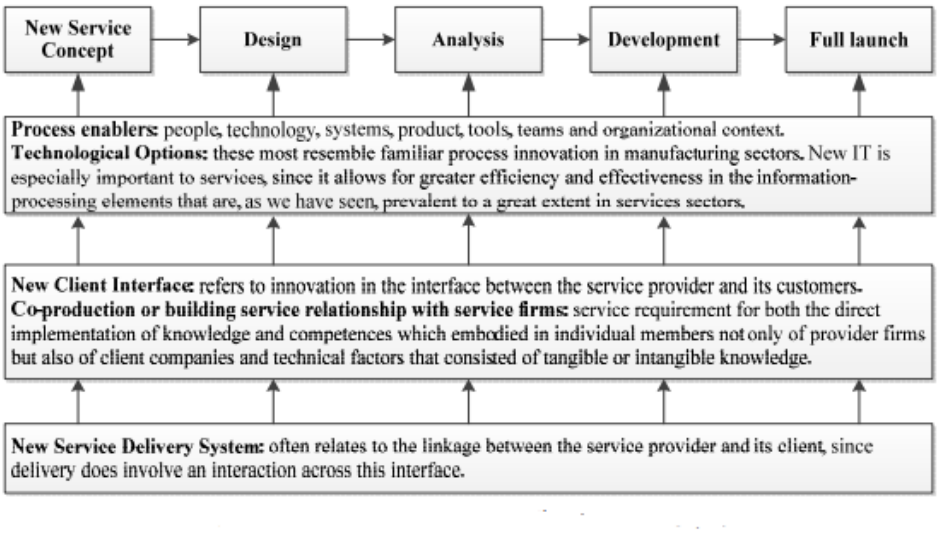



**Figure 2.7: Innovation Model for Integrated Services (Chen, 2011)**

## 2.7 Managerial Innovation as a System of Activities

MI is an accelerating trend in multiple scholarly fields, including business and management, computer science, engineering, and art and media. Top peer-reviewed papers refer to MI as an extension of business process re-engineering, organisational change, and knowledge transfer. The discussion in this chapter refers to *four elements of MI*, whereby the *subjects*, *objects*, and *tools* that shape the way the review results are demonstrated interact through managerial processes that formulate the final performance or *outcomes* of MI.

### *2.7.1 Subjects of Managerial Innovation*

Addressing MI formulates the soul of the organisation, involving rules, strategies, procedures, policies, norms, and organisational processes. The subjects of MI could be any driving factor that affects the MI pathway across the entire organisation. These subjects need to be clearly understood to follow and apply them, and should be adaptable and compatible with the organisational routines and the institutional context, suggesting relatively straightforward adoption in the military context due to the specific cultural and hierarchical characteristics, although innovation might direct a different approach as it does not necessarily follow a concrete hierarchical structure. Arundel *et al*. (2019) categorised all subjects under the term *transformative policies*, which lead to substantial results or innovation.

The traditional policy boundaries of a firm thus need to be refined through creative engagement to generate modified or new policies that add value and match the required innovative vision of management, as reported by Benaim's (2018) exploratory study on the importance of how innovative products and services are produced and consumed in the context of internet memes as a source of diverse innovation in sectors ranging from culture to finance. However, these policies and practices are subjects embedded within organisational norms and strategies that shape the overall organisational system; for example, operational tactics and procedures are considered as sub-systems of a firm that management interacts with in the overall strategy. Binz and Truffer (2017) investigated global innovation systems, where they developed a framework to analyse the innovation process from a technological perspective in terms of transnational settings, and reported that the innovation process reflects an increase in complexity from a spacial perspective. Since any conflict could affect the organisation, intervention practices in policies and management procedures could reflect vital complexity (Binz & Truffer, 2017). On the other hand, developing managerial practices is important to ensure that management adapt to improve the organisational processes that facilitate workflows within the firm. Therefore, firms seek to innovate within their management to survive or create a competitive advantage; for example, technological innovation processes taking place in transitional management to extend a firm's boundaries (Binz & Truffer, 2017).

Knowledge awareness is another subject of innovation that progresses through different phases to capture/measure the capability of change and estimate the technical

competency; this refers to the subjectivity of changing or adapting the workflow. Various studies have presented evidence of early/late adopters of innovation in their managerial and technical abilities, while their performance differs due to the variety of procedures, rewards, motivations, and general incentives that belong to innovation adoption in management (Bodas Freitas, 2008). Bodas Freitas (2008) conducted an empirical exploration of the adoption patterns of MI and organisation innovation in the United Kingdom (UK) in the 1990s, with the lens of focus placed on business process reengineering and quality circles, where she found that the prevalence of quality circles in smaller companies and service providers increased in this period. All these subjective activities rooted in organisation management that shape the organisational rules and norms are considered the subjects of MI.

The firm's strategy is another subject of MI that can enhance organisational quality, with Bourke and Roper (2017) utilising the Irish Innovation Panel that comprises data from approximately 13,000 manufacturers in Ireland and Northern Ireland in the 2004–2008 period in terms of the adoption of quality improvement methods and innovative activity. The study found that in order to ensure the maximum returns from quality improvement and innovation, the nature of individual quality improvement measures needs to be considered, as well as the timing of their implementation. Therefore, the management pattern represents the managerial environment for the community of the organisation where they interact with workflow activities within the organisational strategy.

The diffusion of the innovation literature is another area that presents a new perspective for MI in terms of a firm's creative activities, with Castellacci *et al*. (2018) conducting research into the relationship between the innovation intensity of employees and centrality through a survey of approximately 16,000 members of Telenor Group, a Norwegian state-owned telecommunications company. The empirical findings highlighted that the innovation intensity of employees is greater when they are centrally located in departments within the organisation's internal network, with the characteristics of the task such as entrepreneurial attitude, pressure for results, and quality orientation moderating the centrality–innovation relationship. Firms rely on their strategies, policies, and procedures to create their own organisational principles and rules that are then implemented by the top management and employees. Therefore, MI should be established within the setting of organisational strategies and policies that ensure it is rooted and interacts with the organisation activities. In this case, MI emerges during the implementation and diffusion

stages where new methods of operational design, operational decision-making, supply chain management, and quality management are developed to effectively utilise the organisational resources (Dan *et al*., 2018).

Organisational behaviour studies address the subjects of MI as o*rganisational attitudes* that include formal and informal practices and *actions* that create intangible resources such as human capital. Therefore, human soft skills have been defined as a key source of innovative procedures (Fonseca *et al*., 2019). Such attitudes shape the organisational culture, and in turn affect the activities of MI (Demircioglu & Audretsch, 2017). Demircioglu and Audretsch (2017) conducted pioneering research into the likelihood for innovation to manifest in public-sector organisations, where they utilised a large data-set (n=21,093) from the APSC and reported the crucial nature of intrinsic factors like motivation and experimentation to realising innovation in public-sector organisations.

In summary, this review has identified the subjects of MI as activators/motivators of managerial practices that interrelate with innovations/innovation processes and the overall organisational practices. The subjects of MI establish a benchmark in terms of what is required to innovate in management, to introduce new tools/objects (including technology), to introduce new human actions, and to develop new strategies. Moreover, they reflect the recognition of the opportunities and organisational changes necessary to achieve the overall vision (Andrade-Valbuena & Torres, 2018).

#### *2.7.1.1 Gaps in the Understanding of Innovation Subjects*

The above discussion refers to innovation subjects such as the norms, rules, policies, and procedures that play a vital role in the final outcomes of MI. However, the researcher has identified a gap regarding how innovation subjects can be mapped in terms of processes that involve detailed activities and stimulate change and improvement in modern management. Furthermore, the review of the literature has not revealed links between the subjects of innovation and the stakeholders (referred to as *objects*) of MI. There is broad coverage of MI studies in different corporate fields such as consumer electronics, oil and energy, telecommunications, and automotive. Nevertheless, there is a need to understand how the subjects of innovation evolve in public-sector organisations such as education, national security, and more specifically, in the military as a major public-sector institution.

### *2.7.2 Objects of Managerial Innovation*

The objects of MI are the actors who implement and follow the subjects, namely the senior managers, team leaders, groups, and individuals who trigger or are stimulated by the subjects to perform tasks and make innovative managerial decisions. Bhimani *et al*. (2018) carried out a systematic review of the literature on studies exploring the relation between social media and innovation that included 111 articles published in peer-reviewed journals. The authors found social media to be a driver and an enabler of innovation, and defined objects as all stakeholders who interact and drive the practical workflow in the innovation processes at different levels of management. They play a role through impacting firms' costs, accelerating processing, and utilising the resources, which leads to improved organisational efficiency and effectiveness. Fu *et al*. (2018) conducted empirical research into the nature of productivity and innovation using survey data from 501 Ghanaian manufacturers, where they emphasised that corporations invest more to develop their managerial processes through the knowledge of innovation to objectivity (tangibly) make something new as a community of practice. This inspires decision makers (objects) to add value in firms' MI. Thus, developing objects of MI needs to be considered as managerial practices interact with organisational polices (i.e., the subjects of MI), while implementing the organisation's vision in a practical manner.

The greater the degree of merging innovation in the managerial field, the greater the likelihood of ensuring competitive outcomes—where corporations lead at these practices, such as discount department retail and (point-to-point) airlines, they differentiate in terms of the online merchants and the market share of products and services that retain consumers as corporate citizens (Guo *et al*., 2019). Guo *et al*. (2019) developed a framework to measure the disruptive potential of innovation using three innovation case studies that reflected success (WeChat), failure (a modular mobile phone), and ongoing innovation (augmented reality). The study surveyed industrial engineering experts, and reported the benefits to organisations and investors from the managerial point of view of any measurement framework that can highlight an innovation's disruptive potential. Staff motivation schemes are also stimulants for MI, leading to practical actions, building an objective sense of organisational commitment for MI, and enabling adaptation to the surrounding environment. This is related to the organisational performance, which enhances a firm's innovative performance. Ji *et al*. (2017) analysed the impact that the relational, cognitive, and structural

capital of communities of practice have on innovation performance through social capital theory, pointing to employees' competitiveness, knowledge sharing, and absorptive capacity as the subjects of MI that enhance the overall corporate performance and survival.

In their study exploring the optimum task structure for organisations to realise innovation through human capital, which harnessed a data-set from over 6,000 Portuguese companies, Fonseca *et al*. (2019) underscored human capital as a key element for MI, referring to habits, personality attributes, and creativity as objects of MI that enhance the organisational change and continuous improvement in organisations. However, Björk *et al*. (2010) argued that human capital as an object of MI differs from firm to firm, and in turn, the continuity of innovation cannot be easily mapped as an object. In their paper, which involved four case studies of Swedish private-sector organisations and explored the capability for ideation in terms of ongoing innovation, the authors referred to the division of labour and human resources management as enablers for human capital, which in turn are considered as objects of MI.

In summary, the objects of MI are the human-related aspects of management that lead to change in a firm's performance. This includes stakeholders' mapping and engagement, staff motivation, human resources management, and human capital, as well as communities of practice.

#### *2.7.2.1 Gaps in the Understanding of Innovation Objects*

Objects of MI have been presented as human assets, but are represented in isolation of subjects and tools, and offer insight into stakeholder management. It remains unclear whether this MI outcome is generated by human elements, the introduction of technology, the introduction of new approaches/polices/strategies, or a combination of these. Moreover, greater clarity is required in terms of how these elements might interact. Objects of MI need to be addressed as a governance framework that clarifies the interplay between the human and non-human elements, as this part of MI is required to map the detailed activities that could be performed to enhance the overall impact of such objects.

### *2.7.3 Tools of Managerial Innovation*

MI tools are all instruments that mediate the interactions between subjects and objects, including technical activities and ICTs. Where these tools can enhance and develop the processes/activities through which subjects and objects interplay, they need to evolve as the interaction between sides develops (Shang *et al*., 2018). Shang *et al*. (2018) explored the relationship between contemporary urbanisation in Shaanxi province, China, and technology innovation using data from the 2000–2014 period, finding a positive correlation that led to rapid growth. The emergence of certain waves of technology are presented in Table 2.2 that extend from the early mechanisation of canals, textiles, and wind that featured in the late 18$^{th}$ and early 19$^{th}$ centuries and drove the Industrial Revolution, to the 21$^{st}$ century sciences that embrace biotechnology, environmental, and satellite technologies (Dodgson *et al*., 2008).

**Table 2.2: Waves of Technological Development (adapted from Dodgson *et al*., 2008)**

| Date | Description | Key sectors |
|---|---|---|
| 1770s –1840s | Early mechanisation | Canals<br>Textiles<br>Water power |
| 1840s –1890s | Steam power and railways | Machine tools<br>Railways<br>Steamships<br>Steam engines |
| 1890s–1960s | Electrical and heavy engineering | Electrical and heavy engineering<br>Electricity<br>Synthetic dyes |
| 1920s –1990s | Fordist mass production | Airlines<br>Aluminium<br>Armaments<br>Automotive<br>Consumer durables<br>Highways<br>Petrochemicals<br>Plastics<br>Process plants |
| 1970s onwards | ICT | Computers<br>Integrated services digital network (ISDN)<br>IT services<br>New materials<br>Software<br>Telecommunications |
| 2000s onwards | Life sciences | Biotechnology<br>Environmental technologies<br>Space/satellites |

The MI literature has pointed to the role of ICTs in helping to generate new ideas and to provide new features, processes, and work routines. The domain of digital and disruptive innovation highlights the critical role of technology in developing organisational processes, and in enhancing the overall efficiency, efficacy, and quality (Shang *et al*., 2018). The accelerating advancements in ICTs and computing tools have been captured by entrepreneurial managers to innovate new subjects and involve new objects in the MI process. Examples of ICTs in innovation include (i) technologies that have shifted the paradigm through their impact on industries (e.g., Airbnb, Amazon, Apple, and Uber); (ii) technology firms that have created new markets (e.g., Facebook, Google, and WhatsApp); and (iii) successful brands that have become synonymous with the technology utilised (e.g., GoPro cameras, the Nintendo games console, and the Slack messaging platform) (CAIL, n.d.). Vecchiato (2017) explored managerial cognition, technology competition, and disruptive innovation outcomes, where he defined the *esteem* and *social* markets, and reported that those established organisations unable to engage with such markets would probably see reduced success. The author emphasised that merging managerial cognition with innovative technology could support organisations to provide a new set of features that develop a firm's performance in the long term. ICTs lead to new human behaviours, new styles of decision-making, and in turn, enhanced MI, as reported by Kim *et al*. (2016) in their synthesis of research into MI and technological innovation in the context of the healthcare sector. In terms of contemporary technology in innovation that is changing the way that we live and work, innovations include fast internet connectivity through 5G networks and the use of 3D printing to affordably build and test prototypes, which Helena *et al*. (2021) highlighted through their study that explored 3D printing as an affordable solution to producing applications with a commercial purpose.

Another potential distinction is enhancing management with new technology that could make a radical improvement to developing/activating the IoT in managerial practices, which according to Kolloch and Dellermann's (2018) research into digital innovation in the context of the energy industry, conducted through the lens of a German energy provider's virtual power plant, creates an effective communication network and smart connectivity compatible with self-configuring capabilities. Such networks enable effective interplay between the objects and subjects of MI. Information analysis and the installation of hardware, computers, machines, and wearable devices facilitates workflows depending on the organisation's size and needs, with Elbanna and Newman (2016) presenting a case study to

better understand digital innovation's disruptive capacity in the context of mobile applications, where the authors argued that the mobile applications' sector may represent a different model of disruption. On the other hand, such tools exist to facilitate complex operations by building relationships between connected tasks that can lead to added value and competitive advantage. Innovation outcomes in management are considered to be one of the leading opportunities to develop an organisation by increasing standardisation in firms that promotes quality, interoperability, and compatibility (Xie *et al*., 2016). Xie *et al*. (2016) conducted an inductive case study of a prominent Chinese real estate developer in order to demonstrate how differing levels of codification and knowledge complexity result in a typology of active, decentralised, integrative, and passive search processes, and consequently in architectural, incremental, modular, and radical types of innovation outcomes. According to Dougherty's (2017) proposed framework for the organisation of complex contemporary innovation systems that captures their emergent, integral, and situated nature, digital innovation and science have always depended on MI, while innovation drives development and technology to resolve complex tasks and critical organisational issues. In doing so, MI tools support managers to make decisions that can generate new opportunities, leading to new value creation.

#### *2.7.3.1 Tools of Innovation in the Military Sector*

Technology is on track to transform almost every field of life, where in the military sector, innovation as technology tools has dramatically transformed the processes and operations of battlefield and other military concerns. The IoT and AI are two major areas of technology supporting military processes with technological innovation; for example, the capability of the army to understand, adapt, expect, and utilise internet-enabled devices that will be available in future battlefields (Popescu, 2019). The number of connected devices is increasing in military operations, and therefore Tortonesi *et al*. (2016) investigated the challenges and solutions offered by the IoT within the military network setting, highlighting the need, amongst others, for research to resolve the differences between military and commercial network architectures. Furthermore, AI as a technological advancement plays a critical role in improving the military-sector performance through supporting robotic assistance in the battlefield, providing resilient obstacle avoidance for eliminating enemies, enabling secure and fast logistical supply chain processes, offering health monitoring systems, replacing soldiers in battlefield, and providing feeling intelligence for decision-making on the battlefield (Bistron & Piotrowski, 2021; Gotarane & Raskar, 2019). For

example, through applying content analysis and the PRISMA protocol, Reis *et al*. (2021) carried out a systematic literature review into the development of intelligent and autonomous systems in the high-tech defence domain, reporting the defence industry-focused development of autonomous intelligent systems in terms of partially/fully autonomous operations, as well autonomous intelligent decision-making.

The deployment of technology for persistency, auditability, anonymity, and the decentralisation of logistical supply chains supports security for military applications, whereby Kim and Laskowski (2018) argued that ontologies have the potential to contribute towards the design of cryptocurrency blockchain. Meanwhile, cybersecurity and logistics can be combined for the improved reliability and safety of supply chains, as highlighted by Sobb *et al*.'s (2020) study exploring the issues, solutions, and future trajectory of online security in the context of supply chain 4.0 that features inherent threats due to insufficient semantic standards, substandard interoperability, and inadequate security regarding the process operation of the information technology and manufacturing. Moreover, the IoT can be deployed to reduce the response time of logistics and improve the speed of actions, as reported by Bistron and Piotrowski's (2021) overview of the present and anticipated potential for algorithm development in the context of AI. Additional examples include the use of the IoT with sensors for monitoring soldiers' health and providing them with updates regarding their health status (Gotarane & Raskar, 2019), while robots can work with intelligent systems to perform human actions by including the advanced technology of obstacle avoidance and enemy elimination (Bistron & Piotrowski, 2021).

Figure 2.8 identifies the deployment of innovation tools as technology advances for transforming the military sector, with AI applicable to solving the challenges in each tier of the taxonomy. However, despite the popularity of such technology in the military domain, those in society remain concerned regarding the implications of AI in the military sector, while even the experts in the field are divided regarding the development and future of the technology (Bistron & Piotrowski, 2021).

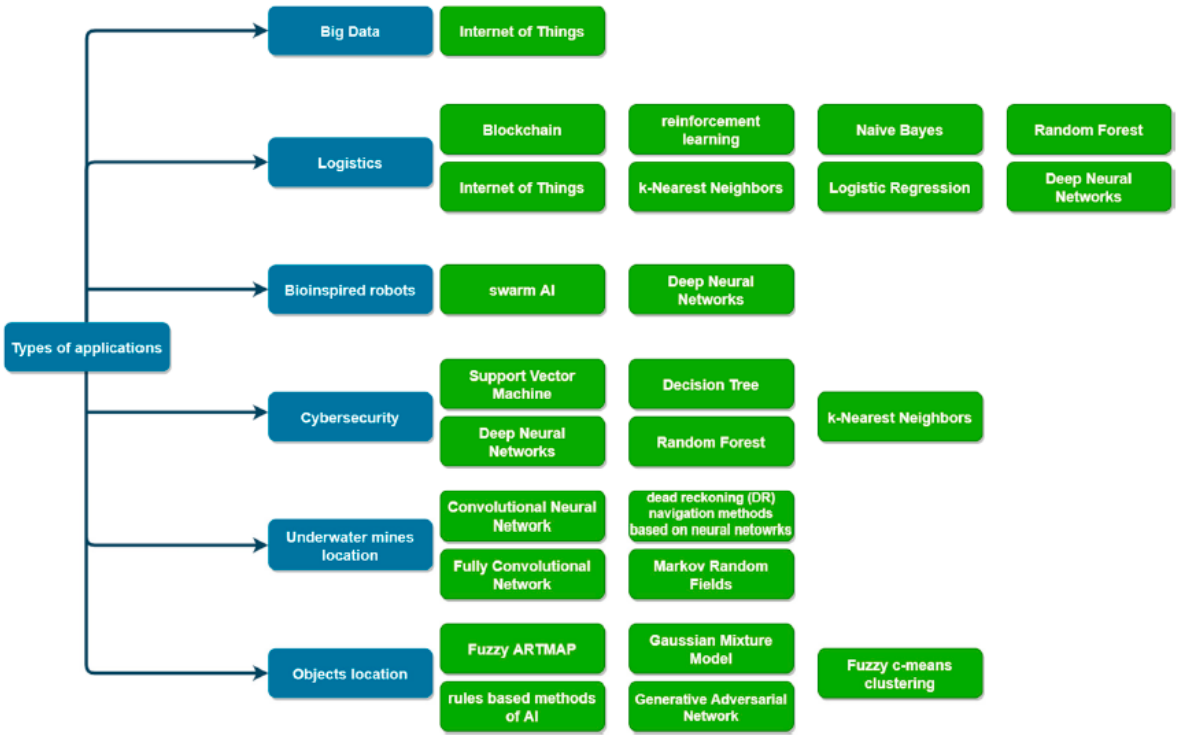



**Figure 2.8: Taxonomy of Technology Applications in the Military Sector (Bistron & Piotrowski, 2021)**

In summary, MI tools are non-human elements and artefacts that enable existing and new subjects to perform current and new tasks. This includes ICTs, hardware, machinery, and associated tools for information analysis, interface design, project management, and operations.

### *2.7.3.2 Gaps in the Understanding of Innovation Tools*

MI tools are created by humans and their impact is dependent upon the social settings of the MI objects (stakeholders) who develop and use them. The MI literature represents these tools in isolation of objects and subjects. MI tools require a development strategy that should be consistent with the organisational vision, and the development strategies for MI objects and subjects. Yet, there is no clear view of the key activities required to develop MI tools and how to map these activities with other organisational activities.

### *2.7.4 Outcomes of Managerial Innovation*

MI is taking place in research and corporate practice, where there is a strong trend towards employing MI elements in management development. The ultimate outcome is the MI in the organisation (Harvard Business Review, 2006), which could be in terms of improved R&D processes, cost reductions, better efficiencies and profit, more effective use of labour, and so forth.

Hamel (2006) referred to the indications of some corporations, which have effective consideration and diligence of MI, and continue to innovate firm processes, where the majority of companies use formal or standard methodologies and R&D associations or groups. Hamel (2006) addressed the different outcomes of MI in successful corporations such as General Electric, DuPont, Protector and Gamble, Visa, and Linux, with enhanced competitive advantage, cost cutting, diffrentiation, and diversification highlighted as key MI outomes.

In the research laboratory, General Electric has developed remarkable inventions in the industrial field, where the organisation has added discipline management to their processes of scientific discovery, leading to more patents than its competitors in the USA in the 50 years since its implementation (Owles, 2017). Meanwhile, DuPont played an important role in the techniques for developing capital budgeting in 1903, and several years later the corporation developed methods and management approaches that standardised comparison methods in their processes and performance, with these innovations helping the company to become one of the industrial giants of the USA (Johnson, 1975).

Procter and Gamble's roots were set in the packaged products industry in the 1930s, while the company later commenced a new approach referred to as *brand management* that formalised the branding systems of its products, and which projected the organisation to early success by creating the added value of intangible assets (Kerr, 2022). The company's portfolio of products includes approximately sixteen brands that generate more than $1 billion in sales annually.

Visa represented the first semi-virtual corporation on the global stage and is one of the most successful companies in terms of organisational innovation. When its founders established the company in the USA for management and innovation, they succeeded in

creating one of the most significant global brands. Nowadays, Visa is an international financial network that connects more than 21,000 financial institutions globally and generates over $2.7 trillion annually in card transactions (World Economic Forum, n.d.).

Linux offers the clearest example of MI outcomes as a computer operating system that relies on the development of open-source code. Based on the developers' innovation such as online open-source development, online collaboration tools, and comprehensive public licences, Linux has demonstrated a significant mechanism for formulating and coordinating the efforts of individuals that may be scattered geographically (Hamel, 2006). These examples show how the penetration of management and innovation can deliver powerful advantages to the innovating organisation and provide a transformation in the leadership of industry. Meanwhile, technology and innovation are considered to be the core of innovating products and the processes formed to deliver accurate, high-calibre advantages.

MI creates long-lasting advantages by meeting at least one of three conditions:

- the innovation should be based on novel procedures or principles that challenge the imagination of management;
- it is dynamic in adoption and innovation, but systemic by including a broad range of methods and processes;
- it represents part of a continuous and permanent programme of innovation, where development continues to increase over time.

(Hamel, 2006)

The nature of these criteria clarifies the importance of MI and how it can guide firms to achieve continued success.

A study by Sanchez and Fanise (2013) underscored the relationships and interactions between MI and technological innovation, whereby MI needs to transact with technological innovation. The study sought to better understand the impact of companies' MI on their corporate social responsibility through using a Swedish branch of IKEA in the city of Karlstad as a case study, where the three types of MI contributing to corporate social responsibility were found to be administrative, management, and organisational innovation. However, MI is not simple or ordinary technology, since new technology is required that necessitates the call for technological innovation. A study from the late 1960s also

demonstrated the importance of increasing the expenditure on MI R&D in corporations, where technological innovation leads to increased profitability for the firm (Muse & Kegerreis, 1969). Muse and Kegerreis (1969) clarified how corporations consider and appreciate how they innovate in their management in the search for reduced cost and increased competitive advantage, quality, performance, and productivity. Another study showed how innovations in management have a direct impact on the organisational processes and the organisational structure, which are considered more effective than the embedded assets in the firm such as Just In Time and Total Quality Management (Burgess *et al*., 2005), with Burgess *et al*. (2005) exploring the comparative adoption of several tools for assessment in the chemical industry through action research with a view to identifying improvements in new process development performance. In general, corporations reflect on how MI and technological innovations are related, and how they affect firms in various aspects (i.e., industrial or managerial). However, the specific kind of relationship(s) is not yet resolved in the literature due to the paucity of research; for example, in their empirical study of innovation in family firms that featured a data-set of 533 Finnish companies and explored the difference between family-owned and non-family-owned enterprises, Kraus *et al*. (2012) tended towards a positive relationship between MI and technological innovation, where the former depends on the latter, while Birkinshaw *et al*. (2008) asserted that technological innovation is not mandatory in creating value in the processes of MI by applying an intra-organisational evolutionary lens to explore the principal internal and external agents of organisational change. This discussion highlights the limited number of studies that focus on MI (Damanpour *et al*., 2012).

#### *2.7.4.1 Gaps in the Understanding of Innovation Outcomes*

There is a lack of explanation of the relationships between MI subjects, objects, tools, and the overall outcomes. Moreover, the measurement of different MI outcomes is not addressed by the literature, with no clarity of how it happens or whether it takes place radically or gradually. Meanwhile, the published research fails to call for a systemic feedback loop where organisations need to reconsider the MI subjects, objects, and tools to achieve the expected outcomes. All these identified research gaps could be narrowed once alternative theories have been considered, as carried out below in section 2.8.

## 2.8 Conceptualisation of Managerial Innovation

This section addresses the most frequent theories adopted in the MI literature. Three theories have been used to conceptualise MI: innovation diffusion theory, open innovation theory, and inclusive innovation theory. The characteristics of each theory are thus discussed below to define the research gap and justify the choice of the proposed conceptual framework in Chapter 3.

### *2.8.1 Innovation Diffusion Theory*

> *There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things ... Whenever his enemies have occasion to attack the innovator they do so with the passion of partisans, while the others defend him sluggishly so that the innovator and his party alike are vulnerable*.
>
> (Machiavelli, n.d., as cited in Rogers, 1995, p. 1)

The literature retrieved in this study covers the diffusion of new technologies such as e-commerce, where Campbell *et al*. (2013) investigated the formation of business-to-consumer relationships in order to better understand the influence of website design on e-commerce adoption and attraction; Alkhunaizan and Love (2013) explored the frequency of mobile commerce usage in Saudi Arabia through survey data from 574 participants, finding that age impacted on usage; Schierz *et al*. (2010) conducted empirical research to determine the acceptance of making payments via a mobile service and mobile banking; and Chen (2013) analysed 610 Taiwanese questionnaire responses to explore the perceived risk of mobile banking services, as well as the frequency of usage. These studies consider new technologies as innovative artefacts that pass through gradual diffusion steps.

In 1983, Rogers defined innovation diffusion as a process of reducing the uncertainties of technological adoption. Potential adopters of new technologies are typically unsure about the circumstances of their decision and face different sorts of technical, institutional, and cultural challenges that make them reluctant to adopt (Rogers, 1983, 2003). Rogers (1983) established five principles to assure the novelty (innovativeness) of the new technology over the existing, as seen in Table 2.3 below.

**Table 2.3: Principles of Innovative Technology (adapted from Rogers, 1983)**

| Principle | Definition |
|---|---|
| Relative advantage | The degree to which an innovation is perceived to enhance the current offering |
| Compatibility | The extent to which an innovation is perceived to fit together with potential adopters' practices and habits |
| Complexity | The degree to which an innovation is difficult and complicated to use |
| Observability | The degree to which the results of an innovation are visible to others |
| Trialability | The extent to which an innovation can be sufficiently tested |

These principles were found to be essential in numerous international studies covering a wide variety of industries (Rogers, 1983). Chen (2013) confirmed that these principles are also required to facilitate the adoption of mobile banking and payment technologies. Meanwhile, in the context of an increasingly complex and dynamic business environment, El Sawy (1985) sought to comprehend top executives' strategic scanning behaviours through an empirical study of 37 CEOs of USA-based SMEs, and reported that the introduction of new technologies is typically accompanied by implementation problems that need to be addressed by the top management. Accordingly, they must develop an implementation strategy to support a rapidly increasing number of potential users covering the overall organisational hierarchy, and for computer-based technologies that gradually multiply and change. In doing so, senior management must ensure the new technologies do not impede the existing organisational resources or convert the computing functions into insufficient expansions (El Sawy, 1985). Furthermore, if the trust perception of risk is greater than the trust relationship, then the user will not engage in mobile commerce (m-commerce), with Joubert and van Belle (2013) conducting a questionnaire survey (n=110) with two call centres based in Cape Town, South Africa, to determine the roles of trust and risk in the adoption of m-commerce, whereby they found no direct impact on the intention to adopt caused by risk. Challenges were found to be plausibly systemic and related to factors that restrict building new technological regimes for m-commerce. Identifying how, why, and at what rate new ideas and technology spread through a culture are the outcomes of innovation diffusion theory (Rogers, 1995). Diffusion is also defined as a process that involves the communication of innovation among certain individuals and via certain channels (Rogers, 1995). Based on this definition, Rogers highlighted four stages of the diffusion of innovation process: innovation, channels of communication, time frame, and social system.

The *innovation* stage starts with creating a new idea, practice, or project that might be of benefit for individuals or a social group. The novelty of such innovation is based on three criteria—knowledge, persuasion, and decision—as described by Sahin (2006) in his in-depth review of Rogers's theory of the diffusion of innovation. Innovation knowledge represents an individual's attempt to understand the innovation, how it works, and why it works (Rogers, 2003), whereby three sorts of knowledge typically arise: awareness, know-how, and principles (Sahin, 2006).

Building *communication channels* is the second stage, in which participants tend to share information so that a mutual understanding can be reached (Rogers, 2010). Such communication takes place via channels connecting the individuals or institutions who originate the message. These channels (e.g., mass media or interpersonal communication) are the means through which the sender transfers the intended message to the receiver (Rogers, 2010).

*Time management* represents the third stage, during which innovation leaders manage the time spent on diffusing innovation, categorising innovation adopters, and rating the level of adoption (Rogers, 2010). Once this critical element is managed, the diffusion of innovation will be highly successful.

The *social system* is the final stage, in which a commonly accepted goal is achieved through problem solving (Rogers, 2010). This affirms the mutual effect between the innovative artefacts and the social system in which they diffuse (Castells, 1996). This bi-directional impact is conditioned by the structure of the social system, whereby the structure in this case can be defined as how the social units are organised in a system (Rogers, 2010). Therefore, the individuals' innovativeness is conditioned by the nature of their relationships in their community and how they are categorised within it (Ceci & Iubatti, 2012). Ceci and Iubatti (2012) applied content analysis to examine the personal relationships and the diffusion of innovation in SME networks, utilising data from the Sino Italian Interuniversity Consortium (CISI) that comprised 15 SMEs active in the Italian vehicle manufacturing industry, where they found that personal and professional relationships collectively create a particular context that shifts the typical innovation diffusion dynamic.

#### *2.8.1.1 Critique of Innovation Diffusion Theory*

In terms of the limitations to innovation diffusion theory, Waterman (2004) cautioned that the theory does not take into account the potential for the innovation to be rejected if it is not fully understood. Moreover, in his empirical research to explore the issues of innovation diffusion in 300 SMEs located in the Western Pomerania region of North-West Poland, Norek (2013) found that while approximately one-third of the introduced innovations were accepted by the customer base, less than one in ten resulted in complete market success, with over half of the SMEs reporting that the sales from innovation comprised less than 10% of their profits. Therefore, according to Wolfe (1994), greater consideration needs to be given to the characteristics of innovation, and the manner in which these may shift over time.

In their paper exploring the practice and principles of the diffusion of innovation theory, Dearing and Cox (2018) highlighted the widely accepted costs–benefits of innovation diffusion theory as (i) the extent of the required investment, resource, or time in terms of the adoption and implementation of an innovation; (ii) the innovation's predicted ability to function in a superior manner to that which it is intended to replace; (iii) the ease with which the innovation can be used and understood; (iv) the innovation's ability to fit with the existing approaches to achieving the same outcome; (v) how well the innovation outcomes will actually be noticed; and (vi) whether the decision to adopt the innovation can be reversed or introduced in phases.

Lyytinen and Damsgaard (2001) asserted that while research on the diffusion of innovation theory has positively impacted on IT research, the theory is lacking in certain theoretical constructs that enable greater understanding of whether and how technologies that are complex and networked will diffuse. Finally, Kole (2000) indicated that the diffusion of innovation theory (i) does not cater for the possibility that failure may occur; (ii) assumes that success is associated with cutting-edge technology, thus ignoring other solutions that may be a better fit; and (iii) overlooks social structure by placing the lens of focus on individual adopters.

Innovation theory thus explains the interplay between the objects and subjects of MI, as well as the socio-technical considerations of how MI can be delivered, although it does not explain how such interplay arises with the managerial settings. Furthermore, the theory fails to explain the impact of innovation and how either public or private organisations can achieve the broadest impacts through MI.

### *2.8.2 Open Innovation Theory*

The conventional understanding of organisational success highlights certain critical success factors that reflect the extent to which an organisation is innovative, including highly competent staff, the R&D division, and a fault-tolerant corporate culture (Heeks *et al*., 2014). However, the contemporary era has made these elements inadequate in terms of reflecting a truly innovative organisation. Such innovation is based on the closed innovation paradigm (Chesbrough, 2003). The mitigating global boundaries, intensifying competition, and changing customer needs with escalating R&D costs led to the closed innovation paradigm being superseded by the open innovation paradigm (Gerybadze & Reger, 1999). In their study investigating the globalisation of R&D in the context of transnational corporations' MI, Gerybadze and Reger (1999) conducted an in-depth analysis of 21 large corporations in Europe, the USA, and Japan in terms of their R&D internationalisation, finding that many companies had adopted multi-centres of learning strategy with one dominant coordination centre.

Open innovation theory significantly emphasises the external resources (Chesbrough, 2003). Veer *et al*. (2012) described open innovation as a collaborative and interactive process with external stakeholders, in their study exploring the relationship between open innovation and the illegal reproduction of intellectual property, whereby through their analysis of survey data from almost 4,000 German companies, the authors revealed that those companies engaged in open innovation have a greater exposure to imitation. Although the open innovation theory offers organisations a range of useful insights, such as the strategic diversification of R&D investments, easy entry to different markets, various resource acquisition advantages, broad-based ideas, enhancement of the organisation's internal learning capacity, and the easy transfer of external knowledge, the open innovation paradigm has some limitations (Heeks *et al*., 2014; Veer *et al*., 2012). Ullrich and Vladova (2016) contended that innovation researchers widely discuss the positive benefits of open innovation, while ignoring the inevitable limitations, in their study exploring the advantages and disadvantages of open innovation, whereby they reported that SMEs strive to strike a balance between the positive outcomes and negative effects of applying such innovation. Furthermore, Ullrich and Vladova (2016) developed a framework to help SMEs decide on whether engaging in open innovation is in the company's best interests. Various enterprises

face different challenges while integrating the open innovation practices (Ullrich & Vladova, 2016).

#### *2.8.2.1 Critique of Open Innovation Theory*

In their study that developed a heuristic model to offer support for the management of open innovation projects, Nunes and Abreu (2020) highlighted a number of issues related to the open innovation model: (i) increased costs for the implementation and the elevated process coordination required; (ii) the challenges that result from disrupted workflows; (iii) the heavy reliance on external know-how; (iv) the loss of control of key know-how and agility; (v) the threat associated with the leakage of confidential information; and (vi) losing complete control over the process of innovation. Moreover, there may be a lack of a clear vision due to the limited ability to define and communicate the goals for the open innovation with the stakeholder (Faridian & Neubaum, 2021).

In the context of private-sector service providers, Ovuakporie *et al*. (2021) explored the relationship between the practices of open innovation and innovation performance, where they highlighted the issue of resource constraints, whereby challenges can arise in terms of the location, allocation, and sustenance of those resources necessary for the operation and maintenance of open innovation. In their investigation of innovation networks in the context of the open source Linux Foundation, Germonprez *et al*. (2020) underscored the lack of structure in open innovation in terms of the need for clearly defined responsibilities and roles.

Filiou (2021) explored the implementation and impact of open innovation on the innovation performance of companies in industries where technology discontinuities were occurring, and cited the challenges of implementing the processes of open innovation to support both the capture and the creation of added value. Finally, compliance concerns were raised by Bertello *et al*. (2021) in their qualitative longitudinal study exploring the challenges encountered by three pre-competitive SMEs, where they highlighted that issues arose due to external and internal rules regarding public policy and intellectual property rights.

Therefore, although the theory of open innovation helps to explain how the wider set of MI objects/stakeholders are involved in the process, it fails to reveal how the transformation process takes place, or to address how the MI community employs the tools to follow the rules (subjects of MI).

### *2.8.3 Inclusive Innovation Theory*

Inclusive innovation theory is a socially focused innovation type that enables those from the lower social classes to access quality products and services (Henkel, 2006). Numerous countries are thus encouraging service and product providers to utilise inclusive innovation to reach the entirety of their population and promote fairness (Altenburg, 2009).

The concept of inclusive innovation is gaining popularity in the global telecoms sector due to the increased competition. However, inclusive innovation requires robust planning, or companies may eventually close that part of the business due to insufficient sales to sustain continued growth, as highlighted by Goyal's (2016) study of macroeconomics and how such conceptual frameworks develop after atypical economic events such as financial crises. One of the main disadvantages of inclusive innovation is the need for high sales to sustain production (Henkel, 2006). Inclusive innovation feeds inconsistency, which is detrimental to a business venture. It consequently slows down the decision-making practices in a firm due to the increased number of people involved (Altenburg, 2009). There are some common pitfalls to be avoided to increase the chances of success through inclusive innovation, including the lack of support from top management, the focus on incorrect performance metrics, failure to hire talented executives, partnership with the wrong organisations, and utilising old models of business (Henkel, 2006).

#### *2.8.3.1 Critique of Inclusive Innovation Theory*

In their essay exploring the challenges of inclusive innovation, Doussard and Clark (2021) underscored that the theory represents an aspiration for economic development that does not currently exist, with challenges arising due to gender-based inequalities and hierarchical structures where bottom-up innovation cannot occur, as well as the defunding or overlooking of institutions or programmes that focus on places and people who tend to fall outside the standard model for innovation. For example, in Motoyama *et al.*'s (2021) qualitative case study of the entrepreneurial ecosystem of St. Louis, Missouri, they reported a gender divide that highlighted discrimination in terms of female entrepreneurs' access to resources when compared to their male counterparts, which reduced the number of risk-takers available to implement innovation.

Bramwell (2021) compared the inclusive innovation programmes in Greensboro, North Carolina, and Sainte-Etienne, France, where the two medium-sized cities were engaged

in restructuring and absolute successes were not reported in either case due to the lack of support from the institutions and the overlooked need to introduce new talent into the process. Moreover, in their study exploring inclusive innovation in the Ontario context of manufacturing units (*makerspaces*), Vinodrai *et al*. (2021) found that while access to training and technologies was made available, there was very little evidence that the makerspace memberships sought social inclusivity or that environmentally sustainable behaviours were encouraged. Finally, within the context of an innovative manufacturing improvement programme for SMEs in Chicago, Lowe *et al*. (2021) reported widespread inefficiencies and waste generated by the production and education systems that were uninterested in the innovations proposed by factory workers.

Essentially, inclusive innovation has been considered as a business model for creating innovative services rather than a theory for MI. Despite its ability to explain the grassroots approach of brainstorming managerial ideas between different objects of MI, it does not explain how the tools are created and employed by the objects to perform the subjects and enhance the overall outcomes.

### *2.8.4 Gaps in Conceptualising Managerial Innovation*

Innovation diffusion, open innovation, and inclusive innovation are the theories most frequently cited in the MI literature. They are found to be beneficial in defining the subjects, objects, tools, and outcomes of MI, but require consideration in terms of how these elements interplay and affect one another. Moreover, there is no indication of whether MI is a process or a collection of resources.

There is a call for a systemic perspective of MI as a process, and the need for a theory that explains the detailed activities of such a process, as well as the activities required to perform the subjects/rules, to orchestrate the human contribution, to effectively employ the tools, and to maximise the outcomes of the MI process. Such a theory or framework must learn from the corporate experiences discussed in the literature, and can be tailored for public institutions. In the next chapter, the researcher proposes a conceptual framework based on activity theory to help understand how MI might evolve within certain public-sector military institutions.

## 2.9 Chapter Summary

This chapter provided a detailed review of the literature to establish an evidence-based foundation for this research that aims to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. The chapter began by defining the term *managerial innovation* and describing its conceptualisation in the public and private sectors, while also examining the relationship between MI in both sectors. The concept of MI was revealed according to Schumpeter, defining its association with entrepreneurial activities and identifying its dependence on human capital, while other researchers indicated that MI is associated with the utilisation of innovation tools such as technology integration to facilitate in the optimisation of organisational activities. Then, the concept of MI was explored in the organisational sector through its dependency on organisational policies and societal challenges that primarily impact on MI in the public sector as opposed to the private sector. Next, the direction of MI in the public sector was considered, with the identification of incremental innovation as the principal direction of innovation in that sector, based on the sustenance of organisational policies and the expectation of minor changes in the existing infrastructure by introducing transformation in the organisational activities through the enhancement of the tools and aspects of managing human capital (e.g., talent management and skill development) as one of the pillars of MI. Meanwhile, the management of human capital as a pillar of MI in the public sector was observed as representing the most challenging task. The chapter then identified the theoretical grounds for the selected pillars of MI (i.e., human capital, ICT, and stakeholders' organisational policies) by exploring the subjects of MI as representative driving factors such as stakeholders' organisational policies, the objects of MI as human capital, and the tools of MI as ICT integration for the purposes of optimising the organisational processes and functions.

The reviewed literature revealed the lack of a clear linkage of these factors as a core component of MI in the public sector, thus highlighting the need to present a clear association of these factors as a fundamental component of MI in public-sector organisations. Extending the literature analysis, the theoretical concepts of innovation diffusion theory, open innovation theory, and inclusive innovation theory were explored, with the literature revealing that the selected factors of MI require another theoretical approach that frames a viable concept of MI in the public-sector context. The literature review identified a need for the investigation of factors such as ICT, human capital, and stakeholders' organisational policies in relation with the organisational activities of the public sector, where the paucity of

the exploration of the selected factors of MI in public-sector military organisations was observed. With the literature review suggesting the need for a systemic perspective of MI as a process, as well as a theory that explains the inherent activities, in the next chapter a conceptual framework based on activity theory will be proposed to function as a lens for MI in the Kuwaiti Amiri Guard.

# Chapter 3
# Activity Theory: A Conceptual Framework for Managerial Innovation in the Military

## 3.1 Introduction

The findings from the literature review suggest a call for a systemic perspective of MI as a process, and the need for a theory that explains the detailed activities of such a process. Such a theory or framework must learn from the corporate experiences discussed in the literature and can be tailored for public institutions. In this chapter, the researcher proposes a conceptual framework based on activity theory to help understand how MI might evolve within certain public-sector military institutions.

## 3.2 A Review of Activity Theory

Activity theory is grounded in Russian psychology from the cultural–historical school that was developed between 1920 and 1930 by Vygotsky, Luria, and Leontiev, and focused on awareness and activity (Sawyer, 2014), while Bertelsen and Bodker (2003) and Roth and Lee (2007) described activity theory as a theoretical framework that functions across disciplines and originates from the works of Hegel and Kant (both 18$^{th}$ century German philosophers of the classical domain), Marx's dialectical materialism, and Vygotsky's psychological work. The ideas were a field trial by scholars to explain the relationship and the interaction between human beings and other material in the world. It is considered by Karanasios and Allen (2013) as a theory in the common understanding and the interpretation of the term, who in the context of the Chernobyl nuclear plant closure demonstrated how the activity perspective can be employed to explore the use of ICTs for development in terms of the tools used to facilitate the activity, the motivation for the activity, and the stakeholders involved.

Activity theory can be viewed as a collective group of approaches intended to better understand how humans act and function, with the emphasis placed on the manner in which history, culture, and social interaction form consciousness in the individual, as well as leading to the organising of group activities (O'Connor, 2015). According to O'Connor (2015), the fundamental notions of activity theory originate from Lev Vygotsky, a Soviet psychologist,

and his followers in the early 20th century, with a range of activity theory approaches commencing from the human tendency to create and utilise artefacts to transform their surroundings, which then consequently influence and transform them. Vygotsky's closest associates were Alexander Luria who pioneered experimental research into neurological development, and Alexei Leontiev who conceived and principally expounded activity theory. Engeström (1987) later introduced three elements into the activity structure—the division of labour, community, and the rules/norms—which was coined as a *third generation* activity theory that has facilitated the analysis of activity within a range of fields in order to illuminate and better comprehend social activities and complex processes (Karanasios & Allen, 2018).

In terms of the three central themes that shape activity theory in the contemporary era, Wertsch (1991) cited: (i) mediation, whereby as opposed to responding directly to simulation, humans exploit material and semiotic artefacts that regulate and mediate interactions and action; (ii) genetic analysis in terms of the careful analytical focus on developmental processes; and (iii) the social origins of elevated cognitive functioning, with Vygotsky deeming individual development to be driven by social interaction.

According to Miettinen *et al*. (2012), since the 1990s there has been an increasing internationalisation of activity theory that has emerged as a critical theory through which to understand development and change in social activity and work settings. Moreover, activity theory has been viewed as increasingly acceptable as a modern social theory that can generate insights and frame research in education (Roth & Lee, 2007), human–computer interaction and the design of information systems (Nardi, 1996), management (Jarzabkowski, 2003), organisation (Engeström, 2000), and social psychology (Blunden, 2010).

Discussions over activity theory tend to be within the cultural historical activity theory (CHAT) and socio-cultural activity theory (SCAT) contexts, and while these acronyms may appear to be employed synonymously in the literature, they each have distinct emphases and origins with CHAT grounded in European thought traditions generally, and specifically in the cultural psychology of Russia, while SCAT is informed through the traditions of interactionism, anthropology, and pragmaticism originating from North America (Martin & Peim, 2009). Dennehy and Conboy (2017) also discussed actor network theory (ANT), which focuses on how an interaction arises, how the relationship functions, and how an activity is

problematised, where Baiocchi *et al*. (2013 ) asserted the primary pillars of the theory to be the actor and the network.

Mursu *et al*. (2007) reported that activity theory has been employed in the context of information systems since the early 1990s, primarily through the application of the developmental work research model by Engeström (1987, 1999), with Kuutti (1991) suggesting that in information systems the object of analysis should be the activity system. In 1999, Spasser published an article in the Journal of the American Society for Information Science presenting activity theory as an exciting novel information science approach that not only placed emphasis on the notion of practice as an activity, but also underscored the context and setting as concepts that orientate, with activity theory thus offering a valuable, unifying, and rich conceptual framework to facilitate both the improvement of practice and the accumulation and transferability of knowledge. Activity theory is frequently applied as a lens through which to guide qualitative data analysis in information systems research (Karanasios *et al*., 2015), since the field is located within a social context that is managed and designed by people who utilise tools (Iyamu & Shaanika, 2019), whereby the theory has been applied around three million times (Sekgweleo *et al*., 2017).

In Allen and Karanasios's (2011) study, the authors employed activity theory to report on an investigation into innovation in the UK police force in terms of its status, the involved processes, and those factors of importance that lead to patterns of innovation. Cheung and Vogel (2014) used activity theory to design a collaborative learning framework in the context of Web 2.0 and enable activities for social learning via collaborative tools such Google applications. Abdullah (2014) established the benefits of activity theory when applied to a case study of student teachers (n=57) and their development of creativity in design, finding that the theory facilitated in highlighting the potential of inter-community dialogue to increase awareness and lead to enhanced creativity and behaviour. Barnard (2010) utilised activity theory as a framework for the analysis of socio-cultural challenges in an academic context when collaboration occurs across cultural and institutional boundaries. Activity theory was explored in terms of its benefit for highlighting the freedom of activity inside a community of practice (i.e., a single system), as well as between discourse communities (i.e., separate systems). Meanwhile, Almalki *et al*. (2016) employed activity theory in a systematic review of 26 studies on health self-quantification, with the theory enabling the researchers to systematically describe the phenomenon and more easily identify and address the challenges facing health self-quantification.

Allen and Karanasios (2011), Jussila *et al*. (2019), and Karanasios and Allen (2013) pointed out that activity theory can function as a lens through which to understand how innovation is managed within public institutions, and to explore the detailed activities required to measure its outcomes. The primary administrative activities in the military such as health & safety and environmental protection, healthcare and medical operational capability, infrastructure, intelligence, military capability management, people, support, and transformation (Ministry of Defence, 2020) are grounded in logistics, operations, intelligence, human resources, and professional training. ICTs are enablers to integrate such activities located in the headquarters with other branches. Overall, such integration will enhance the accuracy and efficiency of operational decision-making in daily military practices.

The concept of MI has evolved into a widely used phraseology that can be noticed in a range of public- and private-sector organisational settings. Moreover, the earlier model-based approaches have been developed further to address the growing need for innovation in a much more systematic and extensive manner. There is a pressing need to conduct broad innovative practices in different sectors to stimulate economic engagement with the global market. In this regard, the public sector is realising the increasing importance of the methods it applies in terms of operating an efficient organisation. Over recent years, a range of systems have been developed to respond to the growing demands for innovation, systemic disruption, and global competition. Therefore, numerous management models have been proposed to manage the uncertainties and increasing competition on the global stage (Damanpour & Aravind, 2012), while activity theory has been applied to investigate innovation in a range of fields such as education (Grigoryan & Babayan, 2018). Employing activity theory as a theoretical framework, Karasavvidis (2009) explored teachers' concerns regarding technology-oriented innovation through a sample of 51 teacher participants who were asked about the potential for Computer-Supported Collaborative Learning to be included in their regular practice. The use of activity theory enabled the researcher to identify three major issues in the activity system: (i) in terms of the object of activity, (ii) between the object of activity and the means of mediation, and (iii) between the proposed and the existing object.

The central focus of analysis in activity theory is motivated activity that helps to identify information behaviour, as reported by Allen *et al*. (2011) in the context of activity theory from a cultural–historical perspective, which was employed by the University of Leeds's Adaptation Information Management and Technology (AIMTech) Research Group

over a 7-year period to guide their research in the domains of information systems and information behaviour. Depending on the goal or objective, the engagement of the activity could pass through another stage or process level, or could be returned to be processed, thus leading to interactions between the activities. In the context of the activity system, the engagement occurs in terms of the human interaction, while the artefacts (e.g., tools, communication, and technology) mediate the activities or the interaction, as asserted by Karanasios and Allen (2018) in their article focused on activity theory in the context of research on information systems where they discussed four key papers to underscore the development and value of activity theory in information systems research. These interactions could therefore lead to a certain behaviour, practice, or work allocation amongst members/departments, establishing legal or organisational rules that result in a systemic interaction or a system, regardless of whether it is successful or suitable.

In the context of MI, it has been asserted that such innovation should be focused on the four key components of communicative exchange, the institutional environment, new concepts, and people, while ensuring that the innovation outcomes are embedded into the process, as discussed by Zamri *et al*. (2013) in their study exploring the relationship between MI and Green Lean Six Sigma in the Malaysian vehicle manufacturing industry context, where it was shown that MI was an enabler for a more efficient and effective transition to a more environmentally focused approach that reduced the emission of greenhouse gases while producing products of a high specification. The MI object represents those stakeholders who are involved with the organisation and could be managers, decision makers, operators, customers, or individuals who innovate or enhance creativity in the implementation of the required tasks. Meanwhile, the MI subject represents the innovative policies, strategies, rules, and procedures creating a norm of innovation in the management, thus indicating how individuals could perform tasks, and why. Therefore, the MI subject is considered the motive of the MI object. Finally, MI tools reflect the technology that mediates the interactions of activities depending on the nature or type of the activity (i.e., the individual skills, organisation policies or rules, and technology level). In their study examining flow technique adoption in two case study companies, Dennehy and Conboy (2017) suggested that since activity comprises all the actions that humans carry out to realise their objectives, activity theory has been employed as a conceptual framework to analyse human and complex activities within the context of social systems.

The human interactions with the various organisational activities and continuous practices tend to generate a community, which refers to the organisational type. This interaction creates an organisational community, leading to transformational innovative processes that achieve the overall outcomes by realising the goals. Feedback is considered as an indicator that matches the interactive activities with the MI value-adding outcomes, where these interacting activities could be rejected, assist in highlighting which part needs to be innovated or developed, or return to interact again within a proper or compatible activity until the required outcomes are achieved (David, 2007; Kaptelinin, 2014). Since recognising and highlighting MI activity systems could reshape the key managerial activities, including personnel availability, work processes, planning, and the control of different managerial routines, embedding and utilising MI in the Kuwaiti Amiri Guard could add value in the Kuwaiti public sector, which would require exploration of the MI concepts or activities in the field in this case study.

Applying activity theory to military MI could help to illuminate key military activities. Therefore, this research extends beyond the narrow approaches of military operations and tactical planning towards the managerial thinking behind the overall military administration. The primary administrative military activities are rooted in logistics, operations, intelligence, human resources, and professional training. ICTs would help in integrating such activities located in the headquarters with other branches. Overall, such integration might enhance the accuracy and efficiency of operational decision-making in daily military practices.

### *3.2.1 Critique of Activity Theory*

According to Lektorsky (2011), there is criticism of activity theory in Russia by certain psychologists and philosophers due to allegations that the theory expresses a totalitarian ideology whereby humans are represented as merely those who execute externally determined orders, plans, and standards, as opposed to representing creative beings. Nevertheless, while he agreed that certain aspects of activity theory were influenced by the ideological circumstances of the Soviet Union in the 1930s, Lektorsky (2011) asserted that (i) not all the underlying notions of Vygotsky, Luria, and Leontiev are outdated; and (ii) activity theory should continue to be developed in novel directions.

Concerns have also been expressed regarding the limitations of English language translations, such as the unclear boundaries between activity theory and Vygotsky's sociocultural theory of how the mind develops, the limitations inherent in Leontiev's version of activity theory, poor or inaccurate interpretations of certain terminology and elementary concepts, the reliance on research that employed outdated approaches, and overlooking activity theory's Russian origins (Bedny & Karwowski, 2004).

Karanasios and Allen (2018) cautioned that due to social media's evolution into a community–tool hybrid, technologies are tending to dominate all facets of the activity system, which echoes the concerns raised by Simeonova (2018) that ICT- and information systems-related activity theory research may be placing excessive emphasis on technology's role. Karanasios (2018) also highlighted that despite the fundamental nature of contradictions in activity theory, this is frequently understated whereby activity theory is often employed in an elementary manner (Simeonova, 2018), while such contradictions can be challenging to reveal due to the change-resistant nature of the existing power structures and established norms (Kamanga *et al*., 2019).

In the context of activity theory, contradictions can be described as a poor fit inside or between elements, between different activities, or between differing phases of a developmental nature within a single activity (Kuutti, 1996). Engeström (1987) proposed four types of contradictions: (i) primary contradictions that occur inside the activity system elements, such as in a community; (ii) secondary contradictions that manifest between an activity system's elements, such as between a subject and the community; (iii) tertiary contradictions that the participants of the activity encounter when in order to realise a goal an advanced method such as new technology must be employed; and (4) quaternary contradictions that can arise between external activity systems and the activity system of focus. Nevertheless, as a fundamental principle of activity theory, contradictions help to identify the tensions that may arise over time and lead to conflict and interruption, and through their resolution, development or change can emerge (Gedera & Williams, 2013).

According to Mursu *et al*. (2007), while activity theory in general and specifically Engeström's Developmental Work Research highlight the collective nature of activity, which tends to involve more than one actor, many studies that employ activity theory limit the activity to a group of actions carried out by an individual, thus preventing the researcher from examining the individual and the collective activity components inside the same framework.

Furthermore, as opposed to a common foundation or unifying theory, activity theory is best perceived as a guide and organising structure for the analysis of artefacts' mediational role in activity of a purposeful nature (Roschelle, 1998). Ultimately, Creswell (2007) described activity theory as a tool for describing, as opposed to a *prescriptive theory,* with activity theory being suitable for application in qualitative research that places value on seeking an in-depth understanding of people's experiences. Moreover, activity theory is a mechanism that facilitates the design of improved activities and interactions that can help humans' outcomes and objectives to be realised (Sam, 2012).

### 3.3 Implementation of Activity Theory for the Subjects, Objects, and Tools of Managerial Innovation

Activity theory plays a part in developing human action from a holistic view in the environment, while aiming to unify the activity and consciousness. With its authentic tradition in the Russian cultural–historical psychology domain, it can be considered as the earliest ecological approach to be understandable to the perception (Kaptelinin & Nardi, 2008). It contains a set of initial principles that shape a conceptual framework to be used in specific theories as a foundation, with an assurance of involving social factors and the interactions that manifest between agents and their environment. Building on Vygotsky's concept of *activity,* Leontiev introduced a specified form for the societal existence in mankind, referred to as being *object-oriented* (Karanasios & Allen, 2013). The notion of the *object* is considered as one of the most conceptually contested areas in activity theory, with Kaptelinin's (2005) study seeking to address the issues that arise in terms of the contexts of use and meaning, where the focus was placed on addressing (i) the challenges of translating Liontiev's ideas into English from the original Russian text, (ii) the differing interpretations of the *object* concept in terms of Leontiev's approach and that developed by Engeström, and (iii) Liontiev's notion of the object of activity theory being *its true motive*, which has been deemed problematic amid calls to separate the motive and the object of the activity. The object can be defined as the *sense-maker* of the activity, which provides meaning and a significant determinant of the values for several phenomena and entities, while the object of activity could reflect the ultimate reason behind many of the behaviours of individuals, organisations, or groups (Kaptelinin, 2005).

The terms *object-oriented* and *object* thus indicate the *thing* that directs the subject, which can be applied by an individual or group directing themselves to realise their goals or to achieve their MI value-adding outcomes (Karanasios & Allen, 2013). There is a complex

relationship between the subject and object in the activities, which can be described as the *desire* when setting the priority, commitments, coordination, planning, and goals (Kaptelinin, 2005). Therefore, the subject plays a part in the activity structure towards the object crossing multiple elements that could vary depending on what is required or what elements can be adopted. The activity structure follows an activity that is conducted by a subject and is driven by the motivation to realise an object, where the subject acts as an agent towards the achievement of the object (Karanasios & Allen, 2013).

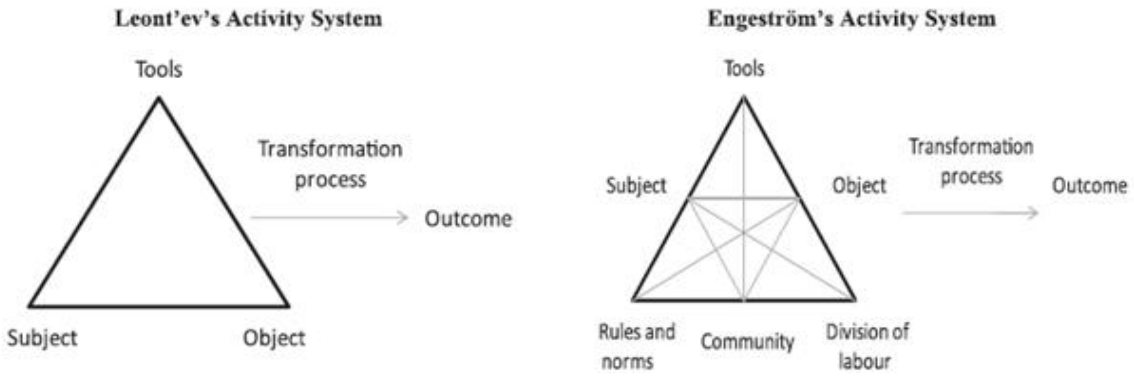



**Figure 3.1: Leontiev's (left) and Engeström's (right) Activity Structures (Karanasios & Allen, 2013)**

The basic structure for the theory was developed by Leontiev (1978) and improved the common approach for focusing on activity as an analytical unit, as illustrated in Figure 3.1 (left-hand side). However, the subsequent structure developed by Engeström (1987) expanded the previous concepts and includes the community element, social and cultural rules and norms, and the division of labour in the structure of the activity (see Figure 3.1, right-hand side) (Karanasios & Allen, 2013). Adding these components to the structure resulted in a model that presented the three-way interaction between the elements (i.e., subjects, objects, and community), while through these interactions three types of mediators (i.e., tools, rules, and the division of labour) could be mediated and propositioned, with the relationship between these components illustrated through the triangular diagram seen in Figure 3.1 (right-hand side) (Kaptelinin, 2009). The transformation involves the interaction process, with the object engaging in collaboration with the community and using tools as a mediator, where these tools represent physical artefacts (e.g., a computer or spirit level) or mental tools (e.g., skills or language) (Karanasios & Allen, 2013).

The object of the activity is defined as raw material or a problem space that each activity directs and transforms into outcomes (Kaptelinin, 2005). When considering the activity as an analytical unit, the researcher can select a member or multiple members to be a construction of the activity. A primary concept in activity theory utilised to explain the variation or the change is the tensions and contradictions within the activity that arise through inefficiencies (Karanasios & Allen, 2013). The human relationship with utilising a tool such as technology has a special place and interest in activity theory (Kaptelinin & Nardi, 2018), which encourages the use of technology as a tool that handles the transformation process in the activity theory and adopts it depending on the activities and the element that governs the theory, either with classical theories or the developed one.

Karanasios and Allen (2013) reported that activity theory has become an established tool for analysis through several scholarly domains including information systems (based on technology deployment for managing and processing information) and utilising semantic tools to validate the research data through a designed conceptual framework. In the context of this research, the emphasis is placed on the development of an MI activity system in the Kuwaiti Amiri Guard units, focusing on the military managerial tactics (as subjects of MI) that are performed by military leaders and their fellow rank officers (as objects of MI) to deliver strategic and operational outcomes in the areas of human resources management. In fact, the researcher argues that the theory could provide alternative perspectives for military leaders on how to arrive at innovative managerial decisions and facilitate the relevant digital and non-digital solutions to enhance the effectiveness of such decisions. It might provide action plans, social solutions, and mediators, while helping to develop a conceptual framework with further evidence from the public sector and military institutions in the Middle East. Elements of the external environment will be added to the framework to offer a systemic flow to the activity and transformation process in order to realise the required outcomes. In the context of exploring the Kuwaiti Amiri Guard's requirement for MI via an activity system, the subjects involve the organisational processes, policies, rules, and regulations; the objects refer to those individuals responsible for performing their roles within the scope of the subjects of MI; and the tools link the interaction between the subjects and objects by deploying a technological approach adopted for fostering innovation in the business model with respect to the organisational activities.

### 3.4 Applications of Activity Theory

The application of the theory has undergone important development in several studies of human uses of technology that took place in the late 1980s and early 1990s, where a significant challenge was associated with technology and information systems (Kaptelinin & Nardi, 2018). More recently, activity theory has become an established tool for analysis through several scholarly domains including information systems and using semantic tools for inquiry via a conceptual framework (Karanasios & Allen, 2013). This research focuses on presenting activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. To this end, an exploration is carried out into the military managerial measures (as subjects of MI) that are performed by the military leaders and officers (as objects of MI) by deploying advanced tools and technology (as tools of MI). Figure 3.2 illustrates the conceptual framework of this research to present the relationship between MI and activity. Elements of the external environment have been added to the framework to offer a systemic flow to the activity and transformation process in order to realise the required outcomes.

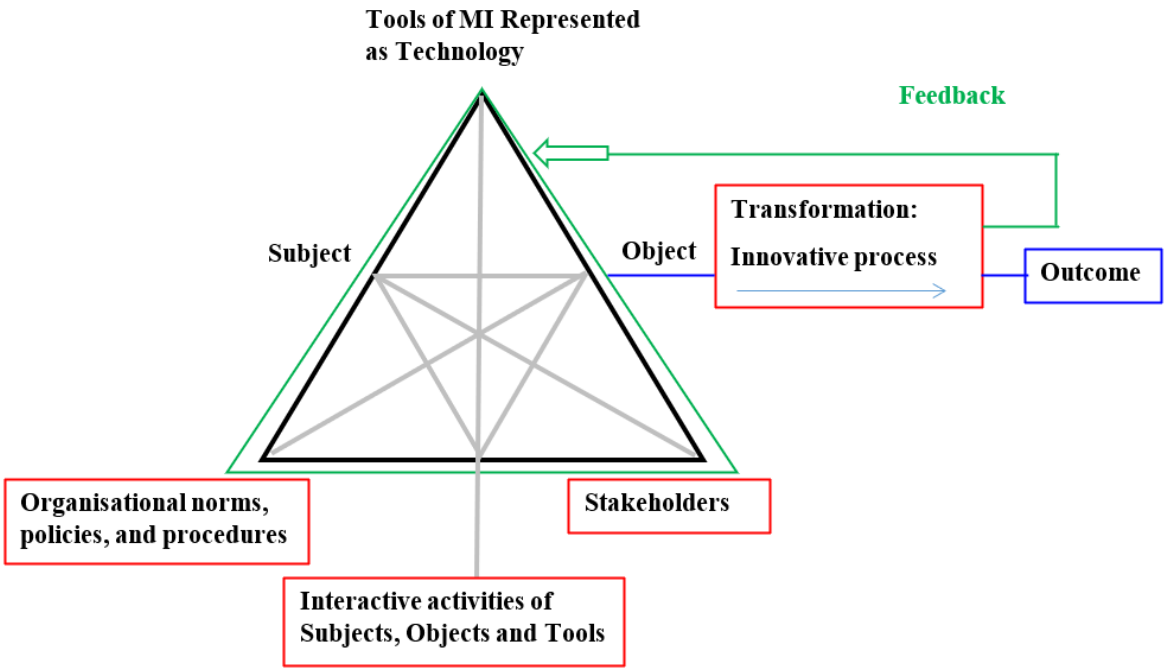



**Figure 3.2: Conceptual Framework Presenting the Interrelation of Managerial Innovation and Activity Theory**

As a conceptual framework, certain elements may need to be added and replaced in order to be matched with the context of the decision systems in human resources management such as authority, priority, complexity, relationships, and permission that represent the decision, while the technology represents a tool (mediator) that handles the subject in the transformation process reaching the object. Several researchers, particularly in the USA and Scandinavia, mention the interaction between forming human technology and the larger context of objective human activities, where the theory facilitates in achieving a deeper perception of understanding the technology and its value for people systems (Kaptelinin & Nardi, 2018).

The potential implementation of activity theory in military MI involves a range of considerations including managerial, administrative, and innovative practices that are undertaken within strategic decision boundaries or organisational strategy. Establishing a strategy from previous outcomes and the organisational vision has a significant impact, particularly within MI that contains connected parameters that interact through transformational processes to achieve the MI value-adding outcomes.

The case of MI in a military environment could have dual perspectives that include multiple tasks/practices that combine the consideration of the military obligation for administrative and military purposes. Administration perspectives of human/employees' practices could be represented as those activities within the organisation that involve the human needs necessary to perform the required tasks and performance (MI objects). However, the military perspective involves specific characteristics in terms of task completion. It may also entail different considerations that are not characteristic of a typical organisation, but has its own procedures and policies that create the processes within the required strategy (MI subjects).

While merging the discussed MI concepts (i.e., MI objects and subjects), the third proposed element is the tools that mediate the managerial activities, which could be represented as innovative technology. As mentioned in the literature review, due to the association between technology and innovation, both contain novelty. Therefore, MI tools could help to innovate administrative norms, policies, and procedures (MI subjects), thus assuming a significant role in organisations. Moreover, such tools could support in developing human capital including managers in terms of decision-making and setting strategies, thus improving human performance in an innovative manner. These tools could govern the MI

activities being performed systematically and innovatively; for example, enhancing innovative technology in an organisation through providing accurate data to decision makers, and enabling the analysis of the actual performance, which could assist them in establishing a strategy and decisions to be followed by subordinates. On the other hand, MI tools could support in the creation of innovative procedures or facilitate human tasks, while in the case of technology as a tool, the technology itself could be developed as an innovative technology that adds value to realise the MI value-adding outcomes.

The structural components extracted from the outcomes gathered from the literature enable the linking of essential needs with a tool that can facilitate human tasks within military instruction/practices to develop and achieve the decision systems/innovative process that will lead to the MI value-adding outcomes that could add value by enhancing MI in a military organisation. The conceptualised framework of MI as a system of activities thus seeks to facilitate a critical analysis in the public sector such as the military field, which could be modified following an exploration through fieldwork.

MI activity systems consider the interplay between subjects, objects, tools, and the overall outcomes from the scope of the MI. In the context of MI that involves the processes of management, systems of administrative, organisational adaption or change, and technological innovation, the allocation of the activities will depend upon the nature of the tasks of the organisation (Damanpour & Aravind, 2012).

Since the implementation of MI involves exploring the organisational setting, including the activities based on the procedural patterns, individual roles, and interlinking tools, applying activity theory for extrapolating MI in this research with a military context is a justifiable choice. Based on this discussion, the current research aims to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. From the perspective of producing resourceful outcomes, this study will explore activity theory in the MI context to highlight MI activities in the military sector, and thereby enable the construction of the pillars of MI in certain public-sector military organisations that share characteristics with the Kuwaiti Amiri Guard.

Based on the conceptual framework, the research is aimed at presenting activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, facilitating responses to the above-mentioned research gaps and responding to the three research questions: (i) what are the

mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard? (to explore the reciprocal role of the objects and subjects of MI in relation to the MI tools); (ii) how can ICTs enhance the MI in the Kuwaiti Amiri Guard? (to investigate how MI tools are deployed from the viewpoint of ICT-driven innovation and mediation of the activity interactions); and (iii) to what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard? (to apply the theory to the findings emerging from the first two research questions, and thus applying activity theory as a lens for MI activities in the Kuwaiti Amiri Guard).

### *3.4.1 Critique of the Conceptual Framework*

It is important to consider the limitations of the proposed conceptual framework, in order to remain mindful of these whilst employing it and to attempt insofar as possible to minimise their impacts. Simeonova (2018) cautioned that ICT- and information systems-related activity theory research may place excessive emphasis on technology's role. Given that the decision-making management of the Kuwaiti Amiri Guard will represent the main data source for this qualitative study, with technology a component of their daily professional lives, the researcher will need to be vigilant that the role of technology is not given unequal attention in the analysis when compared to the subjects and objects of MI in the organisation. Furthermore, although activity theory will highlight the collective nature of activity, it will be vital to ensure that the many actors involved in the activity system in the organisation are included within the lens of focus (Mursu *et al*., 2007). Moreover, the investigation will be conducted by one researcher, and therefore he will need to take considerable care to develop an in-depth understanding of activity theory, and specifically in terms of its use as a lens to investigate the target organisation, in order to avoid any inappropriate, over reliant, or underuse of the applied theory (Nguyen *et al*., 2022). Then, as highlighted by Robson and McCartan (2016), conceptual framework diagrams are rarely represented optimally the first time they are created, and therefore consensus needed to be sought from academic colleagues and the research supervisors in order to refine the iterations and arrive at the final version of the conceptual framework describing the interrelation of MI and activity theory, as presented in Figure 3.2. In terms of the work of Leontiev and Engeström presented in Figure 3.1, it is believed that the conceptual framework developed for this study takes advantage of the strengths of their activity structures, while applying the necessary modifications to suit the target military organisation of the Kuwaiti Amiri Guard. Finally, it is important that the

researcher be prepared for contradictions that may arise during the study, ranging from primary contradictions that occur within the elements of the Kuwaiti Amiri Guard activity system, to quaternary contradictions between external activity systems and that of the Kuwaiti Amiri Guard (Engeström, 1987).

### *3.4.2 Establishment of an Activity System*

In this research, the concept is MI realised with respect to the subjects, objects, and tools within the context of a military organisation of Kuwait, based on the approach of activity theory.

The activity system outperforms universal differences of scope, and logical inconsistencies amongst thought and activity, while developing mediation and perception through the environment, the socio-culture, and the target, as described by White *et al*. (2016) in their case study exploring problem structuring methods in an intervention energy context in terms of efficient planning in Bristol, UK, where activity theory was employed as an approach to study the key methodological and theoretical concerns. Soviet scholars first represented the activity system as a simple triangle involving a subject, an article, and an apparatus (see Figure 3.1, left-hand side), before revealing an issue in mental examination that constrained exploratory research to reductionist laboratory contexts detached from the settings of human lives.

Activity systems are a collective production that includes engagement from different individuals for their goals to be achieved. They represent a long-term phenomenon and comprise a framework that can be associated with multiple fields. Activity systems can be found embedded within management, innovation, teaching, scientific research, and even production units, where each system functions for a different purpose (Zott & Amit, 2010). Zott and Amit (2010) conceptualised the business model of a company as an interdependent system of activities, whereby the activity system allows the company, in unison with its partners, to engage in value creation. The authors proposed two groups of parameters for designers of activity systems to consider: (i) the elements of design (i.e., content, governance, and structure) that describe the activity system's architecture, and (ii) the themes of the design (i.e., complementarities, lock-in, efficiency, and novelty) that describe from where the value creation of the activity system originates.

The structure of an activity system is typically explored in subjective research (Karanasiso, 2018), whereby such systems will behave as a multilateral activity unit to relieve external and internal pressure on the organisation (Kittelman *et al*., 2018). The engagement in the activity enhances the level of processes while developing an interactive relationship between humans and the activities performed, which has the potential to shape the behaviour and practices among sub-departments within military units. The activity system also facilitates the establishment of laws, rules, or policies within the organisation that may result in systemic interaction.

### 3.5 Chapter Summary

This chapter proposed a conceptual framework based on activity theory to facilitate in comprehending how MI might evolve within certain public-sector military organisations. A review of activity theory was conducted, as well as consideration for how the theory can be implemented for the subjects, objects, and tools of MI. Finally, the potential applications for activity theory were considered.

In the next chapter, the research methodology to be employed in this study will be explored, discussed, and established to enable a response to the research questions, and hence the ability to utilise activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, representing a public-sector military organisation.

# Chapter 4
# Research Methodology

## 4.1 Introduction

The main aim of this chapter is to present the discussion and justification for the chosen research methodology and the research design. As stated in section 1.6, the principal aim of the study is to present activity theory as a lens for MI in the Kuwaiti Amiri Guard. The chapter begins by exploring the research methodology in terms of the research approach and the research philosophy, before establishing the research strategy to be adopted in this study. The research design is then explored and determined, including the sampling approach, the data collection instrument, the data collection process, and the data analysis approach. The need for ethical consideration and approval are addressed, as well as validity and reliability, before the chapter draws to a close with a chapter summary.

## 4.2 Research Methodology

A research methodology is an organised strategy that is vital for undertaking any study. In this regard, researchers call upon the full range of qualitative and quantitative research approaches, comprising of tests and experiments, observations, surveys, and data gathered from secondary sources (Ghauri *et al*., 2020). On the one hand, quantitative methods propose to categorise structures, calculate them, and generate statistical results to test hypotheses and enable clear interpretations (Creswell, 2013). While on the other hand, the qualitative tradition proposes to develop a comprehensive, meticulous account of interpretations, together with the background of occasions, proceedings, and circumstances (Miles *et al*., 2018).

The research methodology is a key part of this research process, since it provides the researcher with a mechanism to conduct the research in the most systematic manner to explore a phenomenon, its patterns, and implications (Saunders *et al*., 2016). In addition, the research methodology can assist the researcher in establishing the research approach and methods to be utilised in the study, with the research objectives and questions being dynamic fundamentals in terms of defining a methodology (Collis & Hussey, 2014; Vera & Crossan, 2004).

The research methodology can also be defined as a mechanism for collecting, processing, analysing, and organising the data (Polit & Hungler, 2004). In the same context, the research methodology can be seen as the theoretical application of a framework to proceed with an inquiry into the subject matter. Meanwhile, the decisions pertaining to the methodology are based on the nature of the research question(s), while the methodology enables the coherent selection of approaches, philosophies, strategies, and methods that support all the components of the research being undertaken, and with the capacity to provide data and develop findings in a manner that is suitable to the aim of the research (Cohen *et al*., 2018; Creswell & Tashakkori, 2007). The significance of the methodology in any research system can be understood as the set of applied and theoretical approaches, philosophies, and strategies that the researcher utilises in his or her study throughout the research process (Cohen *et al*., 2018). In the sub-sections that follow, the research's theoretical approach and philosophy are considered, as well as the phenomenological approach and the research strategy, in order to define the research methodology applied in this study.

### *4.2.1 Theoretical Approach*

The two main research approaches are deductive and inductive (Greener, 2011), determining a difference in the classification of the point of views (Goel & Dolan, 2004). In the deductive approach, the conceptual testing starts from a wide-ranging viewpoint to attain a narrow range of findings or presumptions (Sekaran, 2003). Deductive logic involves the testing of pre-existing concepts or theories (Robson & McCartan, 2016), with the concepts tending to signpost the type of data that requires collecting (Yin, 2016). Conversely, in terms of the inductive approach, the development of theory takes place based on the findings of the research, whereas the process of theory development is followed by the extrapolation of the study outcomes (May & Williams, 1996). Qualitative research typically follows the inductive approach, whereby the data lead to the emergence of concepts (Yin, 2016).

Expanding on the description of the inductive approach, its formulation is followed by the collection of data obtained from primary sources such as the opinions and perceptions of research participants and observations based on the logical grounds justifying the context of developed theory (Bryman, 2012). Furthermore, the inductive approach is based on scientific liberty and impartiality by analysing the data against three requirements: (i) the unintended bond between two events appears to be significant and authentic; (ii) the comments are wide-

ranging, unchanging, and precise; and (iii) the data points and the situations are identical to the point of view according to the context of the study (Greener, 2011). On the other hand, abductive reasoning is designed to identify the weakness of the inductive and deductive approaches. It is a rational technique, by which the researcher examines the unexpected section of a phenomenon through an analytical process that in the context of social life progresses from general to technical descriptions (Cassell *et al*., 2018). The researcher starts the research process by identifying the uncertain elements involved in the phenomenon, and thus the study is the activity of clarification, whereby abductive reasoning application can be noticed in the investigation of criminal or medical diagnostics (Saunders *et al*., 2019).

#### *4.2.1.1 Inductive Approach*

Premised on the aforementioned discussion, this research study is grounded in the inductive approach, wherein the inductive reasoning depends upon the effective utilisation of the specifics of the phenomenon, broad-ranging appraisals, the in-depth ability to make judgments based on understanding the data, and to construct perceptive and theoretical mechanisms via the examination of the collected data (Thomas, 2006). The direct engagement with respondents necessitates a vigorous interface and operative exchange of informative material between the researcher and the respondents; such interactions thus necessitate the implementation of an inductive approach, since its utility is documented in numerous qualitative studies (Bryman & Burgess, 1994; Dey, 2003).

This research will facilitate the process of interpretation and the generation of more idiosyncratic observations about MI in the military sector by enabling the researcher to be closely involved with the respondents (Johnson, 2015). Therefore, in the interests of this research, the inductive approach is deemed to be the most suitable due to the abundance and variety of the data that will be gathered and subsequently analysed.

### *4.2.2 Research Philosophy*

The research philosophy provides a resourceful contribution to the assumptions, norms, and principles of the research based on knowledge-oriented grounds. Based on this discussion, the definition of the research philosophy is provided as an insightful understanding of the research context, describing its logical and theoretical implications by extrapolating the constructs, features, and perceptiveness of the research (Collis & Hussey, 2014; Saunders *et al*., 2019).

In this context, the positivist and interpretivist research philosophies determine the theoretical and logical perceptions of research extrapolating the reality-based construct of knowledge involved in a study. Mainly, these research philosophies provide a divergent approach as compared to the conventional concept of the philosophical grounds of research such as the realistic paradigm and include the construct of knowledge. Other than this, axiological concepts, ontological concepts, and epistemological concepts provide an extended domain-establishing diversified direction to research philosophies (Saunders *et al*., 2019). As described above, the establishment of the theoretical ground by defining the research philosophy justifies the intention and objective of a study. To explore the validated concept of the research philosophy, three main philosophical assumptions are considered: epistemology, ontology, and axiology. Axiology is applied for a study investigating the opinions and perceptions of people on a study subject, whereas epistemology and ontology are further sub-divided with their respective domains, whereby constructivism, objectivism, and pragmatism belong to ontology and apply to the perceived reality of a phenomenon, while realism and positivism belong to epistemology and are applied in research deploying a scientific approach. The following discussion is conducted to achieve the philosophical validation of this study.

In establishing the philosophical ground with contextual validation, such as that concerned with organisational study, the realisation of concepts associated with the interpretation, explanation, understanding, and description of organisations is required. Moreover, these concepts establish a link with the concerns of organisational strategies, decision-making, change, leadership, knowledge, and learning within the concerned organisational context (Fayard *et al*., 2016; Roundy & Fayard, 2019). This discussion pursues the notion of exploring a systematic perception for validating the philosophical ground of organisational research (Tsoukas *et al*., 2020). The conceptualisation of the philosophical assumption within organisational research aims to justify the knowledge-based ground of the study, verified against the theoretical concepts, followed by the scholarly practice of the study context (Kokkalis & Zundel, 2010; Sandberg, 2005; Tsoukas *et al*., 2020; Zundel & Kokkalis, 2010). In evidence of this discussion, the philosophical assumptions initiate from the term *ontology*, providing a descriptive definition for validating research based on the approach adopted for the exploration of reality associated with its structure, and its nature of existence associated with the perceptions of the social world (Crotty, 1998). According to Creswell (2009), ontological assumptions are related to the paradigm and the ever-evolving

construct of reality; that is, whether it is shifting, steady, or multiple. On the other hand, an updated explanation of ontology was defined by Saunders *et al*. (2019) as the assumptions concerned with the nature of reality, providing a means for shaping research objects including management, organisations, individuals, events, and artefacts within an organisation. The second domain of philosophical assumption leads to the exploration of epistemological assumption that derives the establishment of philosophical ground through knowledge-based assumptions constituting legitimate and valid characteristics for the determination of a means through which to communicate the knowledge with others (Burell & Morgan, 1979). In this context, ontology based on the social world provides a relevantly abstract philosophical assumption, and epistemology defines a comparatively concrete and obvious ground of knowledge, deployed for the multidisciplinary aspects of business, such as the extrapolation of numerical to visual and textual data, and generating stories, narratives, and facts from opinions (Saunders *et al*., 2019).

#### *4.2.2.1 Philosophical Extremes*

Along with the selection and validation of philosophical assumptions, the critique of the dimensional approach should be verified, which as described by Saunders *et al*. (2019) diverges into the two extremes of *objectivism* and *subjectivism*. For instance, the approach to objectivism depicts the evaluation of a phenomenon related to a social context in the management system of an organisation, such as the requirement of a role in management being based on the description of the roles and responsibilities of individuals adhering to a structural hierarchy regarding the designated duties, and hence resulting in the successful implementation of operations within the organisation. Generally, the structural framework holds similarity in the organisational domain, and hence presents a similar essence and justifies the application of objectivism (Saunders *et al*., 2016). On the other hand, the second extreme of philosophical assumption that extends to *subjectivism* is concerned with the aspect of humanities and arts, justifying the formulation of social reality based on people's perceptions and the outcomes of their relevant actions, with the application of subjectivism being located within the approach of analysing a variety of realities within the scope of an investigated phenomenon (Saunders *et al*., 2019). Since quantitative research has a tendency to be associated with objectivism, whereas qualitative interpretivism in the social sciences seeks to comprehend the participants' subjective experiences (Cassell *et al*., 2018), qualitative researchers have a tendency to recognise subjectivity, with qualitative research aiming for

internal generalisability, as opposed to the statistical generalisability sought by quantitative research (Easterby-Smith *et al*., 2015).

#### *4.2.2.2 Philosophical Paradigm*

Exploring the philosophical paradigm for a study based on a business and management paradigm, the five major philosophies are interpretivism, critical realism, postmodernism, positivism, and pragmatism. It is crucial to state that there is no preferred philosophy to adopt in terms of underpinning a research project, as each philosophy has its individual merits and approach to the pursuit of understanding the world (Saunders *et al*., 2016).

The concern for interpretivism is associated with the concept of a social world such as validating the management aspects of business reflecting the involvement of individuals based on the interaction of circumstances at a particular time (Saunders *et al*., 2019). Social constructionism may be referred to as an interpretivist approach, implying how people understand and interpret the social world in which they live (Gergen, 2009). In terms of critical realism, the philosophy has been described as a compromise between constructionism and positivism, but with greater emphasis on the latter (Easterby-Smith *et al*., 2015) and the recognition that social life is created by the acts of human beings, which then externally impacts upon them (Ackroyd & Fleetwood, 2000). The central concept of postmodernism is that claims regarding knowledge must be established within the conditions of today's many perspectives of class, gender, and race, as well as other group associations (Creswell & Poth, 2018). Postmodernism has also been described as a response to the contemporary cultural transformations being witnessed today that involve art and architecture, literature, philosophy, and the social sciences, and lead to the requirement for new approaches to understanding and thinking about the world around us (Crotty, 1998). Lincoln and Guba (1985) described positivism as value-free research that focuses on a single reality and the search for findings free of time and context, with emphasis placed on cause-and-effect investigations, while Yin (2016) referred to the positivist world view that the sciences, and therefore the social sciences, are grounded in absolute universal truths. Pragmatism claims that since people are active in their natural world, meanings that are associated with life are linked to past actions and behaviours, and therefore cannot be said to possess any independent reality (Cassell *et al*., 2018). Pragmatist researchers thus encourage proceeding

with the investigation directly as opposed to becoming preoccupied with theory (Robson & McCartan, 2016).

As previously established, the key focus of this research is to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. Therefore, this environment is indicative of the diverse reactions of engaged social actors/respondents that translate into individual perceptions regarding the subject matter. In this context, the interpretivist assumptions/approach of this research will incline towards the subjectivism of the case in terms of exploring the current phenomenon and understanding MI concepts in the Kuwaiti Amiri Guard (Easterby-Smith *et al*., 2015).

As the purpose of this study is to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, the interpretivist philosophy is deemed appropriate because interpretivism recognises that there are multiple ways of inferring the workings of the world, as no point of view can ever provide a comprehensive understanding of all the dimensions, while there could be several realities that comprise the basis of the research at hand to cognise the perceptions of all the stakeholders of the Kuwaiti Amiri Guard and interpret the phenomenon of MI from their multiple perspectives (Saunders *et al*., 2009).

#### *4.2.2.2.1 Social Constructivism*

While selecting the extreme of philosophical assumption, the term *managerial innovation* (see section 2.4) provides a reflective and simultaneously different approach to management and entrepreneurship (where entrepreneurship is linked as a driver of innovation (Cankar & Petkovsek, 2013; Kleysen & Street, 2001; UN, 2017), whereby the term *management* refers to the adoption of a concrete approach as reflected by objectivism, and the term *innovation* is perceived within the approach of subjectivism, since subjectivity represents the emotional and symbolic production of the human experience (González Rey, 2013). Therefore, the less extreme approach of social constructivism is found to be applicable for the context of this study. The justification for selecting social constructivism is accordant because of its contextual domain reflecting the perspective that the formulation of reality is dependent on the interaction of social actors by the sharing of their partial experiences and perceptions (Saunders *et al*., 2019). Moreover, according to social constructivism, meaning is constructed by people as they interact and interpret their engagements (Robson & McCartan, 2016), and with such meanings being multiple and varied, the researcher needs to seek to

understand the complexity of individuals' perspectives, as opposed to the narrow meanings of a small number of ideas or categories (Creswell & Poth, 2018). Based on this discussion, the application of social constructivism justifies that the interviewed participants within the Kuwaiti Amiri Guard management perceive the term *MI* under the influence of social interaction and the shared practices and activities fostering the application of MI within the described subjects (processes or activities within the organisation), objects (the individuals assigned with their respective roles), and tools (the integration of ICT aspects).

### *4.2.3 Phenomenological Approach*

Introduced by Edmund Husserl and further advanced by Martin Heidegger, phenomenology strives to examine the paradigm of human experiences as they interact with the human perception and consciousness (Finlay, 2011; Friesen *et al*., 2012). Over recent decades, phenomenology has developed into a sophisticated qualitative research approach, primarily due to the research community witnessing a shift from the largely deductive quantitative research methods to their inductive research counterparts (Saunders *et al*., 2019).

Phenomenology has drawn increasing attention in the sphere of the public as well as the private sector such as education, social work, healthcare, socio-psychology, and the military (Friesen *et al*., 2012). However, this interest has also contributed to the propagation of the approach with limited agreement on what establishes the methodological system, leading to discussion regarding how to embark on the phenomenological research process (Dudovskiy, 2019). Two extensive types of phenomenology can be recognised, descriptive and hermeneutic, where both are immersed in the respective philosophical practices of Husserl and Heidegger (Finlay, 2011).

The absolute importance of the descriptive phenomenological approach is to investigate insightful and practical experience based on the interaction of human consciousness and perceptions, whereby the description of the obtained data formulates a relatable link with the data regardless of the theoretical implications. According to Husserl, this is termed as *grounded theory*, which is suitable for identifying the philosophical grounds, based on the principles of epochē (i.e., the suspension of judgment), eidetic reduction and intentional analysis. Fundamentally, the researcher should be capable of handling a phenomenological approach and to suspend any previous knowledge, assumption, or personal point of view (Neubauer *et al*., 2019). Conversely, interpretative or hermeneutic methodology

is established on the belief that such an interruption of previous knowledge, assumption, or personal perspective is extremely difficult to accomplish, and that the results reflect the description of experiences. This is because academic findings are overwhelmed with the philosophical, theoretical, literal, and interpreting prism that features the experiences of humans hinged on allegorical awareness and the unhindered mind. The vital origins of this method are Heidegger, Paul Ricoeur, and Hans-Georg Gadamer (Finlay, 2011).

Moreover, a contemporary phenomenological tradition that does not simply fall into either side of the Husserlian and Heideggerian, or the descriptive hermeneutic divide, is interpretative phenomenological analysis (Finlay, 2011).

#### *4.2.3.1 Interpretative Phenomenology*

Interpretative phenomenology is inductive by nature, involving no previously formed hypotheses and employing an institutional framework to comprehend the meanings that respondents attach to their lived experiences (Reid *et al*., 2005). Interpretive phenomenological analysis has gained popularity in academic circles, to the extent that it has developed into a principal qualitative research approach (Tuohy *et al*., 2013). It brings to the forefront of scientific inquiry a stimulating framework based on an in-depth and multi-dimensional examination of the convergence and divergence with respect to the existing experience (Smith *et al*., 2009). First introduced by Jonathan Smith, the construct of interpretative phenomenological study represents an assimilative hermeneutic phenomenology of the psychological experiential approach that is equipped to interact with the conventional socio-psychological school of thought, along with the other disciplines (Finlay, 2011; Smith, 1996). In the same vein, the structured methodology of a qualitative nature offered by interpretative phenomenology has gained significant traction in the domains of human, healthcare, and social research.

Involving the deployment of interpretative phenomenology, the most dynamic criticism is that the approach involves certain limitations. Firstly, as per several other phenomenological techniques, the interpretation could fail to offer satisfactory understanding of the language utilisation (Willig, 2008), since meaning allocation and attribution occur through the framework of narratives, discussion, and allegories, amongst others. Moreover, despite one of the most important determinations of interpretative phenomenology being to advance the esoteric understanding of the experience, it is continuously entangled with etymological matters (Smith *et al*., 2009). The claim that the interpretative method is aligned

with the frame of cognisance makes it vulnerable to criticism, in that some characteristics of phenomenology are not well suited to the subject of cognition, since the element of cognisance in phenomenology is tacit in nature (Willig, 2008). Nevertheless, it is claimed that the interpretative phenomenological precondition of sense creation and meaning allocation, which incorporates formal reflective consideration, links with the psychology of cognition (Smith *et al*., 2009).

Interpretative phenomenology is therefore selected for use in this study as it facilitates in exploring two primary investigative goals: to conduct an in-depth investigation of lived experiences, and to provide a comprehensive interpretation to comprehend said experiences (Dudovskiy, 2019).

### *4.2.4 Research Strategy*

This section establishes the research strategy pertinent for use in this study, considering both the applicability of quantitative and qualitative research, as well as the case study for this investigation.

#### *4.2.4.1 Quantitative Research*

Quantitative research is defined as the methodical study of phenomena via the collection of quantifiable data and applying statistical, computational, and mathematical techniques of analysis (Creswell, 2013). Quantitative research gathers data from participants through instruments such as questionnaires, surveys, and polls. Then, the collected data are processed and analysed to arrive at results that are illustrated in a numerical form (Dudovskiy, 2019). After cautious deliberation of the numerical results, researchers are able to predict the future course of the subject matter.

The quantitative research strategy is suitable for a range of scientific domains, such as economics, sociology, psychology, and marketing (Dudovskiy, 2019). Moreover, the strategy is pertinent to an in-depth study of the interactions amongst a range of variables to determine the causality, to identify the reasons, to derive the results through examination of the relationships, and to calculate the future direction (Saunders *et al*., 2019). Quantitative research depends on the pragmatic accumulation of data in a quest to prove or disprove previous or current results (Denzin & Lincoln, 2000). In utilising the quantitative research strategy, it is of the utmost importance to collect primary data through authentic mathematical

measures (Saunders *et al*., 2019). Moreover, quantitative data collection approaches depend on structured data collection approaches such as random sampling (a quantitate technique), which facilitates in quantifying, comparing, and reducing the data to arrive at the research findings (Bryman & Bell, 2015). Essentially, the quantitative technique concentrates upon the testing and detecting of the cause and effect of any phenomenon via the computation of numerical data, where such techniques tend to be performed in isolation of the lived experience in terms of feelings and beliefs.

Since quantitative research seeks the collection of numerical data to examine the relationships between variables and to prove or reject hypotheses, while this study applies an inductive social constructivist approach alongside interpretivist phenomenology to determine meaning as constructed by people, and applies activity theory as a lens to perceive MI in the Kuwaiti Amiri Guard, the quantitative research strategy was rejected for use in this research.

#### *4.2.4.2 Qualitative Research*

As has been established, interpretative phenomenological analysis and social constructivism are part of the qualitative research tradition (Miles *et al*., 2018; Robson & McCartan, 2016). Qualitative research discovers and cognises the abstract sense people attribute to their lived observations and experiences. Qualitative investigations seek to illuminate subtle abstract meanings, along with the examination of the intricacies of social conditions and settings (Creswell, 2013). Qualitative means are inductive, and thus operate in tandem to explore the fundamental questions of *what*, *why*, and *how*, in contrast to the *how much* and *how many* favoured by the quantitative research tradition (Dudovskiy, 2019). Furthermore, qualitative research is intended to examine people's observations, practices, and experiences, and thus intentionally avoids any quantitative fixation with calculating, computing, and extrapolating, to rather engage in relating, exploring, describing, understanding, and interpreting (Finlay, 2011).

There are numerous diverse epistemological origins for qualitative traditions, but they come together in the framework of how abstract sense can be constructed in different patterns (Moran, 2000; Spinelli, 2005). Researchers endeavour to observe and study concepts as well as phenomena in natural conditions, and attempt to establish the sense of, or infer the connotations people attribute to their lived experiences in commonplace etymological ways (Flick, 2014; Moran, 2000). Furthermore, the exceptionality of the qualitative probe is its empirical understanding of the multifaceted interactions amongst phenomena and its

undeviating interpretation of the actions and events. Therefore, the emphasis is placed upon seeking to discover the indicators of unforeseen and predictable interactions in cases or phenomena. Researchers achieve this by utilising their judgment while accepting how their presumptions influence the data formed via subjective reflexibility in terms of self-inquiry and self-appraisal during qualitative research (Saunders *et al*., 2016). Moreover, qualitative research aims to comprehend the esoteric viewpoints of the participants, and thus the tradition is emic and idiographic (i.e., compared with itself) in nature (Saunders *et al*., 2019).

The qualitative tradition can also be utilised to discover less identified or understood subjects or phenomenon to support the quest for new knowledge and to position it more centrally in the body of knowledge. Likewise, the approach is applicable when a precise in-depth interpretation of a phenomenon is required to discover an intricate course and to illuminate the complex and multiple layers of lived human involvement (Smith *et al*., 2009). Qualitative studies enable the gathering of a vast body of information about a specific phenomenon grounded in the documented data, which generates a far-reaching understanding of the experience manifesting in the social world (Bansal, 2013).

It is important to note that the research questions regulate the data collection of the qualitative tradition (Saunders *et al*., 2019). Moreover, the data are evaluated inductively to comprehend the connotations the participants attribute to their lived experiences. Additionally, the interpretive element empowers the researcher to develop perceptions and insights in the context of the data gathered. In doing so, the researcher must apply the elements of curiosity, empathy, broad-mindedness, and flexibility to pay impartial attention to the people recounting their stories in their own natural settings to understand how their experiences and behaviours are influenced and formed by the perspectives of their socio-cultural, socio-economic, socio-political, and historical worlds (Miles *et al*., 2018).

In terms of the approach of this research, the most prevalent criticism of qualitative research is the possibility of biased, rigour deficient, and anecdotal outcomes (Queirós *et al*., 2017). However, these concerns can be controlled if a systematic and considered approach is formulated for implementing the relevant technique of a qualitative research methodology. On the other hand, the research quality involving qualitative research includes significant dependency on the individual skills of the researcher, while the framework of research is vulnerable to idiosyncrasies and personal biases (Anderson, 2010). Along with this, the limitation of qualitative study includes the challenges of maintaining, assessing, and

demonstrating rigour, while the large volume of collected data can cause time complexity concerns in terms of the interpretation (Queirós *et al*., 2017). Furthermore, the nature of qualitative study involving face-to-face interviews with participants can lead to the potential concerns of the confidentiality, anonymity, and verifiability, and considerations for the social and ethical aspects of humans while collecting, analysing, interpreting, and presenting the final outcomes of the research (Anderson, 2010). Meanwhile, validity and reliability are also threatened, specifically due to the nature of qualitative data, in terms of the credibility and objectivity of the research concerning the authenticity of the collected data, and justifying the extrapolation of the data with consistency, stability, and reusability (Anderson, 2010; Queirós *et al*., 2017).

Nevertheless, qualitative research, as argued by Creswell (2013), refers to an inquiry process that includes the collection and analysis of data to aid in the understanding of experiences, opinions, and concepts. Qualitative research aims at solving problems through subjective evaluation such as appraising value and merit (Check & Schutt, 2012). According to Edson (1986), there are methods of collecting data that help to establish qualitative understanding, but there is no specific method for qualitative research. Qualitative research has also been defined as a broad category of theories that involves different methods of inquiry that improve our understanding of social phenomena (Merriam, 1998). The qualitative research methodology is mostly preferred by researchers when they are investigating new fields of study, such as the Kuwaiti Amiri Guard, or when they want to practically confirm and theorise well-known issues (Check & Schutt, 2012). Questions that underscore the value of understanding how social experience is generated and provided with meaning are the motivation for the importance given to the subject. Therefore, designing qualitative research in the area of MI offers value for the examination of the social experience. As Denzin and Lincoln (2000, p. 8) asserted:

> The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency.

With activity theory focused on offering a different lens for the analysis of outcomes and processes, the qualitative approach is well suited (Hashim & Jones, 2014). Furthermore, as opposed to representing a prescriptive theory, activity theory is a descriptive tool that dovetails with qualitative research and the need to understand individuals (Creswell, 2007), while activity theory is socio-constructivist, a research paradigm employed in this study and

that along with interpretative phenomenology align well with the qualitative tradition (Sam, 2012). Therefore, with this study aiming to present activity theory as a lens for MI in the Kuwaiti Amiri Guard, the qualitative strategy of research is thus selected as it enables focus on the lived experiences, narrations, and connotations of the organisational members, particularly to the degree of understanding the dimensions of MI in the Kuwaiti Amiri Guard.

#### *4.2.4.3 Case Study*

According to Yin (2014), case studies involve in-depth inquiries that explore a phenomenon or topic from within its actual setting. The case may refer to an association, a change process, an event, a group, an organisation, a person, or many other subjects of focus (Saunders *et al*., 2016). The case study strategy has the potential to generate rich insights through the investigation of the phenomenon of interest in its real life setting (Yin, 2014). In the contemporary era of fusion between the social sciences and technology, the case study provides a managerial and administrative framework to conduct research, as focus points are utilised in the genre of study (Mills *et al*., 2010). The sample size confines the findings of the case study, but without oversimplifying the findings (Flyvbjerg, 2011). A case study can be defined as an in-depth descriptive representational model for the research, that is, it is also related with the dominant cultural and institutional value systems (Yin, 2018). The case study "is a description and analysis of an individual matter or case … with the purpose to identify variables, structures, forms, and orders of interaction between the participants in the situation" (Mesec, 1998, p. 383). As a result, the case study entails a comprehensive demonstration of its fundamentals, exchanges, and variables, together with the authentic description of the case being studied or appraised. Moreover, it considers the facets of the human as well as the material situation inside the setting of the case. In the same vein, the case study proposes to elucidate the underlying relations that led to a problem, and hence there is a need to study the underlying reasons that can only be acquired via pertinent participants in the case to gather data that will enable a response to the study aim and objectives (Flyvbjerg, 2006). Qualitative researchers frequently face challenges in terms of determining where the case starts and ends. In abstract terms, a case can be defined as "a phenomenon of some sort occurring in a bounded context" (Miles & Huberman, 1994, p. 25).

The case study implies its structural concept involving the investigation of complicated situations and analysing multiple ranges of variables; this suggests the case study as a viable selection for a research focus involving the investigation of MI concepts, whereas

it also involves a limitation in terms of establishing a cause–effect relation for producing accordant conclusions, and may cause the generalisation of data to become a complicated task (Queirós *et al*., 2017). Moreover, the deployment of case study is limited to the research subject, including a contemporary phenomenon based on real-life contexts, when the boundary between the investigated phenomenon and the research context is not clear (Timonen *et al*., 2018).

With Stake (2005) arguing that cases studies are defined by the researcher's interest in the case itself, as opposed to the research methodology employed, while the case study is frequently employed by interpretive researchers (Willis, 2007), the case study is selected as a research strategy well suited to exploring the MI phenomenon in the Kuwaiti Amiri Guard.

### *4.2.5 Summary of the Research Methodology*

In response to the aim and context of this study, the research philosophy is based on the inductive approach, with the application of social constructivism to help the researcher understand the complexity of the individuals' perspectives, and interpretative phenomenology applied to enable an in-depth investigation of the participants' lived experiences, while case study and the qualitative tradition are employed to provide a managerial and administrative framework to conduct the research. Table 4.1 summarises the research methodology employed for this study.

**Table 4.1: The Research Methodology of the Study**

| | |
|---|---|
| **Research Approach** | The **inductive approach** will facilitate the process of interpretation and the generation of observations about MI from the in-depth data that will be gathered and analysed from the Kuwaiti Amiri Guard. |
| **Research Philosophy** | **Social constructivism** will help to understand and interpret the social world in which the participants' engage.<br>**Interpretative phenomenology** will complement social constructivism by offering a comprehensive interpretation of the participants' lived experiences. |
| **Research Strategy** | **Qualitative research** is ideally suited to this novel investigation of the Kuwaiti Amiri Guard due to its fit with the inductive approach and social constructivism complemented by interpretative phenomenology.<br>**Case study** in conjunction with activity theory and the qualitative approach will be utilised to help explore the MI concept and use in this military context. |

## 4.3 Research Design

The research design is an organised layout determining the study plan for the collection of data to enable its examination and interpretation by data analysis techniques (Fouche & De Vos, 2011). The primary qualitative research method of interviews forms the basis of this study, which then informs the design of the data collection instrument and the approach to select the sample from which to gather the study data.

### *4.3.1 Interviews*

In every scientific inquiry, the researcher utilises a range of tools suitable for his or her research to obtain pertinent information and arrive at the results of the study. In this regard, researchers utilising the qualitative tradition frequently rely on interviews, observations, and documents for their data collection (Creswell, 2007). Notwithstanding the wide variety of methods that can be utilised in the data collection process in numerous categories of research, some researchers have underscored the interview as a fundamental instrument in qualitative studies (Dudovskiy, 2019). In addition, the interview is an operative tool in instances where data cannot be retrieved through other means, or to enable access to an inclusive and assimilated pool of information that has the potential to reproduce the authenticity of the phenomenon more effectively than the limited view reflected in questionnaires; therefore, the lived experiences and perceptions of the social world that the respondents refer to and describe are studied by the researcher with the application of interviews to gather qualitative data (Saunders *et al*., 2019). Along with the other attributes, verbal communication allows the interviewer to obtain evidence from the participants by means of collaborative discussion, consequently providing the participants with the opportunity to communicate their opinions and life experiences from their own perspectives of the world at large (O'Dwyer, 2004).

Qualitative interviews have been categorised as structured, semi-structured, and unstructured (Robson & McCartan, 2016). In structured interviews, the interviewer will follow a fixed sequence of questions in a specific order, where the response categories may be predetermined (Easterby-Smith *et al*., 2015). Structured interviews are useful where the researcher is clear what is known and unknown, whereby he or she can frame the questions accurately to gather the required data (Lincoln & Guba, 1985). Conversely, unstructured interviews are suitable where the researcher is unclear of what is unknown, which can then be

explored and highlighted through interviews with no structure or boundaries (Cohen *et al*., 2018).

Amongst the most prevalent type of interviews, the semi-structured interview is the most obliging in terms of the data collected; that is, semi-structured interviews encompass some aspects of both the structured and unstructured interview (Dudovskiy, 2019). Semi-structured interviews refer to extensive interviews, where the respondents answer open-ended questions. These interviews are usually conducted with an individual or a group and take a period of around 30–60 minutes to complete; the method follows a predetermined schematic presentation of questions established in the interview schedule (Cohen *et al*., 2018). The interview schedule helps interviewers to optimise their interview time by exploring the respondents' views comprehensively and systematically, while also ensuring that the interview adheres to the topic of interest. The interview schedule formulates the main question of the research and other related questions, and signposts the interviewer's familiarity with the literature (Flick, 2014). Audio recording of data during interview sessions is encouraged because it ensures the effective collection of accurate data, as well as noting the use of intonation or sarcasm (Robson & McCartan, 2016). However, the interviewer and the researcher must agree to the recording of the information provided, and in some cases recording may not be permitted or preferrable, whereby the researcher must then strive to accurately record the verbatim responses while avoiding any attempts at summarising or consolidating during the interview (Bachiochi & Weiner, 2004). Semi-structured interviews involve questions being formulated and interviews planned ahead of time. During the actual interviews, the lines of inquiry are adhered to as a means of following-up on any unexpected change that may arise. According to Charmaz (2006), an intensive interview is the same as a controlled conversation. Therefore, the researcher focuses on encouraging the participants to talk while listening, applying sensitivity, asking open-ended questions, and maintaining open-mindedness. Also, the interviewer maintains control over the discussion with the respondent, such as ensuring that the discussion moves in the direction of the research interest. Charmaz (2006) further highlighted the qualities of an interview and suggested that the role of the interviewer is mandatory for shaping the direction of the conversation, with the concrete aim of obtaining the outcome of the study.

Semi-structured interviews enable the interviewer to revise the phrasing and to familiarise with the individual interviewees, as well as allowing the inclusion of follow-up

questions not contained within the original interview schedule (Cohen *et al*., 2018) that could investigate additional perspectives provided by the interviewee and enhance our understanding of the practical concepts of MI in the Kuwaiti Amiri Guard. Moreover, the interview represents the preferred choice of instrument in terms of the study's specific national setting since (i) respondents across the Middle-East have a preference for communicating through verbal channels as opposed to providing written responses, (ii) adjusting to cultural norms can help to collect richer data (Hawamdeh & Raigangar, 2014), and (iii) Arab participants feel more at ease when the interviewer has the same cultural background (Bohnet *et al*., 2010). Therefore, more in-depth responses are possible through the interview due to the potential to communicate clearly, in an interactive manner, and with intention. Meanwhile, the interviewer can note the non-verbal communication (e.g., the facial expressions and physical movement) that offer additional insight and depth to the interviewees' responses (Cohen *et al*., 2018).

Based on the above discussion, the contextual underpinning of this research justified the accordance with the interview approach; therefore, semi-structured interviews were selected and the questions were designed by following the outcomes of the literature review and application of activity theory as a lens for MI, particularly in the context of the Kuwaiti Amiri Guard as a military public-sector organisation.

#### *4.3.1.1 Design of the Semi-Structured Interviews*

In utilising the semi-structured interview tool, the researcher forms purpose-driven questions that can be explored without losing the chain of the subject (Saunders *et al*., 2016). Moreover, semi-structured interviews are valued for their interviewer-friendly nature in that the questions, material, and system are arranged prior to the designated time for the interview, thus indicating that the researcher is ready and competent. The interview design in this study was developed by the extracted MI concepts from the systematic literature review, which facilitated the development and conceptualisation of the framework informed by activity theory, and thus led to the interviews being purposive and related to the selected sample.

In this research, an evaluation exercise was conducted in the field through an exploration of the workflow of the managers within the Kuwaiti Amiri Guard departments, which created the potential to address questions to the top management staff at the strategic level, along with those at the tactical and operational tiers.

Kvale's (1996) approach was then employed to planning and conducting the interviews, by progressing through the following stages: (i) thematising, where the aim of the research was confirmed; (ii) designing, whereby the interview schedule was developed by translating the research aim and objectives into interview questions; (iii) interviewing, where the actual interviews were conducted; (iv) analysing, whereby the gathered data were analysed through template analysis with the application of grounded theory and through the lens of activity theory; (v) verification, where the findings were presented to the organisation for review; and (vi) reporting, whereby the findings were written-up and presented in this thesis.

As a result of the literature review and the aforementioned scoping exercise, a provisional interview schedule was developed that comprised of a series of open-ended questions that offered the advantages of flexibility, the ability to gather rich data, and the likelihood of developing rapport and cooperation with the participants (Robson & McCartan, 2016). Open-ended questions are used to gather facts and to better understand the attitudes and behaviours in the target organisation (Saunders *et al*., 2019). Probing follow-up questions were also prepared such as "Could you give me an example?", which would allow the researcher to seek elaboration, clarification, qualification, or exemplification in order to gain rich, comprehensive, and in-depth responses (Cohen *et al*., 2018).

#### *4.3.1.2 Developing and Translating the Interview Schedule*

Once the initial English language interview schedule was complete, it was necessary to refine the schedule further. This was achieved through a number of developmental stages. First, the researcher tested the questions within the schedule for logic and unambiguity with academic colleagues, while feedback was also sought from his academic supervisors. The intention here was to ensure that the questions were well designed, unambiguous, and appropriate for the interviews, since this is a prerequisite for the investigation of case studies (Yin, 2018) to ensure that rich data will result (Yin, 2016). The interview questions (see Appendix I) were also mapped against the objectives, research questions, and conceptual framework domains (see Appendix II) in order to confirm the specific purpose of each question, and ensure that all the research questions and objectives would be responded to through the interviews (Cohen *et al*., 2018). Next, the interview schedule was translated into Arabic, since this was the language in which the interviews would be conducted. Great care was necessary to ensure that no alteration or loss of the original meaning occurred, since

researchers conducting research in one language and reporting in another need to ensure the rigor in their processes (McKenna, 2022). Therefore, the English and Arabic versions of the interview schedule were checked by academic colleagues fluent in both languages, who were able to verify and contribute towards the accuracy of the process. Finally, the interview schedule was piloted to ensure the appropriacy of the instrument and increase the researcher's ability to conduct stimulating and safe interviews (Kvale, 1996).

### *4.3.2 Pilot Study*

Piloting was carried out in this study to validate the reliability of the research instrument and its ability to provide accurate results (Cohen *et al*., 2018). Moreover, a pilot study provides a useful framework to check the feasibility of complex research, augmenting the success rate of the research by reducing the propensity of risks related to the sampling size, while allowing early scrutiny of the main study (Thabane *et al*., 2010). Besides testing the interview schedule, the objective of the pilot interviews was also to follow Kvale's (1996) guidance and therefore to (i) develop the researcher's ability to come across as *knowledgeable* during the interviews; (ii) improve the *structuring* of the interview in terms of opening, asking the questions, and closing; (iii) ensure that the questions were perceived as *clear and unambiguous* by the interviewees; (iv) conduct *effective* interviews where the participants would be able to respond at their own pace; (v) develop the researcher's *sensitivity* to the responses received; (vi) improve the researcher's ability to *steer* the interviews in a direction that would ensure the optimum amount of rich data could be gathered; (vii) practise the taking of notes during the interviews, *remembering* other elements, and then collating these immediately after the interview was complete; and (viii) ensure an effective *interpretation* of the responses from the participants.

The four participants for the pilot interviews comprised the Head of the Kuwaiti Amiri Guard, the Head of the Human Resources Department, the Head of the Intelligence and Security Department, and the Head of the Operations and Training Department in the headquarters. As a result of the responses to the pilot study, enhancements were made to the interview questions to ensure that they could (i) be more easily responded to, and (ii) more accurately respond to the research questions. For example, Interview Question 1 was simplified by asking the first part as the main question to introduce the topic and explore the general understanding of MI (*What do you know about managerial innovation?*), with the

next part as a follow-up to explore the conceptual understanding of innovation and creativity (*What is your concept of innovation and management creativity?*). It was also determined that Interview Question 16 (*To what extent can the establishment/work of developing a special unit of innovation/managerial innovation consist of specialists under the management of the Head of the Kuwaiti Amiri Guard?*) would be best responded to by the leader of the organisation only, due to the emergence of his authority and the top-down leadership approach in the organisation. Finally, from a procedural perspective, the pilot interviews enabled the researcher to develop his interviewing skills and conduct efficient interviews in the main data collection phase (Yin, 2016), as the heads of branches and unit leaders were under strict time pressures due to the demands of their role. The later implementation of the interviews to collect the primary data for the study involved the understanding that the interview schedule was left open for correction and change, regardless of its extensive preparation and piloting. This was because adjustments and changes may need to be made to the interview schedule as the information collected in the field starts to accumulate (Galletta, 2013).

### *4.3.3 Sampling*

Sampling involves the selection and identification of participants who are well informed in terms of the target phenomenon, and with sufficient experience and knowledge to contribute their insight (Etikan, 2016). Due to the impracticalities of selecting an entire population, a sample typically needs to be selected (Saunders *et al*., 2019). In probability sampling, it is possible for any member of the target population to be included in the sample, while any sampling approach where this is not the case is referred to as non-probability sampling (Dudovskiy, 2019). In non-probability sampling, the researcher uses his or her own judgement to ensure that the research aim will be achieved (Robson & McCartan, 2016), with non-probability sampling commonly used in case studies (Cohen *et al*., 2018) since qualitative samples tend to be purposive rather than random (Miles *et al*., 2018). Purposive sampling is a non-probability approach that is commonly utilised in qualitative research to select participants that can offer rich information and ensure the optimum utilisation of the available resources (Etikan, 2016). Moreover, the sampling approach enables the researcher to select a sample that satisfies their particular needs, and can be used to access those with in-depth knowledge due to their role or experience (Cohen *et al*., 2018).

In this study, the senior management in the Kuwaiti Amiri Guard ranked major and above (see Figure 1.2) comprised the population for the case study, since these individuals represented the decision-makers in their units/departments who would be well placed to respond to the inquiry regarding MI activities within the organisation. Once the organisational approval for the study had been received from the Head of the Kuwaiti Amiri Guard, the contact details for the study population were provided to the researcher by the Head of Operations and Training and the Head of Human Resources. According to Easterby-Smith *et al*. (2015), organisational researchers frequently require the cooperation of gatekeepers, who are powerful members that can facilitate or refuse access to the population under investigation. With access granted to the study population, the researcher commenced the recruitment and data collection process by adopting the purposive non-probability sampling technique, whereby the researcher selected the sample based on his judgement (Robson & McCartan, 2016).

Through the application of grounded theory, the initial purposive sampling commenced the data collection process, which the researcher then analysed. Once the initial analysis of the data was complete, and the codes generated (see section 4.3.5.1), theoretical sampling was employed to collect additional data (Mills *et al*., 2014). The aim of theoretical sampling is to enable the researcher to follow-up on leads that arise in the data through the inclusion of new study participants (Bryant & Charmaz, 2006), and therefore the researcher used the insight gained from the initial interviews to inform the directions for further participants to be invited to participate in the study.

In terms of the sample size in non-probability sampling, Saunders *et al*. (2016) asserted that there are no fixed rules, and therefore the sample size is dependent upon the research questions and objectives. Moreover, Robson and McCartan (2016, p. 162) stated that the data should be continuously collected and analysed until the researcher notices "diminishing returns" and no new insights are being gathered. Meanwhile, Saunders *et al*. (2019) agreed on the notion of continuing to collect qualitative data until data saturation is reached, although they cautioned that this still does not provide a precise number or guide range of participants that are required for inclusion in the sample.

The researcher therefore followed this guidance and commenced contacting, recruiting, and interviewing participants from the Kuwaiti Amiri Guard, and engaged in the analysis of the data between interviews through grounded theory so that he could track the

progress and richness of the data being collected. This process was continued until it was determined that the point of theoretical saturation (Cohen *et al*., 2018) had been achieved, by which time a total of 25 participants had been recruited and interviewed, thus representing the sample for this study.

#### *4.3.3.1 The Study Sample*

Table 4.2 clarifies the positions of the 25 interview participants, their rank, and length of service in the role.

**Table 4.2: The Participants' Rank, Position, and Experience/Years in Role**

| # | Gender | Position | Experience (years) | Participant code |
|---|---|---|---|---|
| 1 | Male | Head of the Kuwaiti Amiri Guard | 32 | 1-HA-32 |
| 2 | Male | Head of Branch 1 | 23 | 2-HB1-23 |
| 3 | Male | Head of Branch 2 | 18 | 3-HB2-18 |
| 4 | Male | Head of Branch 3 | 23 | 4-HB3-23 |
| 5 | Male | Head of Branch 4 | 24 | 5-HB4-24 |
| 6 | Male | Head of Branch 5 | 21 | 6-HB5-21 |
| 7 | Male | Head of Branch 6 | 22 | 7-HB6-22 |
| 8 | Male | Head of Branch 7 | 20 | 8-HB7-20 |
| 9 | Male | Head of Branch 8 (Head of VIP Escort) | 30 | 9-HB8-30 |
| 10 | Male | Unit Leader 1 | 20 | 10-UL1-20 |
| 11 | Male | Unit Leader 2 | 21 | 11-UL2-21 |
| 12 | Male | Unit Leader 3 | 23 | 12-UL3-23 |
| 13 | Male | Unit Leader 4 | 20 | 13-UL4-20 |
| 14 | Male | Unit Leader 5 | 18 | 14-UL5-18 |
| 15 | Male | Unit Leader 6 | 19 | 15-UL6-19 |
| 16 | Male | Unit Leader 7 | 21 | 16-UL7-21 |
| 17 | Male | Unit Leader 8 | 15 | 17-UL8-15 |
| 18 | Male | Unit Leader 9 | 19 | 18-UL9-19 |
| 19 | Male | Unit Leader 10 | 15 | 19-UL10-15 |
| 20 | Male | Unit Leader 11 | 22 | 20-UL11-22 |
| 21 | Male | Unit Leader 12 | 15 | 21-UL12-15 |
| 22 | Male | Unit Leader 13 | 18 | 22-UL13-18 |
| 23 | Male | Unit Leader 14 | 19 | 23-UL14-19 |
| 24 | Male | Unit Leader 15 | 18 | 24-UL15-18 |

| | | | | |
|---|---|---|---|---|
| 25 | Male | Unit Leader 16 | 19 | 25-UL16-19 |

### *4.3.3.2 The Management Structure of the Organisation*

The Head of the Kuwaiti Amiri Guard is the top authority that shapes the organisational policies and creates the relevant culture of MI. Then, the heads of eight branches are responsible for coordinating the MI activities at different departments, who report to the Head of the Kuwaiti Amiri Guard. Within the branches, there are associate unit leaders who plan, implement, and report the relevant innovation activities to the middle and top management. The participants could thus demonstrate MI aspects from multiple dimensions depending on the nature of the management at each unit.

The research involved understanding MI activities and how these can be utilised in the military sector (government/public sector). In the context of the research, the public sector is represented by the Kuwaiti Amiri Guard because it involves public-sector practices as well as the organisational performance and military duties. In addition, the Kuwaiti Amiri Guard manages protocol practices for the Emir of Kuwait and his visitors, with its own internal units featuring tasks that include training, human resources, and logistics (military duties), which need to be managed appropriately. Therefore, improved understanding of MI could be useful and enhance the Kuwaiti Amiri Guard's management, processes, and performance. Figure 4.1 presents an organigram to describe the management structure of the organisation.

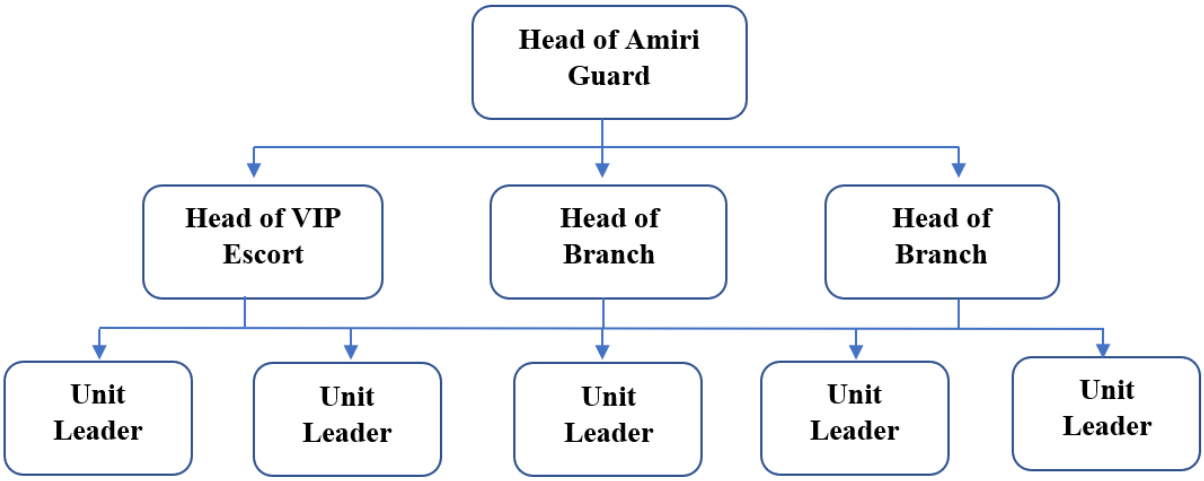



**Figure 4.1: Organigram Representing the Management Structure of the Kuwaiti Amiri Guard**

### *4.3.4 Data Collection*

Data collection took place across two phases (Allen *et al*., 2011), as described below.

#### *4.3.4.1 Familiarisation*

The process of familiarisation involved extracting the core elements that developed the understanding of the study context (Karanasios & Allen, 2013): the use of MI tools represented as technology, and the organisational norms, policies, procedures, and stakeholders. Forsgren and Byström (2017) highlighted the benefits that can be realised from utilising contacts to facilitate in the process of familiarisation, with the researcher of this study using his established relationships to gain access to the organisation and its members. The fieldwork entailed an evaluation exercise by exploring the status of the managerial workflow in the military departments in the Kuwaiti Amiri Guard, which created a line of questioning for the participants in the strategic top management, as well as the tactical and operational levels.

To mitigate the paucity of literature on the area of MI in the military field, the investigation focused on the military departments of the Kuwaiti Amiri Guard, and therefore the Kuwaiti information systems' context, while the intervention and exploration was through the literature and semi-structured interviews at three levels (i.e., top management, middle management, and operational) that flowed from the strategic to the operational level. Moreover, the required responsibilities and performance were reviewed such as the primary activities, considerations in decision-making, authorities, challenges, and the roles of technology.

#### *4.3.4.2 The Interviews*

The interview focus was placed on the key actors who establish the strategy, and those subordinates who implement the tasks in military departments in the Kuwaiti Amiri Guard such as management and the path of decision-making from strategic to operational decisions. To realise a critical perspective, multiple statements and perspectives were verified using the above-mentioned familiarisation (Karanasios & Allen, 2013); for example, when one of the unit leaders (13-UL4-20) cited a lack of funds available to invest in the latest technology (see section 6.2.6), this perception was checked with other unit leaders in subsequent interviews.

The interviews were conducted in person in Kuwait in January and February 2020, both on the military base and in the Amiri Palaces, with Robson and McCartan (2016) highlighting that although cost- and time-intensive, the strengths of face-to-face interviews are the ability to ask complex questions, the development of a relationship with the interviewees, and controlling the order of the questions, with low levels of response bias resulting.

The researcher strived to project a positive impression, with Wilhelmy *et al*. (2016) finding that the main intention of interviewers is to convey authenticity and attractiveness, with the secondary intention being to convey closeness and distance. To achieve this, a dress code should be considered depending on the context of the study domain and the target audience of the study, and in the case of this study's context of the Middle East, the researcher dressed formally since he was meeting with military professionals who would similarly be dressed formally (Saunders *et al*., 2019). Moreover, since the interviews were conducted with Kuwaiti nationals in Kuwait, the Arabic language was used as the medium to conduct the interviews and ensure that the interviewees felt comfortable and would be clearly able to both understand and respond to the questions asked (Saunders *et al*., 2016). The researcher arrived at the venue earlier than the respondents, which allowed him time to review the interview room and prepare for the interview itself.

In order to accurately collect data during the interviews in this military-sector context, the following process was adopted. The researcher entered the room and greeted the participants. The participants were then asked to read and sign a consent form, to confirm that they had read the information sheet regarding the study and that they agreed to voluntarily participate, with the ability to withdraw their consent at any time made clear without the need to provide any justification. The researcher then explained that he would be asking a series of questions, while taking detailed short-hand notes of the participants' responses. According to Yin (2018), the researcher's handwritten notes represent an important part of the case study database, with the main requirement that these notes are organised, complete, and accessible for later analysis. Furthermore, Saunders *et al*. (2016) asserted that note-taking shows the importance of the interviewees' responses to the researcher, while also allowing the opportunity for the researcher to record his or her own thoughts. All notes were taken in Arabic, with the researcher striving to capture the precise colloquialisms, labels, and terminology used by the interviewees through following the *verbatim principle* (Yin, 2016).

The participants were also offered the opportunity to write their responses during the interview, which the majority elected to do to support this data collection in a military context where audio recording was not permitted. The interview questions were presented in accordance with the interview schedule (see Appendix I), with some extended to provide both the interviewer and the respondents with the flexibility of offering necessary information and seeking further details through follow-up questions (Cohen *et al*., 2018).

After each interview, which lasted approximately 45–60 minutes, the researcher read back his notes and any written responses from the interviewees to check with the participant officers that these were an accurate reflection of their perceptions. Therefore, the participants' interview responses were validated within the interview process, thus reducing the risk to validity that arises during qualitative research through validating the participants' raw data, and ensuring interviewee empowerment by providing greater control over their responses (Mero-Jaffe, 2011). Then, the researcher transcribed any short-hand notes and noted down any other observations while his mind was still fresh from the interview, which agrees with Yin's (2016) recommendation that as soon as possible the researcher should review these notes and fix any fragments, incomplete sentences, or other issues that might prove more difficult to clarify later in the research process. The researcher also had the opportunity to conduct follow-up meetings or phone calls to seek further clarification of the interview responses, due to the participants' willingness to support the case study research. These Arabic language interview notes and written responses were then translated into English, with the translations again verified by academic colleagues to confirm the validity and accuracy of the translations, since great care was required to ensure that the meanings embedded within the original Arabic notes were authentically reproduced into English (Saunders *et al*., 2016). In particular, Usunier's (1998) guidance was followed to ensure that the syntax and grammar, as well as the lexical and any idiomatic meanings were accurately translated from the original. Grounded theory was applied during the data collection and analysis, whereby the researcher referred back to the literature and to qualitative observations throughout, which helped to shape later data collection and analysis based on the perspectives that arose (Heydarian, 2016).

Based on the above-mentioned process, qualitative data were collected from the participants through face-to-face semi-structured interviews with a schedule of open-ended questions that covered the key concepts raised in the conceptual framework, to explore the subjects, objects, tools, and outcomes of MI (Dudovskiy, 2019).

### *4.3.5 Data Analysis*

Qualitative data analysis refers to a reflexive process that involves the identification, examination, and interpretation of textual data, and determining how the information provided in the textual data helps answer the research question(s) (Stake, 1995). The researcher notes down the necessary information including the meaning of the text and how the text relates to other issues of concern. These notes are usually written next to the researcher's field notes or interview transcripts. Data analysis is a continuous process that prevails throughout the period of the project. The researcher can adjust the data collection method if there is a need for additional concepts to cover new relationships identified, in a process called progressive focusing (Parlett & Hamilton, 1972). Qualitative data interpretation requires intense discipline, as well as patience due to its complex and dynamic nature. The dynamic aspects of the qualitative data interpretation include a range of steps that comprise moments of revelation, jubilation, exasperation, and shifts (Engel & Schutt, 2016). The interpretation process (reflecting the variation in the perceptions and observations of the researcher and the interpreted data) typically entails frequent shifts between the data and the analyser. There is always an audience present, but it tends to be invisible, with the researcher and the texts representing the two focal points. Figure 4.2 visually describes the oscillating process of data interpretation.

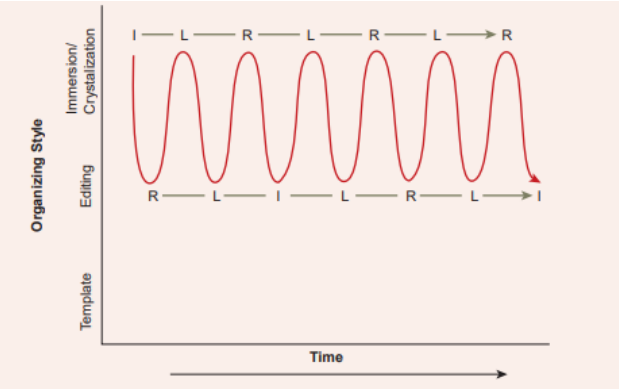



**Figure 4.2: Components of the Data Analysis Process (Schutt, 2012)**

According to Crabtree and Miller (1999, as cited in Schutt, 2012), three distinct modes for reading the text are involved in the qualitative analysis of data: (L) when the researcher first reads the text literally, and the focused is placed on its literal content and form; (R) when the researcher reflectively reads the text and focuses on how his or her

orientation informs the focus and interpretation; and (I) when the researcher interpretively reads the text, attempting to achieve his or her understanding of the meaning embedded within the text.

Qualitative data analysis requires different techniques that include the documentation of the data and the process of data collection; the organisation of the data into concepts; the development of relationship between concepts; and representing the account, which entails reporting the findings of the study (Yin, 2016). The qualitative data analysis process begins in the field, where the researcher identifies possible problems and concepts that may help in understanding the topic of interest. Reviewing the notes and transcripts is an important step of the data analysis process, where the researcher can make short and summarised notes in the margin that can help in identifying important statements and highlight opportunities for coding the data.

Thematic analysis is a technique of qualitative data analysis. Although this technique requires an unbiased approach by the researcher (Javadi & Zarea, 2016) to prevent the erosion of validity (Braun & Clarke, 2006), it is used extensively in qualitative data analysis (Bryman, 2012).

#### *4.3.5.1 Template Analysis*

Template analysis is a type of thematic analysis (Brooks *et al*., 2015) that uses hierarchical coding and is a form of metric analysis. Template analysis typically involves data made up of interview transcripts (Lockett *et al*., 2011), but may include any kind of textual data including focus groups (Kirkby-Geddes *et al*., 2013), diary entries (Waddington & Fletcher, 2005), and open-ended responses to a written questionnaire (Dornan *et al*., 2002; Kent, 2000). Template analysis does not refer to the explicit differences between interpretive and descriptive themes, nor does it provide for coding structure approaches (King, 1998). Rather, the data in template analysis is only studied in terms of the interview transcripts. Since this research of MI in the Kuwait military employed interviews as the data collection technique, template analysis assisted in extracting the pertinent data that could then be presented in the results.

The template analysis technique was utilised in this research, which is considered a form of thematic analysis that is commonly used in qualitative research (Brooks *et al*., 2015). It involves a form of thematic analysis employing hierarchical coding that has a high relative

degree of structuring and analysis of textual data, which is extensively used in qualitative psychology research (King *et al*., 2018). Template analysis enables researchers to characterise subjects in advance of the analysis process (King, 2012). The technique involves the development of hierarchical coding for a certain template, and was chosen to facilitate in the analysis of the textual data collected from across the departments of the case study in this research.

The main steps of template analysis followed in this study are described below, based on King (2012):

1) The data gathered from the interviewees (i.e., their written responses, along with the researcher's short-hand notes and post-interview summaries) were first read repeatedly, in conjunction with the fieldnotes taken from the scoping exercise.
2) Preliminary coding of the data was carried out using NVivo, due to its ability to handle large volumes of data in a short period of time (Robson & McCartan, 2016).
3) Once the labels for the categories and subcategories had been identified, coding the data involved considerable highlighting and decision-making regarding where to assign each chunk of text.
4) During the allocation of codes to the sub-categories and categories, the researcher gave consideration to how these related to, and between each other.
5) The final coding template was established that reflected the sub-categories, categories, and themes that emerged from the template analysis.

Within these template analysis steps, three types of coding were involved in the coding process, as proposed by Noble and Mitchell (2016):

- **Open coding** involved the extraction of codes to identify the key concepts and phrases line by line, to develop meaningful insight for the categorisation and theme development process. Open coding enabled the reflecting on the responses by breaking the data down into conceptual components, allowing the comparison of the respective data collected from each respondent.
- **Axial coding** entailed the categorisation of the extracted codes, thereby assisting in the generation of themes. Axial coding was carried out by establishing the relationships between the identified categories, and then establishing connections between these.

- **Selective coding** involved the development of themes by identifying the core category and establishing a methodological means of relating the data identified for one category with other subsequent categories, as well as authenticating and refining the categories. Those categories identified through selective coding were then integrated.

#### *4.3.5.2 Grounded Theory*

Grounded theory is a research tradition immersed in the production of theory, which is grounded in data that have been collected and scrutinised. Grounded theory is utilised to reveal the nature of social relationships/interactions, as well as the interrelationships/correlations, and performance (actions, attitudes, and behaviours) of collective groups, known as social developments (Charmaz, 2006). It was established in California by Glaser and Strauss (1967) during their study titled *Awareness of Dying*.

Grounded theory represents an effort to advance a set of designs to conduct authentic qualitative research since it utilises inductive approaches to the processing of data (Easterby-Smith *et al*., 2015). The researcher enjoys the space to initiate his or her investigation without any preconceived notions and with the absence of any pre-existing theory or hypotheses, while allowing for a theory to materialise directly from the data collected for the research (Glaser & Strauss, 1967). Moreover, the researcher can carry the grounded theory techniques into the territory of interpretive social sciences, excluding the assumption of the reality of a one-dimensional external realism (Charmaz, 2006).

The specific attempt of deploying grounded theory is limited to the investigation of the real world, where interview data are normally utilised. From this perspective, the deployment of grounded theory requires the researcher to conduct the interviews with expertise and knowledge (Allan, 2003). Furthermore, an obvious criticism of grounded theory is the diversity of coding techniques, reflecting the time-intensive, non-rigorous, and consistently iterative process involving constant comparison (Allan, 2003; Timonen *et al*., 2018).

According to Rivers *et al*. (2019) in their investigation into human–human and human–computer interaction in the context of designing collaborative interfaces, grounded theory and activity theory were found to offer useful and interesting results. Moreover, Charmaz (2005) suggested that researchers should apply grounded theory more frequently

due to its considerable potential for developing theory, while Seaman (2008) claimed that if grounded theory is perceived as an approach, then it possesses compatibility with additional theoretical frameworks such as activity theory. Batuik and Sacks (1981) drew comparison between the philosophies underpinning symbolic interactionism (the parent discipline of grounded theory) and activity theory, with Seaman (2008) highlighting that although the methodological emphasis of activity theory is human interaction and culture's reciprocal relationship, the methods for the data's collection, management, and interpretation of data are frequently only superficially specified.

Grounded theory was applied during the data analysis stage of the study, which involved the critical appraisal of the data to help to inform appropriate coding and the emergence of themes from these codes (Heydarian, 2016), with the theoretical analysis and development then taking place (Noble & Mitchell, 2016; Strauss & Corbin, 1994). Moreover, in contrast to the standard approach of collecting data, coding, and then analysing the data, through grounded theory and theoretical sampling these three stages occurred simultaneously, whereby the data were collected, analysed, and coded for each interview (Bryant & Charmaz, 2010; Charmaz, 2014) until theoretical saturation occurred (Cohen *et al*., 2018). Furthermore, memo writing is an important component of grounded theory (Saunders *et al*., 2019), and in this study the researcher maintained notes throughout the research and particularly during the data analysis whereby he kept a record of how the codes were being used and how they changed during the research process, as well as recording other thoughts that arose in terms of how the research process could develop and how the data could be analysed. According to Birks and Mills (2015), writing memos is considered to be a vital pillar to ensure that quality prevails when applying grounded theory, while Stern (2007) referred to memos as the metaphorical mortar that is used to build understanding, with the data representing the building blocks. Therefore, memos offer an audit trail that tracks the historical research process, including the researcher's feelings and thoughts (Birks & Mills, 2015). Furthermore, theoretical sensitivity was applied throughout the data analysis, which Strauss and Corbin (1990) described as the insight into what is significant and meaningful in the data, while Birks and Mills (2015) defined theoretical sensitivity as the researcher's ability to identify pertinent data that emerges. Therefore, to remain theoretically sensitivity in this study, the researcher kept both an open mind while also striving to notice significant data during the data collection and analysis. Through the data analysis process, grounded theory was developed based on the responses of the participants and the systematic literature review,

ascertaining the development of theory by presenting activity theory as a lens for MI in the military sector based on the selected subjects, objects and tools within the organisational context.

### *4.3.6 Summary of the Research Design*

Table 4.3 summarises the research design selected for use in this study, whereby the research design engages with the qualitative method of interviews, with template analysis and grounded theory applied during the data collection and analysis.

**Table 4.3: The Research Design of the Study**

| | |
|---|---|
| **Data Collection Instrument** | **Semi-structured interviews** were selected to collect the primary data for this research as they facilitated in collecting in-depth insights from the interviewees, as well as allowing the inclusion of follow-up questions. |
| **Sampling Approach** | **Purposive non-probability sampling** was applied, with participants recruited until theoretical saturation had been achieved. |
| **Data Analysis** | **Template analysis** involved the analysis of the interview transcripts with NVivo, the extraction of codes to develop categories and sub-categories, the categorisation of the codes, and theme development.<br>**Grounded theory** was applied during the data collection and analysis, which helped to shape later data collection and analysis based on the perspectives that arose, and contributed to the development of theory. |

## 4.4 Visual Summary of the Research Methodology and Design

The diagram in Figure 4.3 presents a visual overview regarding the adoption of relevant approaches, philosophies, strategies, and methods for formulating a logically and theoretically validated research methodology and design for this study.

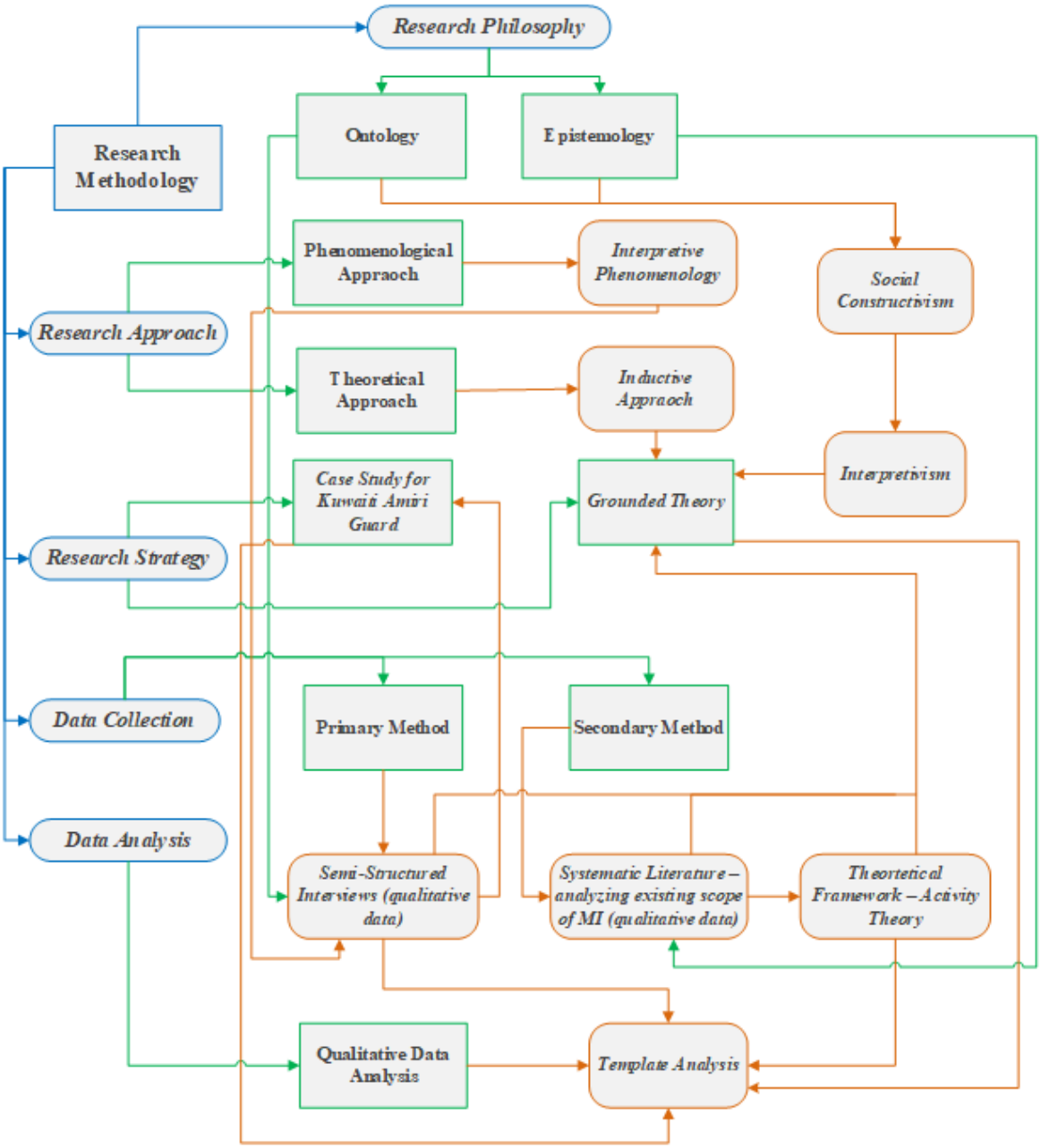



**Figure 4.3: Logical Diagram of the Research Methodology and Design**

(*Note*: The colour coding of the connecting lines is hierarchical, where the blue-line relationships represent the higher-order components of the research design, followed by the green-line connectors and then the orange-line connectors)

### 4.5 Ethical Considerations and Approval

Elo *et al*. (2014) elaborated that ensuring trustworthiness in the results of qualitative studies is important, and the analysis approach should reflect this trustworthiness. According to Elo *et al*. (2014), the preparation, organisation, and reporting of data are the three main phases involved in the processes of inductive and deductive data analysis. The use of long units of meanings in the qualitative analysis process can be challenging, because the units of meaning can consist of more than one sentence and have numerous interpretations (Graneheim & Lineman, 2004). Since individuals are distinct entities with different reactions to questions, adopting a contextual and reflective approach throughout the period of a study is an essential and integral requirement for ethical qualitative research interviews. Moreover, interviews can explore unexpected areas depending on the direction of the conversation.

Brinkmann and Kvale (2005) explained that excessive curiosity and the temptation to shift attention to the most interesting elements of the study are some of the major dangers related to conducting interviews. Interviewers are obligated to keep the information provided by the respondents confidential, and therefore any leak of such data poses a threat to the respondents' confidentiality and privacy. Cashmore (2006) explained that while the individuals involved in a study may not be identifiable to the public, they may well be identifiable to their peers also involved in the study, or to those who know of the existence of the study. Along with this, informed consent is the first extensively examined process where the respondents are informed on the need for privacy and confidentiality, and how this will be achieved (Flick, 2014).

Based on the above-mentioned concerns, the interview process ensured the maintenance of ethical standards, as the respondents were provided with full details of the study and the participation requirements before the interview process took place (see Appendix III), and were required to sign a consent form before being able to participate in the study (see Appendix IV); moreover, the private and confidential information of participants has been anonymised to comply with the privacy and confidentiality requirements of ethical standards. Ethical approval for the research was received in January 2020 from the University of Salford's Research, Innovation and Academic Engagement Ethical Approval Panel (see Appendix V).

### 4.6 Validity and Reliability

Qualitative research interviews, according to Myers and Newman (2007), can be problematic and are rarely predictable. This is because qualitative interviews seek the participants' perspectives, allow the researcher to deviate from the interview schedule, involve flexibility, and seek rich detailed responses (Bryman, 2012). Nevertheless, these circumstances can lead to greater levels of engagement through the asking of open-ended questions that seek to understand the research phenomenon from the participants' point of view (Yin, 2016).

Reliability relates to accuracy and precision, and whether the research findings would be similar if carried out in a similar manner on a similar group of respondents (Cohen *et al*., 2018). This study thus presents the research design utilised for the data collection and analysis, to allow the research to be reproduced at a future point in time. According to Kvale (1996), reliability relates to the research findings in terms of consistency, and particularly the impact of asking leading interview questions. Therefore, the researcher carefully developed the interview questions to avoid implying a preferred response.

Validity refers to correctness and truth, with valid arguments being convincing, justifiable, and well grounded (Kvale, 1996). The concern of validity is the extent that the research findings and methods lead to a precise representation of the research phenomenon (Easterby-Smith *et al*., 2015), and the integrity of the study conclusions (Bryman, 2012). During the data collection process, the researcher checked the participants' responses at the end of the interview process, and had the opportunity to contact the participants for follow-up questions or to clarify points. Therefore, the risk to validity during the data collection in this qualitative research was reduced through the participants being able to validate and control their responses (Mero-Jaffe, 2011). Validation of the findings requires the determination of what types of validation are suitable for the study at hand, as well as which community is best suited for the validation process (Kvale, 1996). In this study, the internal and external validation of the findings (Bryman, 2012) were carried out by presenting the resulting theoretical MI framework to three military organisations in Kuwait. The internal validity of the findings was determined through the Kuwaiti Amiri Guard (the case study), while the external validity of the findings was determined via two organisations within the Kuwait Ministry of Defense—the Head Office of Budget Management and the Budgeting Department of the Kuwait Airforce— as presented in section 8.4.

## 4.7 Chapter Summary

This chapter provided a detailed description of the methodological framework (see Figure 4.3) designed by applying an edified analysis of the theoretical and logical aspects within the study context. To achieve this, the researcher considered, determined, and described the systematic procedure for conducting this research. For this, a theoretical description of the research methodology was presented, signifying the selection of the research approach, research philosophy, research strategy and research design. In terms of the research approach, the inductive approach was selected due to its ability to facilitate the interpretation and the generation of observations about the target phenomenon. Social constructivism and interpretative phenomenology were chosen as the research philosophy, justifying the contextual domain of this study that involves exploring the concept of MI activities in the Kuwaiti Amiri Guard departments regarding the organisational activities concerned with the involvement of the human component, stakeholders, organisational policies, and technology implementation based on the participants' experiences and the investigated theoretical approach.

Through the selected philosophy, the qualitative research strategy was selected based on the case study, facilitating the data collection method of semi-structured interviews, which was deemed to be viable to explore the experiences and perceptions of authoritative individuals in the Kuwaiti Amiri Guard regarding the concept of MI activities as aligned with the perspective of activity theory. To analyse the data, template analysis and grounded theory were selected to explore the perceptions of the research respondents, and to enhance the likelihood of rich data emerging from the responses of the study participants.

The next chapter presents the case study coding, where the coding and categorisation of the data collected from the semi-structured interviews takes place. Chapter 5 thus lays the ground for the case study data analysis, to be carried out in Chapter 6.

# Chapter 5
# Case Study Coding

## 5.1 Introduction

As discussed, the main aim of this research is to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. Therefore, the data analysis for this study included the deployment of template analysis and grounded theory. The case study involved the collection of qualitative interview data, and thus required a qualitative data-analysis technique in the form of template analysis and grounded theory to generate the codes, sub-categories, categories, and themes for military MI at the Kuwaiti Amiri Guard. The case study coding presented in this chapter represents one of the methodological contributions of this study, with the coding approach applicable to other military context with settings similar to the target organisation.

In the case study exploration, the researcher pursued an effective investigation by utilising open-ended interview questions, thus ensuring a meaningful analysis of the participants' responses could be carried out, while avoiding any emotional or professional harm to either the interview participants or the organisation by following the strict protocols required by researchers in the field, as described in section 4.5.

The following research questions were used to guide the investigation:

RQ1: What are the mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard?

RQ2: How can ICTs enhance the MI in the Kuwaiti Amiri Guard?

RQ3: To what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard?

In this chapter, template analysis and grounded theory are discussed as key components of the data analysis process. The chapter also addresses the theoretical sensitivity that was applied during the coding process to help the researcher identify the relationships that exist amongst the categories and develop the grounded theory relevant to the case study

(Glaser, 1978). This chapter thus involves the processing of the study data, to enable the case study analysis to be conducted in Chapter 6.

## 5.2 Template Analysis

The process of template analysis includes a method of hierarchical coding based on the analysis of textual data, thus enabling the characterisation and categorisation of data in a structured form (Brooks *et al*., 2015; King, 2012). The data analysis process is initiated from the extraction of codes, leading to the development of structured categories.

This coding process was developed to explore the case study, and this helped to formulate the proposed framework based on the codes extracted from the interview data, which were then inferred for sub-categorisation and categorisation (Saldana, 2008). The process of coding was achieved by following two main patterns: (i) the conceptualisation of the responses, and (ii) NVivo coding that included the verbatim participant responses. In terms of qualitative data analysis, NVivo is well supported and available in institutions, and thus the computer package is often the preferred option for researchers (Robson & McCartan, 2016). Yin (2018) reported that software for the analysis of qualitative data has become more functional and diverse, while Cohen *et al*. (2018) asserted that NVivo enables interview data to be stored and organised by category, and for searches to be carried out to support the analysis process.

The data analysis process was carried out by (i) analysing the interview data using NVivo, (ii) extracting the codes from the interview data for the formulation of sub-categories and categories, and (iii) categorising the extracted codes (see Appendix VII), with grounded theory applied throughout this coding process including memo-writing (Birks & Mills, 2015), until theoretical saturation had occurred (Cohen *et al*., 2018). Finally, the themes were developed as an activity system grounding the conceptual framework by proposing activity theory as a lens for MI in the Kuwaiti Amiri Guard.

## 5.3 Grounded Theory

Grounded theory involves the collection and analysis of data, whereby the theoretical analysis and development occurs after the primary and secondary data have been gathered (Noble & Mitchell, 2016; Strauss & Corbin, 1994). Grounded theory requires the application

of inductive reasoning, and therefore three techniques were necessary for its implementation: coding, memo-writing, and theoretical sampling (Bryant & Charmaz, 2010). During the data analysis phase of the study, grounded theory was applied to critically appraise the data and support appropriate coding and the emergence of themes (Heydarian, 2016). In a deviation from the conventional approach of collecting, coding, and then analysing the data, through grounded theory these three stages occurred iteratively, with the data collected, analysed, and coded for each interview (Charmaz, 2014) until theoretical saturation had been achieved (Cohen *et al*., 2018). In terms of the coding, data were extracted from the interviews that could then be analysed according to the selected variables of this study (see Appendix VI for an example of the NVivo codes extracted for interview question 1). Social constructivism and interpretative phenomenology, which are highly emphasised by qualitative traditions as determined in section 4.2, were utilised to comprehend the meaning of the studied phenomenon.

### 5.4 Data Analysis

Figure 5.1 represents the data analysis process of this research, highlighting the use of case study, interview transcripts, template analysis, and grounded theory to facilitate the data analysis in this study.

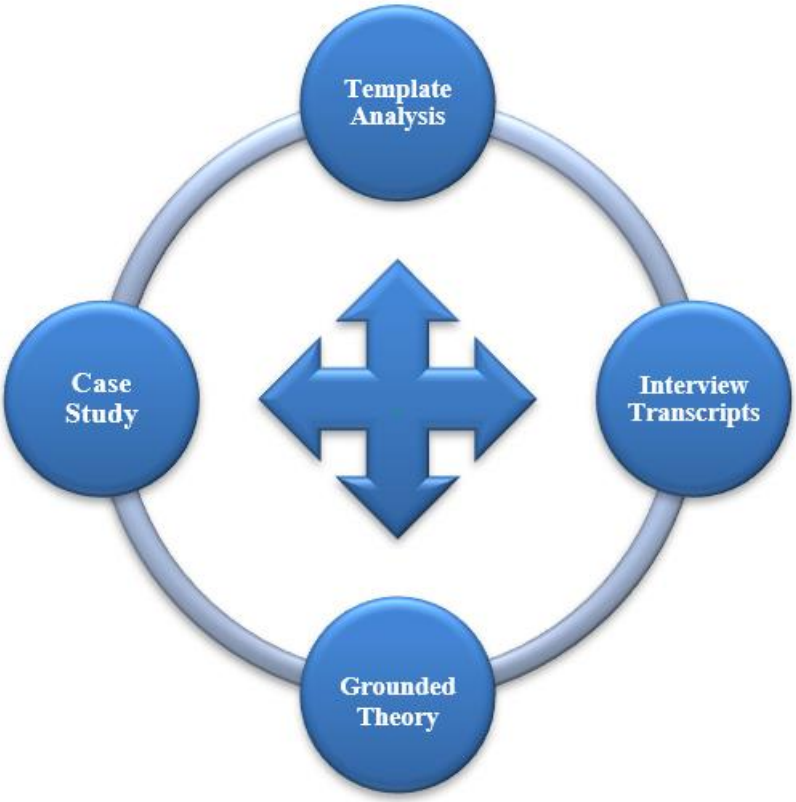



**Figure 5.1: A Visual Representation of the Data Analysis Process for this Study**

It can be seen from Figure 5.1 that the interview data generated from the case study were analysed using template analysis, with grounded theory applied to enable the development of categories and themes that would result in the proposed framework for MI. Moreover, all the data analysis components presented in the figure were interconnected.

### *5.4.1 Coding*

Coding was carried out by applying and reapplying codes to the qualitative data for the sole purpose of segregation, grouping, and re-grouping the collected data to enable the formulation of a consolidated perspective that could provide meaning and justification for the findings of this research.

Through the coding process, the data were systematically organised by grouping and sub-grouping into categories (DeCuir-Gunby *et al*., 2010). The extracted codes comprised a system of words and letters to facilitate the interpretation of the linguistic data through purposeful meaning (Saldana, 2016).

Figure 5.2 presents the data coding process, with the resulting codes, sub-categories, and categories that emerged in response to the sixteen interview questions included in the semi-structured interviews with the 25 participants from the Kuwaiti Amiri Guard presented in tabular form in Table 5.1.

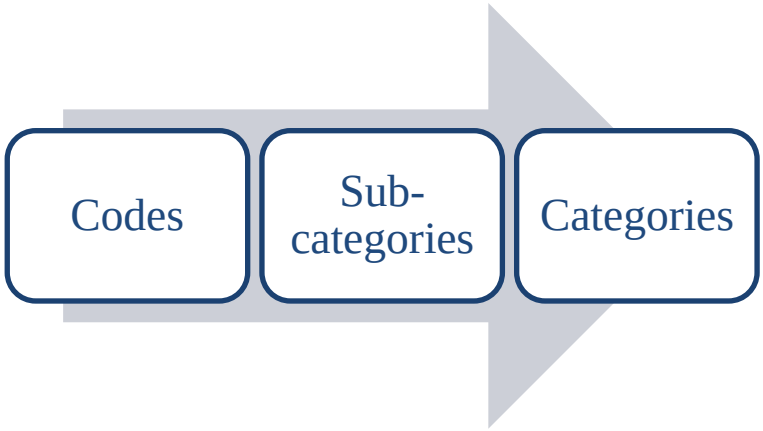



**Figure 5.2: The Data Coding Process for this Study**

**Table 5.1: The Codes, Sub-Categories, and Categories Resulting from the Data Coding Process**

| Qs* | Codes | Sub-Categories | Categories |
|---|---|---|---|
| 1–2 | "Innovative way/new method to accomplish managerial tasks"<br>"The work of management in a coherent manner among individuals is the best possible way to achieve the goals of the administration"<br>"Development of the mechanism of managerial work (the curriculum of study and organisation of the mechanism of the management)"<br>"Facilitate work in management"<br>"Achieving the unit's goals in the shortest time and least cost"<br>"It is employing the ability of the right person in the right place"<br>"Managing work in a way that suits most of the subordinates"<br>"Limited contributions to the development of managerial innovation due to the difference of the departments, time availability, the interactivity of manpower, and the technical component" | - MI<br>- Organisational process, policies, rules, and regulations | - Subjects of MI |
| 3–5 | "Linkage with state institutions"<br>"Listen to suggestions and open the door to discussion"<br>"Using modern means and advanced technology"<br>"Investing in available resources and in human energies and talents through training, courses, and skill development (and encouragement and support)"<br>"Establish specific department for development"<br>"Understand and properly apply decisions and orders"<br>"Developing the organisation of departments and the optimal distribution of individuals (such as bringing specialists among the officers - bridging the shortage of manpower)"<br>"Renewal of infrastructure for work environment"<br>"Providing a creative environment for innovation" | - MI<br>- Organisational process, policies, rules, and regulations<br>- Technology integration | - Subjects of MI<br>- Tools of MI |

| | | | |
|---|---|---|---|
| | "Investing in people through courses and training"<br>"Opening the door for discussion and cooperation between units and individuals (taking proposals and exchanging ideas)"<br>"Financial support (having a budget)"<br>"Submit suggestions"<br>"Technology use"<br>"Increase manpower"<br>"Periodic meetings"<br>"Development and keeping up with potential threats, determining the targets"<br>"Distribution of personnel according to tasks, ability, and type of duty"<br>"Issuing and clarifying decisions in a clear and simple way"<br>"Listening to proposals and discussing them"<br>"Employing modern devices and technology that contribute to the workflow"<br>"Recourse to expertise and specialties"<br>"Establishing a complete unit specialised in information systems"<br>"Infrastructure creation"<br>"Preparing human resources (training courses, skills, and awareness), financial support"<br>"Human resources support"<br>"Perception and understanding of the individual of the required duties"<br>"Commitment to orders/Commitment for applying orders" | | |
| **9** | "The majority or all of the associates"<br>"The supreme authority in the unit"<br>"Specialised army units in this field"<br>"Unit officers (affiliates of units)"<br>"Development Department"<br>"Training companies and special courses"<br>"Equipment providers/suppliers and third-party corporations" | - Individuals responsible for performing their roles within the scope of Subjects of MI as Objects of MI | - Objects of MI |

| | | | |
|---|---|---|---|
| **7** | "Depending on the unit's role or basic duties"<br>"All departments"<br>"Administrative units (office workers)"<br>"Development Department"<br>"Operations Department"<br>"Human resources and training"<br>"Security Department (in Palaces)"<br>"The Headquarter Incorporeal Guidance Department" | - Individuals responsible for performing their roles within the scope of Subjects of MI as Objects of MI and technology integration | - Objects of MI<br>- Tools of MI |
| **8–9** | "Receive, apply, and follow-up orders"<br>"Update, formulate, and follow-up individuals' information"<br>"Follow-up on military trials"<br>"Duties' correspondence"<br>"Administrative procedures"<br>"Daily attendance"<br>"Training"<br>"Inspections and inventory"<br>"Daily guarding"<br>"Mail receipt and delivery"<br>"Daily receipts"<br>"Distribution of individuals according to duties"<br>"Inventory of devices and distributing it according to tasks"<br>"Devices' check"<br>"Unit evaluation and follow-up"<br>"Making reports"<br>"Escorts and fieldworks"<br>"Morning assembly"<br>"Army loan"<br>"Vacations"<br>"Exercises and courses"<br>"Serviceable"<br>"Attending ceremonies and events" | - Organisational activities<br>- MI<br>- Organisational process, policies, rules, and regulations | - Organisational activities with Subjects of MI |

| | | | |
|---|---|---|---|
| | "The issuance of permits and follow-up"<br>"Accuracy and minimising errors"<br>"The importance and priority of the activity or task"<br>"Depending on the situation and ability in the unit"<br>"Time and duration of activity"<br>"Posts' guard/check points"<br>"Objectives and mission type"<br>"Privileges and status of individuals"<br>"Distribution of tasks and duties"<br>"Number of people (manpower)"<br>"Available equipment"<br>"The number of tasks" | | |
| **10–11** | "Using the available authority may help prioritise"<br>"(Authorities are restricted in the military field) Powers are limited in the military environment"<br>"Decentralisation helps development"<br>"There is complete validity"<br>"An attempt is made to remedy it and develop the administrative system"<br>"The action plan is suspended in case of emergency"<br>"A network connecting all units (integrated systems)"<br>"Failure to fully activate the incorporeal guidance"<br>"Financial support"<br>"Preoccupation with duties and routine tasks"<br>"Work priority"<br>"Manually adjusting statements"<br>"Unwillingness to develop and innovate"<br>"Restrictions placed to prevent the development"<br>"The intellectual dimension between the decision-maker and the implementer (educational level)"<br>"Few human factors"<br>"Commander policy"<br>"Moving from paper correspondence to electronic messaging" | - Organisational activities<br>- Individuals responsible for performing their roles within the scope of Subjects of MI as Objects of MI | - Organisational activities with Subjects and Objects of MI |

| | | | |
|---|---|---|---|
| **12–13** | "Information systems/ICTs can enhance managerial innovation to a great extent"<br>"Opportunity to benefit from innovation/creative management in the private sector and companies to apply it in the Amiri Guard" | - Organisational activities and technology approach for fostering innovation in the business model with respect to the organisational context | - Organisational activities and Tools of MI |
| **14** | "Technology can be used to link between administrations, but to be under control because of the nature of the work for security reasons" | - Organisational activities and technology approach in relationship with the procedures, rules, and regulations of the organisation for fostering innovation in the business model | - Organisational activities and tools interlinked with Subjects of MI |
| **15** | "Affirmation for attempts to provide or develop a tool or system for communication between departments/employees"<br>"Larger possibility to establish/develop a special unit for administrative innovation/creativity consisting of specialists under the management of the Head of the Amiri Guard" | - Organisational activities and technology approach in relationship with the entities/companies/individuals/parties of the organisation for fostering innovation in the business model | - Organisational activities and tools interlinked with Objects of MI |

* Interview questions:

Q1. What do you know about managerial innovation? What is your concept of innovation and management creativity?
Q2. To what extent does the Kuwaiti Amiri Guard administration contribute to the development of managerial innovation? How?
Q3. What are your suggestions to support managerial innovation in the Kuwaiti Amiri Guard management, considering the norms, policies, rules, and strategies?
Q4. What are the plans to develop and activate these suggestions?
Q5. What are the necessary tools and resources that would help to implement and activate these plans?
Q6. Who are the entities/companies/individuals/parties expected to participate/implement these plans? Who are the persons or entities influencing the development and activation of the managerial innovation policies in the Kuwaiti Amiri Guard?
Q7. What are the units, sectors/administrations nominated or targeted in the inclusion and activation of creativity and managerial innovation? What is the role of the remaining units/administrations in achieving managerial innovation in their units or in other units?
Q8. What are the routine activities in the branch administration?

Q9. What is taken into consideration when establishing and distributing the activities/tasks?
Q10. What about the considerations of authority (validity), priority, and complexity that could already be embedded in the administrative system at the branch/administration?
Q11. What are some examples or cases in which you found it difficult to activate and include managerial innovation?
Q12. To what extent can information systems/ICTs enhance managerial innovation?
Q13. Is there an opportunity to benefit from innovation management in the private sector to apply this in the Kuwaiti Amiri Guard?
Q14. Is there any communication/correlation between administrations by technology? An integrated system?
Q15. Are there attempts to provide or develop a tool or system for communication between departments/employees?
Q16. To what extent can the establishment/work of developing a special unit of innovation/managerial innovation consist of specialists under the management of the Head of the Kuwaiti Amiri Guard? (question directed solely to the Head of the Kuwaiti Amiri Guard)

#### *5.4.1.1 Theoretical Sensitivity*

The concept of theoretical sensitivity was considered while progressing through the coding process. Theoretical sensitivity involves the researcher's opinions and ability to interpret the data, acquiring a deep understanding of theory formulation, comparing the similarities and isolating the differences evident from the collected data (Noble & Mitchell, 2016). Theoretical sensitivity has been described as the insight into the meaningfulness and significance embedded within the data (Strauss & Corbin, 1990), as well as the researcher's ability to identify the emergence of such data (Birks & Mills, 2015). During the data analysis stage, data sensitivity included the findings emerging from the literature (i.e., the in-depth understanding of secondary works that play an important role in presenting a clear understanding of the studied phenomenon), the personal and professional experience of the researcher utilised to interpret the meaning of the topics explored in the research, and the analytical processes employed to comprehend the subject matter (Strauss & Corbin, 1990). There was a need for theoretical sensitivity to avoid possible bias arising from personal or interpretational mistakes. The process of analysing data to achieve grounded theory was carried out in a directive manner, as shown in Figure 5.3, with the codes extracted and reflected into the categories and sub-categories presented in Table 5.1.

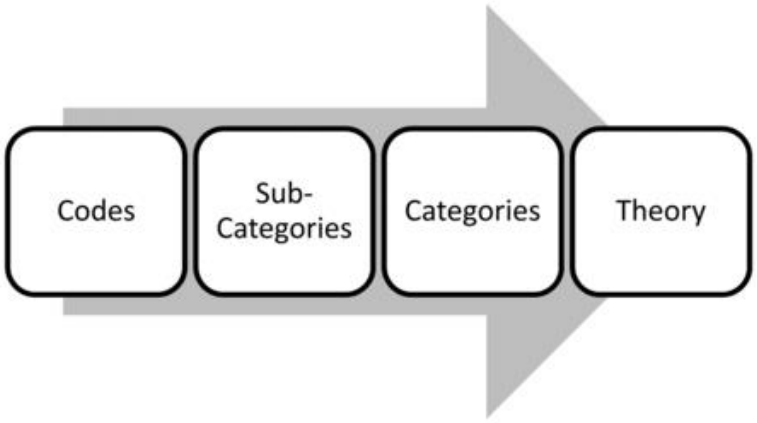



**Figure 5.3: Data Analysis with Grounded Theory (Noble & Mitchell, 2016)**

## 5.5 Conclusion

This chapter presented the coding of the data drawn from the semi-structured interviews with the study participants. The data coding process was conducted and summarised, with codes, sub-categories and categories resulting from the template analysis of the qualitative data collected from the 25 interview participants from the Kuwaiti Amiri Guard. Moreover, the importance of applying theoretical sensitivity during the coding process was discussed. It is believed that the case study coding approach developed in this study—whereby qualitative interview data drawn from interviews were thematically analysed to generate codes, sub-categories and categories while applying grounded theory and theoretical sensitivity—could be applied to other military contexts with similar characteristics where case study research is being undertaken.

The conclusion of the case study coding enables the analysis of the case study to be carried out in Chapter 6, and thus facilitates the emergence of the findings from this case study investigation.

# Chapter 6
# Case Study Analysis & Findings

## 6.1 Introduction

This chapter explores the data emerging from the case study and interviews with the participants listed in Table 4.2, where the resulting qualitative data were coded into sub-categories and categories in Chapter 5 through the case study coding approach. The analysis leads to nine thematic categories and associated sub-categories, as well as two direct associations between the nine thematic categories. To establish the Kuwaiti Amiri Guard as an activity system, a detailed and in-depth evaluation of the developed themes is conducted to develop the Kuwaiti Amiri Guard Theoretical MI Framework.

## 6.2 Categorisation

This section presents a critical analysis of the case study discussed in Chapter 1 (see sections 1.2) and the extracted interview codes mapped to the conceptual framework (see Figure 3.2), which were informed by activity theory for categorisation purposes, and with the following nine categories generated: Subjects of MI, Tools and Subjects of MI, Objects of MI, Tools and Objects of MI, Organisational Activities and Subjects of MI, Organisational Activities with Objects and Subjects of MI, Organisational Activities and Tools of MI, Organisational Activities and Tools Interlinked with the Subjects of MI, and Organisational Activities and Tools Interlinked with the Objects of MI.

### *6.2.1 Subjects of MI*

Considering the development of the **subjects of MI** category and keeping in mind Arundel *et al*.'s (2019) categorisation of MI subjects as transformational policies that lead to concrete results or innovation, questions were asked to highlight the existing or the immediate need for the involvement of MI in the rules, policies, norms, and strategies at the Kuwaiti Amiri Guard. The researcher explored the concept of MI according to the Head, heads of branch, and unit leaders of the Kuwaiti Amiri Guard through the first two interview questions (see Appendix I and Table 5.1), which sought insight into the respondents'

awareness of MI, the concept of innovation and management creativity, and the extent that the organisation's administration contributes towards the development of MI.

From the interview data analysed, it was observed that the majority of the respondents (n=22) defined MI as a new or innovative approach aimed at carrying out required tasks with the minimum time and cost, through employing the requisite skills in the respective field. This agrees with Andrade-Valbuena and Torres's (2018) assertion of MI reflecting the introduction of new strategies and human actions to achieve opportunities and the broader organisational vision.

In terms of the process of MI and its potential in the organisation, Participant 1-HA-32 (see Table 4.2 for a list of the participants' aliases) considered the key principles to be ensuring that every individual within the organisation is utilised effectively, with obstacles to their contribution removed and a reward system established:

> *[T]he principles that could contribute to the process of managerial innovation are finding every attribute for each individual to be invested and focusing on the distinctive points of the individual to create a suitable work environment and exploit talent at work, as well as the principle of rewards and bonuses that promote and encourage the individual to innovate and engage in creativity, trying to reduce obstacles to the individuals [soldiers], and ensuring the commanders listen and take into account their suggestions.*

Fonseca *et al*. (2019) encouraged the identification and utilisation of employees' soft skills as a valuable source of innovative outcomes, while the APSC (2016) highlighted the offering of benefits and rewards to innovative employees.

With public-sector organisations experiencing challenges in ensuring that management have the necessary skills and talent (Burbidge & Webster, 2019), Participant 1-HA-32 defined MI as:

> *Investing in human energies and talents to create something new in the units that can stimulate providing an environment conducive to creativity, innovation, and its application, to develop and activate this.*

This was followed by the need to develop the mechanism of managerial work, and facilitating work in management. The analysis was perceived from the extracted codes, such as the respondents defining MI as "Dual ways to accomplish administrative tasks" (n=10), "Development of the mechanism of administrative work" (n=5), "Facilitate work in

management" (n=3), "The work of management in a coherent manner among individuals" (n=2), and "Achieving the unit's goals in the shortest time and least cost" (n=2) by either selecting the optimum person for the task or managing work in a manner suited to the subordinate. The most frequent response of the respondents seeking dual or different means to complete administrative tasks echoes Benaim's (2018) assertion that added value can be achieved through creative engagement.

A question was also asked regarding the contribution of the Kuwaiti Amiri Guard administration to the development of MI. Participant 1-HA-32 reported that the "*Units and departments contribute proportionally according to the nature of the units*" and the duties assigned to them, although this is moderated by the available capabilities and resources. The heads of the other departments and the unit leaders identified limited contribution for MI development; for example: "*The development process varies from one department to another, as well as from one person to another … but in general I see that the development of innovation in my unit does not exceed 25%*" (20-UL11-22). The main reasons provided for this limited contribution were the availability of time, the interactivity of personnel, and the technical component. The European Commission (2013) highlighted the challenges for public-sector innovation, and in particular the organisation and administration of public services. Therefore, there is potential to increase the space for innovation to occur within the subjects of MI, whereby innovative activities can result in optimal improvement for the organisation (The European Commission, 2013; UN, 2017).

### *6.2.2 Tools and Subjects of MI*

The category of the **tools and subjects of MI** emerged based on the identification of the need to deploy the tools of MI within the subjects of MI, to foster MI in the Kuwaiti Amiri Guard.

This category emerged in response to interview questions three and four regarding the suggestions for supporting MI in the Kuwaiti Amiri Guard while considering the prevailing norms, policies, rules, and strategies. These were intended to identify the requirement of the subjects of MI as the transformative policies (Arundel *et al*., 2019) requiring the involvement of ICTs and other technology (Kim *et al*., 2016) as tools for fostering MI. Through analysing the participants' responses, the following codes were extracted from the most frequent responses: "Investing in available resources and in human energies and talents through

training, courses, and skill development (and encouragement and support)" (n=11), as supported by Burbidge and Webster (2019); and "Using modern and advanced technology" (n=8), which agrees with Shang *et al*.'s (2018) emphasis on the critical role of technology to enhance quality and efficiency. Moreover, there were observations regarding the centralisation of departments, in terms of supporting unity and coherence in the overall management structure to ensure the successful fostering of MI in the Kuwaiti Amiri Guard. These included the benefits possible through "*Decentralization in implementation*" that "*helps development, and creates opportunities to highlight development*" (4-HB3-23), and the development of a dedicated department in the unit that can utilise its talent and technology to foster MI:

> *The proposal that supports managerial innovation in the unit is the establishment of a development department especially for the unit, and from my point of view to develop and activate this proposal by using technology in performing the tasks … to bridge the shortage of manpower.* (13-UL4-20)

The top-down approach to fostering MI through a dedicated department falls under the ACCA's (2019) directed innovation dimension (see Figure 2.3), whereby developments rely upon the actions of the existing management within the organisation, while the suggestion of decentralisation implies a more unstructured innovation approach.

On the other hand, some of the respondents suggested a need to renew the management infrastructure, and develop the organisation of departments and the optimal distribution of individuals, such as the introduction of specialist officers to bridge the shortage of personnel. This shares some similarity with Dan *et al*.'s (2018) assertion that MI emerges during the implementation and diffusion phases, where novel approaches to operational design and decision-making are developed to employ the organisational resources more effectively.

To identify the role of the subjects of MI for fostering MI in the Kuwaiti Amiri Guard, a question was asked concerning the plans for developing and activating the shared suggestions. The interview data were further analysed to identify the perceivably of MI in the subjects of MI, and to identify the motivation of the subjects of MI for fostering the deployment of the tools of MI. The most prevalent codes were identified as the need for "Investing in people through courses and training" (n=9), "Opening the door for discussion and cooperation between units and individuals (taking proposals and exchanging ideas)" (n=6), "Technology use" (n=4), and "Financial support (having a budget)" (n=3). The

responses echo the APSC's (2016) findings of the importance of introducing technology, digital practices, and training to promote organisational innovation, in this case through implementing training courses, encouraging discussion, and the exchange of ideas, supporting the identification of innovative solutions that meet the existing capabilities, and addressing the deficiency through technology.

At this point, the theme development was focused on the existence of consideration for deploying the tools of MI within the subjects of MI. However, for further contemplation and concreteness of the link, a question was asked regarding the necessary tools and resources for implementing and activating the plans as the subjects of MI. The interview data were analysed, and it was identified that the majority of the responses concerned the need for "Employing modern devices and technology that contribute to the workflow" (n=15), while some respondents suggested "Preparing human resources (in courses and others)", "Recourse to expertise and specialties", and to a lesser degree the need for the "Understanding of the individual's duties". The strong consensus on the importance of technology as an MI tool is echoed in the literature, with Kolloch and Dellermann (2018) highlighting the ability for the IoT, for example, to enhance managerial practices through the creation of effective communication networks and smart connectivity. Therefore, a clear link between the **tools and subjects of MI** was observed, as the majority of the study sample underscored the need to implement modern devices and technologies that help manage tasks more efficiently, followed by the preparation of human resources through courses and trainings, and ensuring that expertise is effectively utilised.

### *6.2.3 Objects of MI*

Regarding the **objects of MI** within the Kuwaiti Amiri Guard, interview question six was asked regarding the entities/companies/individuals/parties as objects expected to participate/implement the plans for fostering MI in the administrative sector of the Kuwaiti Amiri Guard. Moreover, the question was further elaborated to identify the persons or entities as objects responsible for influencing the development and activation of MI within its subjects in the Kuwaiti Amiri Guard. In the responses to this interview question in terms of implementing plans or their influence in the development and activation of the MI policies of the organisation, those actors expected to participate in MI were perceived to be the majority or all of the Kuwaiti Amiri Guard's affiliates, the supreme authority in the unit, the officers of the units, and the equipment providers. For instance, the responses led to the coding of the

objects of MI as "The majority or all of the associates" (n=11), "The supreme authority in the unit" (n=5), "Hardware and equipment companies" (n=4), "Unit officers (affiliates of units)" (n=4), "Training companies and special courses" (n=2), "The Development Department" (n=1), and "Specialised army units in this field" (n=1). These responses agree with Bhimani *et al*. (2018), who defined the objects as all those stakeholders who interact and propel the innovation process workflows. Meanwhile, Participant 4-HB3-23 described the organisational hierarchy in terms of where the responsibilities lie regarding development within the Kuwaiti Amiri Guard:

> *[The Branch of Operations and Training] contributes approximately 70% of the development work of the Amiri Guard Corps as a whole, and then develops the department's organisational structure in line with the continuous development process.*

### *6.2.4 Tools and Objects of MI*

Further categorisation was based on the identification of a link between the **tools and objects of MI**, where interview question seven sought the participants' perceptions regarding the units, sectors/administrations targeted or nominated in the inclusion and activation of MI. Moreover, the question was extended by exploring the role of dedicated units/administrations for the successful implementation of MI.

The most resulting codes were "All departments" (n=6), "Security Department (in Palaces)" (n=5), "Depending on the unit's role or basic duties" (n=3), "Administrative units (office)" (n=2), "Manpower" (n=2), "Processes" (n=2), "The Development Department" (n=1), "The Headquarters" (n=1), and "Training" (n=1). There is a sense here of what Fu *et al*. (2018) described as creating innovation through a community of practice, where in this case the community comprises of all the departments within the Kuwaiti Amiri Guard.

The analysis of the interview data and the extracted codes identified that all the units and administrations are nominated and targeted in the activation of creativity and MI, such as training and operations' units, guards' departments, office departments, security management, development management, and incorporeal guidance management. However, the respondents also underscored that the inclusion of said departments and units was dependent upon the capability of the personnel, again implying the need for experienced individuals in public-sector organisations to ensure sufficiently skilled and talented management (Burbidge &

Webster, 2019). This was explained in terms of the participation in training to increase their potential:

> *The Amiri Guard Training School contributes directly to the refinement and qualification of the Guard's personnel to carry out their duties.* (7-HB6-22)

> *[D]eveloping concepts, skills, and abilities are very important, and employing this in the interests of the unit, while activating and implementing this by providing all appropriate courses depending on the unit nature and individual's capability.* (9-HB8-30)

Furthermore, Participant 24-UL15-18 pointed out the importance of individuals being able to process and implement instructions in terms of the development of proposals to support MI, in order "*to correctly understand decisions and orders by individuals so these can be applied and properly implemented*", thus underscoring the importance of talented human resources (Burbidge & Webster, 2019) and training (Ministry of Defence, 2020).

Additionally, the fostering of cooperation between the units in terms of development and work was underscored, with Milutinovic and Stosic (2013) describing the innovation system in the public sector as a set of interconnected activities pursued by participants based on a cooperative approach:

> *[The Kuwaiti Amiri Guard Training School] encourages Amiri Guard personnel to participate in external courses, which promotes the exchange of experiences between the two parties. It also enhances joint cooperation with the modern forces, and that helps us bring modern teaching methods, which contribute to the development of the Training School as well.* (7-HB6-22)

Moreover, due to the challenges presented by the military context, as a result of "*The complexities involved and powers [being] limited in the military environment*" (13-UL4-20), the structure of administration suggested by Participant 1-HA-32 focused on the decentralisation of power and authority by encouraging the leadership to raise suggestions, highlight problems more quickly and identify solutions, again reflecting a top-down directed approach to fostering MI (ACCA, 2019):

> *Seek to take periodic feedback from leaders and take the necessary action according to the results for each unit or sector, as well as employing specialists in the appropriate place, and listening to and discussing proposals.*

### *6.2.5 Organisational Activities and Subjects of MI*

To understand the perceptions of the **organisational activities and subjects of MI**, the data were analysed to identify the organisational activities within the Kuwaiti Amiri Guard in response to interview question eight regarding the routine activities in the branch administration. The responses identified that the routine activities of the branch administration include the training schedule, and the daily, weekly, and quarterly duties that involve:

> *mail, calls, soldiers' attendance and inspection, training, periodic shooting, and weapons' inventory, and are taken into consideration when developing and distributing routine activities by specialisation.* (10-UL1-20)

This is followed by inspections and inventory; receiving, applying, and following-up on orders; dealing with daily receipts; evaluating the performance of units; following-up on military trials, issuing and following-up on permits; and conducting daily guarding responsibilities:

> *Among the most prominent routine activities that we do are correspondence, official books (documents/organisational announcements/mail), military trials for the unit's personnel, training according to the daily training schedules of the unit, the distribution of daily guard points, protocol tasks when VIPs attend and for official visits, and follow-up evaluation of the unit's performance by following the unit's fixed orders [documentation that the unit must adhere to].* (18-UL9-19)

Further, through interview question nine the participants were probed regarding the consideration while establishing and distributing the tasks/activities, leading to responses that highlighted the existence of policies, rules, norms, and strategies as subjects of MI that include (i) the accuracy and timeliness of the activity or task's completion, "*accuracy and the time factor is required, and being careful that there are no errors, whether typographical or otherwise, especially for tasks and activities that include the employment of officers, promotions, transactions, retirement, appointments*" (2-HB1-23); (ii) individuals' privileges and status, "*the privileges and talent of each person are taken into account when developing and distributing activities and tasks"* (4-HB3-23); (iii) ensuring that tasks are completed to the fullest extent and assigned accordingly based on the number of individuals, their specialisations and privileges, "*Our strategic proposals for our policy are to support managerial innovation in the observation and control branch, where employees in general should be given the opportunity to express opinions, give ideas, and try out proposals to*

*reach the best management system*" (5-HB4-24); and (iv) based on the available equipment, "*Since the nature of the routine activities in the Supply and Logistics Battalion is services, the availability of equipment is taken into account when setting and distributing activities*" (15-UL6-19). However, it was noted that the administration of the Kuwaiti Amiri Guard does not currently include planned infrastructure or an approach for implementing MI in its policies, procedures, rules, norms, and strategies, and so despite being practised, there is no obvious integration into the organisational systems to promote cost savings, improved efficiencies, and the more effective use of personnel (Hamel, 2006), and thus obstacles can occur:

> *The work system in general depends on the available powers and it is not permissible to override the powers in any way, so the innovation development process may be hindered or be impossible to apply due to lack of awareness, knowledge, and approval of the leader who has the right and authority to develop and refuse.* (12-UL3-23)

This underscores the presence of a strict top-down directed innovation (ACCA, 2019) culture at the Kuwaiti Amiri Guard, but given the cited challenges of the potential lack of awareness, knowledge, and approval from leadership, incremental innovation might be the best that could emerge under such circumstances.

### *6.2.6 Organisational Activities with Objects and Subjects of MI*

Extending the process for exploring the link between the **organisational activities with the subjects and objects of MI**, the participants were asked in interview question ten regarding the considerations of authority (validity), priority, and complexity that could already be embedded in the administrative system at the branch/administrations. It was observed that the respondents identified limited authority in the military environment, whereby the emphasis is placed on the utilisation of available authority for defining prioritisation, and a need for decentralisation to facilitate further development to foster change such as MI in the existing administration system. Milutinovic and Stosic (2013) reported the need for knowledge-driven management as a concrete requirement for success in the private sector, and it could be argued that the respondents here were highlighting the requirement for members within the administration with the authority to prioritise and decentralise MI development. The extracted codes included the prevailing perception that "Authority/power is limited in the military environment" (n=14), with fewer respondents

reporting that "Using the available authority may help prioritise" (n=3) and "Decentralisation helps development" (n=3).

Examples or cases for identifying the difficulties of fostering MI in the administration system were sought through interview question eleven, with the responses highlighting the challenges when implementing MI such as insufficient financial support:

> *Among the examples in which we find it difficult to activate and include managerial innovation is the preoccupation with routine work and a lack of funds to provide the latest devices.* (13-UL4-20)

> *Activating and embedding managerial innovation is difficult in terms of financial support.* (9-HB8-30)

It would appear that there is insufficient funding to create what Zhang *et al*. (2012) referred to as a critical military network that requires the ability to communicate, control, identify, locate, and surveil, or the advanced technologies of the IoMT (Kim & Laskowski, 2018.

Although investment has been made in training:

> *appropriate training, investing in talent, employing technology and embedding it in administrative systems to help the force manage administrative and military tasks more efficiently*. (1-HA-32)

And certain security infrastructure, leading to new behaviours (Kim *et al*., 2016):

> *Security systems have contributed to reducing tasks for individuals and in some cases, personnel have been replaced by security systems to carry out tasks by replacing personnel with security systems at guard points and checkpoints, using the security entry and exit system.* (13-UL4-20)

Further challenges were cited, including the insufficient human factor, preoccupation with duties and routine tasks, and an unwillingness to develop and innovate:

> *the difficulty in activating and embedding managerial innovation includes work priority, the lack of human resources, and the lack of interest in management innovation.* (16-UL7-21)

This response again adds weight to the presence of incremental innovation within the Kuwaiti Amiri Guard, as opposed to anything more directed, spontaneous, or radical (ACCA, 2019).

Participant 3-HB2-18 highlighted the importance of utilising technology to develop a digital network that can connect all the departments and improve the efficiency of information sharing, with the suggestion made of establishing a specialised information technology unit:

> *Due to the security and intelligence branch's connection with most state institutions, this requires the availability of information as soon as possible to inquire about it. From my point of view, the means to support managerial innovation in our departments is to develop plans to activate the role of computers and modern technologies in linking between departments to reduce the effort of individuals. In terms of inquiring about information and its availability at the required speed, accuracy, and confidentiality, what will help the implementation and activation is the allocation of a unit specialised in information systems.*

Forces Watch (2017) highlighted the need for recruiting young personnel due to their more natural technology skills, with Mariani *et al*. (2015) reporting the importance of technology when conducting military operations.

This need to modernise the ability to access information was echoed by Participant 8-HB7-20, who used the example of warehouse inventories that are currently updated manually:

> *Among the examples or cases in which I found it difficult to activate and include managerial innovation, for example, if we ask any unit of the units for detailed statements of warehouses to be up to date, this should be modified manually and takes a long time.*

To address the issues of inventories and storage units, Zhang *et al*. (2012) pointed out the benefits of utilising RFID technologies to collect information from warehouses by linking them to individuals and transportation networks through the IoT.

A final issue was raised by Participant 19-UL10-15, who pointed to the failure to provide comprehensive guidance, perhaps due to the limited presence of MI specialists:

> *Among the things that cause difficulty in activating and embedding managerial innovation in management is the preoccupation with routine work and failure to fully activate the primary role of guidance management, which may be due to the lack or availability of specialists in this field.*

In this regard, Cankar and Petkovsek (2013) encouraged engagement with the private sector to ensure that expertise, skills and innovative trends can be incorporated to promote improvements in public-sector organisations.

### *6.2.7 Organisational Activities and Tools of MI*

With the above category suggesting limitations for the successful implementation of MI in the administrative system, interview question twelve explored the role of the **organisational activities and tools of MI** for contributing to the successful implementation of MI. To identify this, the interview data showed that the majority of the participants asserted that information systems/ICTs have the potential to enhance MI significantly, with the extracted code of enhancing "to a great extent" (n=22). This echoes the view in the literature of ICTs being vital to cultivate and implement MI (Kim *et al*., 2018; Shang *et al*., 2018; Vecchiato, 2017).

Therefore, it was confirmed that deploying ICT is a convincingly progressive approach for the implementation of MI in the restricted environment of a military-sector organisation (Gotarane & Raskar, 2019; Suciu, 2021). Further investigating the role of the tools of MI, the availing benefit from the innovation practices of private-sector companies in the Kuwaiti Amiri Guard was explored through interview question thirteen, with the responses including "Yes, significantly to keep up with the latest technological developments, especially in the context of the private sector", "Yes, there is an opportunity to benefit from the reason of its own nature in administrative work, as it is specialised in its fields and does not constitute a major goal of the system and unity but it is very important", "Advantage of everything thoughtful and innovative", "Great opportunity and required", "Since the branch deals with third parties" and "Largely". From the extracted codes, the categorisation revealed positive perceptions on the availing benefit from the private sector for fostering MI, although the focus was based on the deployment of technological advancements as tools of MI representing innovation in the administration system.

### *6.2.8 Organisational Activities and Tools Interlinked with the Subjects of MI*

Additional to the above categorisation, through exploring the existence of communication/correlation between administrations by technology as an integrated system in interview question fourteen, a relationship was identified between the **organisational**

**activities and tools interlinked with the subjects of MI** with respect to the organisational activities at the Kuwaiti Amiri Guard, with eight of the unit leaders replying "Yes", six replying "Somewhat", and two replying "No". It was thus identified that the majority of the study sample believed completely or to some extent that technology as tools of MI within the subjects of MI is a resourceful means of creating linkage between administrations:

> *Among the proposals that may support administrative innovation in the branch is the entry of technology into units that may have an effective role in developing the work of the unit including preparing reports, the evaluation of units, and the inspection of units, taking into account accuracy and comprehensiveness.* (8-HB7-20)

Teece (1980) discussed the potential for administrative innovation to apply service provision more effectively and efficiently, with MI offering the potential for radical organisational transformation (Lin *et al*., 2017).

However, due to the sensitive nature of the work, the need for electronic and physical security (Seng, 2016), and the difference in the administrative structures of the units (e.g., the units in the military base versus those in the Amiri Palaces), any integrated system of development would need to be controlled:

> *Yes, there is an opportunity to benefit from managerial innovation from the private sector and companies to apply it in the Amiri Guard, which can enhance the creation of an integrated system that is compatible between departments, but that should be appropriate and under our control.* (1-HA-32)

> *The link between departments using technology or an integrated system is not in the required form, and there is a pursuit of that, but in limited capabilities.* (15-UL6-19)

Participant 1-HA-32 implied that consideration could be given to the deployment of a coherent and harmonious administrative structure to ensure the alignment of organisational activities, thereby resulting in the smooth implementation of MI with an integrated and well-communicated administrative system:

> *The role of units/departments in achieving managerial innovation may differ in several technical aspects from the observation and control branch, in the organisational aspect from the operations and training branch, in terms of skills from the training school, and according to the units' proposals and the circumstances of each unit, as the role of the unit or the basic duties of each unit are focused on the field side, or on the administrative or office aspect.*

### *6.2.9 Organisational Activities and Tools Interlinked with the Objects of MI*

The categorisation of the **organisational activities and tools interlinked with the objects of MI** emerged via interview question fifteen, through identifying the attempts to provide or develop a tool or system for communication between departments/employees, with fifteen of the unit leader participants responding positively with "Yes". Therefore, broad agreement was reported regarding the efforts to establish an inter-department communication system, suggesting that the objects of MI provide a contributing role for ensuring that an integrated system is formulated, thereby ascertaining the successful implementation of MI with the shared utility of the tools of MI. Zhang *et al*. (2012) cited the need for military organisations to have robust communication systems, while Martin *et al*. (2020) promoted the IoT as the trend for the US Army to develop the opportunities for technological innovation.

Participant 1-HA-32 was specifically asked to identify the extent of the establishment/work for developing a unit of innovation/MI consisting of specialists under his authority through interview question sixteen, where he underscored an openness to consider and invest in innovative proposals through a team that is authorised to invest in talented individuals to achieve this:

> *To a large extent, and that depends on the current environment of work to accomplish the basic tasks of the unit, and according to the resources available and the possibilities of individuals. However, the door of leadership is open to discuss the idea, with many creative ideas at the management level created through the resources available by the formation of a team of non-commissioned officers, and this team belongs directly to the Head of the Amiri Guard with a green light to invest in talent to accomplish that.*

Therefore, positive efforts were reported from the objects of MI with the deployment of the tools of MI for the creation of a special MI unit, which would enable greater potential for more directed and undirected innovation (ACCA, 2019). However, in the current environment, available resources and the capabilities of individuals were the dependency factors for fostering MI in a public-sector organisation such as the Kuwaiti Amiri Guard in the Kuwait military sector.

## 6.3 Theme Development

Within the context of grounded theory, the development of a proposed theory is carried out by reflecting on the developed themes that emerge from the coding process

(Nobel & Mitchell, 2016; Strauss & Corbin, 1994). Theme development represents a relational essence that arises from the mutual relationship of categories. Simply put, the developed categories are analysed to identify the relevance and similarity, with relevant categories then grouped to develop the themes.

In this study, the development of themes generated from the inter-category relationship is created in the context of the organisational activities, which were evaluated in the interview process to map the need for MI in the routine tasks and other necessary activities at the Kuwaiti Amiri Guard. Considering the evaluation of the organisational activities, the definition of the activity system is introduced, which Zott and Amit (2010) described as follows:

> Activity systems are a collective production that include engagement from different individuals to achieve their goals. They represent a long-term phenomenon, and comprise a framework that can be associated with multiple fields. Activity systems can be found embedded within management, innovation, teaching, scientific research, and even production units, where each system functions for a different purpose.

Depending on the goal or objective, the engagement of the activity could pass through another stage or process level, or could be returned to be processed, thus leading to inter-activity interactions. In the activity system context, the engagement manifests in terms of the human interaction, while the artefacts (e.g., tools, communication, and technology) mediate the interaction or activities (Karanasios & Allen, 2018). Therefore, these interactions could lead to behaviour, practice, or the allocation of work amongst members/departments, providing legal or organisational rules that lead to a systemic interaction or a system, regardless of its suitability or likelihood of success.

In the MI context, Zamri *et al*. (2013) asserted that such innovation should be focused on four key components—communicative exchange, the institutional environment, new concepts, and people—while ensuring that the innovation outcomes are embedded within the process.

The interview questions thus included a focused evaluation of innovation in the Kuwaiti Amiri Guard context to identify the need for MI to facilitate the processing of organisational activities. In this evaluation of organisational activities with the interactions of individuals, the processes, rules, and regulations, technological deployment is reflected in the

development of an activity system, forming the main themes as the foundation for the development of proposed theory.

Considering the categorisation process, the identification of the subjects, objects, and tools of MI was carried out within the context of the organisational activities that include the evaluation of MI integration. Therefore, nine categories resulted: (i) *Subjects of MI*, (ii) *Organisational Activities and Subjects of MI*, (iii) *Objects of MI*, (iv) *Organisational Activities with Subjects and Objects of MI*, (v) *Tools of MI*, (vi) *Tools and Subjects of MI*, (vii) *Tools and Objects of MI*, (viii) *Organisational Activities Interlinked with Subjects of MI*, and (ix) *Organisational Activities Interlinked with Objects of MI*.

Grouping these categories with respect to the evaluation of the organisational activities, the categories highlighted that the case study involved the exploration of activities within the Kuwaiti Amiri Guard in relationship with the procedures/rules and regulations (subjects of MI), entities/companies/individuals/parties (objects of MI), and the integrative need of technology procedures such as ICTs (tools of MI).

The objects of MI represent those stakeholders involved with the organisation such as the managers, decision makers, operators, customers, or individuals who innovate or enhance creativity in the implementation of the required tasks. Meanwhile, the subjects of MI represent the innovative policies, strategies, rules, and procedures creating an innovative norm in the management, thus indicating how and why individuals could perform tasks. Therefore, the subjects of MI are considered to be the motives of the objects of MI. Finally, the tools of MI reflect the technology that mediates the interactions of activities depending on the nature or the type of activity (i.e., the individual skills, organisation policies or rules, and technology level).

Moreover, considering the developed categories and the given definitions of the subjects, objects, and tools of MI, the three MI components were observed to have a mutual relationship with each other, where organisational activities as an activity system is the establishing verdict for the development of this relationship.

### *6.3.1 Themes for Generating the Proposed Theory*

For the development of themes, the developed categories were considered with a reflective and associated relationship. The categories were evaluated according to the activity theory paradigm by identifying the subjects, objects, and tools of MI with respect to their

involvement in the organisational activities at the Kuwaiti Amiri Guard. Moreover, through the evaluation of categories in accordance with the subjects, objects, and tools of MI, linked with the organisational activities, the identification of outcomes was explored.

To achieve a comprehensive understanding of themes reflecting activity theory—the linkage of the subjects, objects, and tools of MI with the organisational activities at the Kuwaiti Amiri Guard—the themes were extracted. Considering the framework of activity theory, a triangle is employed to represent the relationship between the subjects, objects, and tools within the activity system (see Figure 6.1). The triangular representation of activity theory represents the mutual relationship of the subjects, objects, and tools of MI that are interlinked to establish the activity system.

The evaluation of categories was based on identifying the relevancy with respect to the roles of the subjects, objects, and tools of MI in the establishment of an activity system at the Kuwaiti Amiri Guard. Moreover, since the activity system represents an interlinked, synchronised, and mutually connected system of organisational activities, each of the themes was based on the mutual relevancy of each MI pillar with the others. In other words, the organisational activities at the Kuwaiti Amiri Guard were viewed with respect to the role of the subjects of MI, while considering the involvement of the objects and tools of MI. Similarly, the organisational activities were viewed with respect to the role of the objects of MI, while considering the involvement of the subjects and tools of MI. Moreover, the organisational activities were viewed with respect to the role of the tools of MI, considering the involvement of the subjects and objects of MI.

Three themes were generated: *the role of the subjects of MI*, *the role of the objects of MI*¸ and *the role of the tools of MI*.

To retain the relevancy, the concern of mutual relationship, and the involvement of the pillars of MI, the grouping of three categories was carried out that led to the three relevant themes, as shown in Table 6.1.

**Table 6.1: Theme Development from the Data Categories**

| Theme | Categories |
|---|---|
| **Theme 1: Role of Subjects of MI** | - Subjects of MI<br>- Organisational Activities and Subjects of MI<br>- Tools and Subjects of MI |
| **Theme 2: Role of Objects of MI** | - Objects of MI<br>- Organisational Activities and Objects of MI<br>- Tools and Objects of MI |
| **Theme 3: Role of Tools of MI** | - Tools of MI<br>- Organisational Activities and Tools Interlinked with Subjects of MI<br>- Organisational Activities and Tools Interlinked with Objects of MI |

The diagram presented in Figure 6.1 helps to visually represent this abstraction, and develop a logical ground for depicting the developed themes for presenting the proposed theory, where the pink squares represent the categories (n=9), and the green circles represent the themes (n=3).

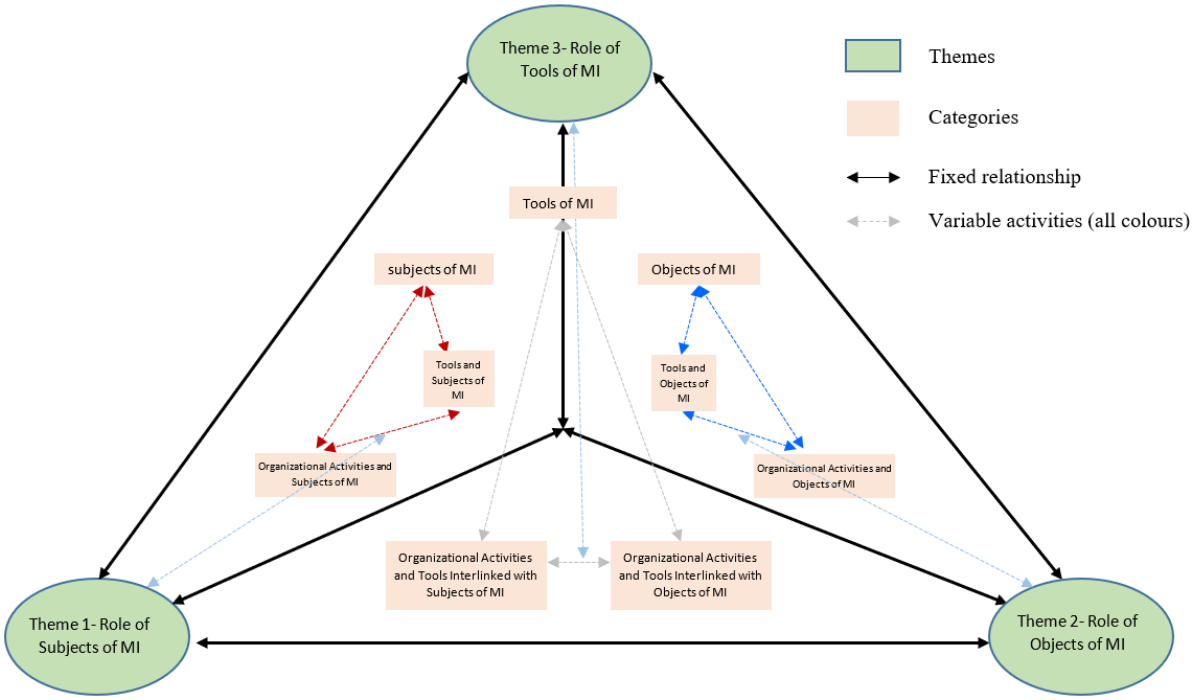



**Figure 6.1: Theme Development (3D Triangle)**

Theme 1 (Role of Subjects of MI) is generated from the subjects of MI, the organisational activities and subjects of MI, and the tools and subjects of MI categories. This theme includes the interviewees' cited challenges for contributing to MI due to the limitations of time, capable personnel, and supporting ICT (20-UL11-22), which are known issues for public-sector organisations (The European Commission, 2013); the need to decentralise implementation to create greater opportunities for MI (4-HB3-23) and deviate from the prevailing top-down approach to innovation creation (ACCA, 2019); and the importance of accuracy (2-HB1-23) and talent (4-HB3-23) to promote improved efficiencies and cost savings (Hamel, 2006).

Theme 2 (Role of Objects of MI) is generated from the objects of MI, the organisational activities and objects of MI, and the tools and objects of MI categories. This theme includes the participants' assertion that most or all of the managerial members have a responsibility for the implementation of MI, which echoes Bhimani *et al*.'s (2018) view that the MI objects are all those who participate in and drive innovation workflows; the prevailing notion that the agency to act is limited in the Kuwaiti Amiri Guard's military context, again underscoring the top-down approach to innovation creation in the organisation (ACCA, 2019); and the importance of developing capability through skill development (9-HB8-30), highlighting the need for training (Ministry of Defence, 2020) and talented personnel (Burbidge & Webster, 2019).

Theme 3 (Role of Tools of MI) is generated from the tools of MI, the organisational activities and tools interlinked with the subjects of MI, and the organisational activities and tools interlinked with the objects of MI categories. This theme addresses the majority of the participants reporting on the need to employ modern technologies that can contribute to the workflow (Martin *et al*., 2020); the importance of engaging with technology to create integrated links between departments (15-UL6-19), potentially through engagement with the private sector (1-HA-32), to enable robust organisational communication systems (Zhang *et al*., 2012); and the willingness of the organisational leadership (1-HA-32) to invest in talent to form a dedicated MI team, enabling the potential for greater directed and undirected innovation (ACCA, 2019).

In terms of the relationships in Figure 6.1, the solid lines indicate fixed relationships between the themes that lead to outcomes and result from the variable activities in the

categories. For example, there is a fixed relationship between the three themes, whereby the aforementioned need for developing talent in the organisation through training (Theme 1) will impact and be impacted by the presence or lack of talented individuals (Theme 2), and similarly will impact and be impacted by the availability or lack of the resources and technology to train and utilise the skills of such talent (Theme 3). On the other hand, the dashed lines indicate variable activities between the categories in each theme that may affect or be affected by the surrounding activities in other categories in the same theme. For example, if we consider the tools of MI category in Theme 3, such as the majority of the participants reporting on the need to employ modern technologies (tools of MI), this may or may not be impacted by some individual's unwillingness to develop and innovate (organisational activities and tools interlinked with the objects of MI).

### 6.4 Proposed Theory: Activity Theory as a Lens to View MI

In establishing the main findings of this research, a reflective theory is generated to understand the implementation of activity theory for recognising the implementation of MI based on the context of the Kuwaiti Amiri Guard. Since the development of the proposed theory is carried out by reflecting on the developed themes, each theme identifies the relevant MI component in terms of activity theory as a lens.

In general, the interaction of individuals (the objects of MI) with the organisational processes, policies, rules, and regulations (the subjects of MI) for the handling and performing of various organisational activities by deploying specific processes, mediums, and facilities (the tools of MI) depends on the organisational type. Based on this discussion, the establishment of the Kuwaiti Amiri Guard as an activity system, in relationship with the pillars of MI for fostering MI, requires a detailed and in-depth evaluation of the developed themes.

Since recognising and highlighting an MI activity system could reshape the key managerial activities, including personnel, work processes, planning, and the control of different managerial routines, while embedding and utilising MI in the Kuwaiti Amiri Guard could add value in the Kuwaiti military and public sector, exploration of the MI concepts or activities in this case study is necessary.

In regard to the development of the proposed theory, the following discussion translates the themes in the form of an activity system, leading to the development of theory.

### *6.4.1 Subjects of MI*

The first pillar of MI is presented in reflection to Theme 1 (the role of the subjects of MI; see Figure 6.1), for identifying how the subjects of MI at the Kuwaiti Amiri Guard support the establishment of MI, along with the involvement of the objects of MI and tools of MI. This MI pillar of MI was viewed in terms of the organisational activities related to the subjects of MI at the Kuwaiti Amiri Guard, which include the processes, mechanisms, system of organisational management, information management, staff management, and security management.

Therefore, the first pillar of MI includes the reflective abstraction of the processes, mechanisms, and systems of the Kuwaiti Amiri Guard, in relationship with the interacting individuals and the required tools of MI. The categories and themes identified the processes, policies, and rules at the Kuwaiti Amiri Guard, with decentralisation characterising the decision-making process. The management processes, systems, and mechanisms at the Kuwaiti Amiri Guard are based on the authority-based decision-making and implementation perspective, where the unit leaders have the authority to implement the Kuwaiti Amiri Guard headquarters' strategy from their perspectives and experience of dealing with scenarios that arise and performing the required tasks.

It was identified that the decentralisation of the implementation and inclusive decision-making within the processes, systems, and mechanisms at the Kuwaiti Amiri Guard would be supportive towards allowing the successful establishment of MI in this military-sector organisation in Kuwait. This is because authority-based decision-making can discourage the staff and other talented people (objects of MI) at this organisation from sharing their ideas through undirected bottom-up innovation (ACCA, 2019), thereby hindering the successful fostering of innovation. Therefore, supporting inclusive decision-making would contribute towards idea generation and the practice of innovation at this organisation.

Moreover, considering the establishment of MI at the Kuwaiti Amiri Guard, the analysis of organisational activities identified a need for technology deployment (tools of MI), as per Kim *et al*. (2016), to manage routine tasks, information management, security, and staff management at this organisation. The interview respondents emphasised the need to train individuals (objects of MI) to become proficient in deploying and implementing advanced technology, echoing the challenge of ensuring management have the necessary skills highlighted by Burbidge and Webster (2019). The participants also argued that there is a

pressing need for the deployment of advanced technological tools (Kim & Laskowski, 2018) such as the IoMT equipment like biometric verification, facial recognition, autonomous intelligent radar, smart radar, and proximity card readers. However, for the successful deployment of the IoMT and management information systems (MISs), training programmes for technical skill development is a necessary concern for establishing MI at the Kuwaiti Amiri Guard, as well as raising awareness and encouraging involvement.

#### *6.4.1.1 Outcomes from the Subjects of MI*

Considering the first pillar of MI required for the successful fostering of innovation in the processes, systems, and mechanisms of management at the Kuwaiti Amiri Guard, a close linkage between the subjects, objects, and tools of MI was observed. Based on the evaluation of the themes, it was observed that the first pillar of MI (subjects of MI) at the Kuwaiti Amiri Guard potentially contributes to providing skill-development opportunities for staff by including (i) training programmes for the development of technical skills; (ii) supporting the digital management of information and security by introducing information management and security management with advanced technologies such as the IoMT and MIS, along with staff training; and (iii) establishing a collaborative work environment for fostering innovation by encouraging inclusive decision-making.

### *6.4.2 Objects of MI*

The second pillar of MI as the objects of MI includes the departmental leaders, managers, unit leaders, and staff at the Kuwaiti Amiri Guard. The second theme (the role of the objects of MI; see Figure 6.1) in relationship with the subjects of MI and tools of MI identified that the objects of MI require the development of talented soldiers and employees with excellent technical skills through providing them with encouragement and training for self-motivation to practise and construct creativity within the organisation. This highlights the importance of training (Ministry of Defence, 2020) to ensure that the organisation can reap the benefits from talented human resources (Burbidge & Webster, 2019).

Since human capital is a valuable asset in the military units, this pillar of MI emphasises the role of individuals such as departmental leaders, managers, unit leaders, and staff (soldiers) at the Kuwaiti Amiri Guard as the objects of MI for fostering MI in the processes, systems, and mechanisms of management at this organisation, along with the

deployment of advanced technology (i.e., the tools of MI) for the efficient and progressive management of organisational activities.

Considering this, the interviewees identified a need for developing in-house operations and control rooms by utilising the internal resources such as talented soldiers (some of whom have served in observation and control units) in utilising technology and networks (Zhang *et al*., 2012), and military supply chain logistics (Martin *et al*., 2020).

With the Kuwaiti Amiri Guard representing a military-sector organisation solely based on human capital, such capital is a necessary asset for ensuring the successful establishment of MI within the organisational activity system, as asserted by Steve Jobbs in terms of the ability of talented personnel: "It doesn't make sense to hire smart people and tell them what to do; we hire smart people so they can tell us what to do" (Vipman, 2018).

Therefore, this pillar of MI identifies the importance of the relationship between the subjects of MI and the tools of MI for successfully rendering the Kuwaiti Amiri Guard activity system, incorporated with the implementation of MI.

The subjects of MI such as the processes, rules, systems, and mechanisms of management determine the encouragement or discouragement of innovation (e.g., creating a group/unit of technologically skilled soldiers responsible for technological aspects and directly connected with the Head of the Kuwaiti Amiri Guard), while avoiding a mundane environment that leads to increased absenteeism and limits the potential for creativity.

To achieve this, training programmes should be provided to allow technical skills to be developed and advanced technologies (i.e., ICTs and the IoMT) to be deployed, with the UK's Ministry of Defence (2020) asserting that infrastructure, military capability management, and transformation are grounded in human resources and professional training. Moreover, The APSC (2016) highlighted the need for a framework to create technology-based training to promote innovation. On the other hand, implementing inclusive decision-making is also a necessary practice for developing motivation and encouragement to foster innovation at the Kuwaiti Amiri Guard, such as through undirected bottom-up innovation (ACCA, 2019).

#### *6.4.2.1 Outcomes from the Objects of MI*

The second pillar of MI (objects of MI) identified that investing in individuals contributes towards the creation of novelty for the organisation, such as the outcomes of the

subjects of MI. Therefore, the objects of MI require a critical focus on the establishment of an environment that encourages innovative practices (Arundel *et al*., 2019). These interactions between the subjects of MI and the tools of MI within the defined role of the objects of MI support the handling and managing of routine tasks, reduce the complexity of manual tasks, and adapt to advanced technology for the management of information, security, warfare, and organisational communications at the Kuwaiti Amiri Guard.

### *6.4.3 Tools of MI*

The third pillar of MI (tools of MI) observed according to the third theme (the role of the tools of MI; see Figure 6.1) identified an important role for the establishment of MI at the Kuwaiti Amiri Guard, namely, developing an understanding of the technological deployment opportunities that foster MI, as promoted by Kim *et al*. (2018), Shang *et al*. (2018), and Vecchiato (2017).

Deploying technology at the Kuwaiti Amiri Guard supports management effectiveness by replacing human tasks through technology to reduce the personnel requirements in the Kuwaiti Amiri Guard units. This features a combination of setting strategies and plans (subjects of MI) and technology (tools of MI), with an active role of the objects of MI in the technology-oriented management of the organisational activities at the Kuwaiti Amiri Guard.

The Kuwaiti Amiri Guard unit shares similarity with other military regiments in that it includes military duties and responsibilities, where the soldiers have to be trained, equipped, and be ready to receive and carry out orders in order to fulfil their role. However, there are additional duties that may extend beyond the typical military practices as the Amiri Palaces accommodate government employees and visitors. Therefore, controlling and managing security and information is a significant undertaking that needs to address internal and external security and the error-free management of information, as well as the access control system for the Palaces where several governmental departments are based that require a large number of Kuwaiti Amiri Guard members to secure the premises. Zhang *et al*. (2012) asserted the value of technology to enable an information exchange network that facilitates identification, surveillance, localisation, control, and management, while Seng (2016) underscored the need to ensure the security of technology infrastructure. With a limited workforce, investing in technology thus represents an ideal alternative to fill this human resources gap.

The deployment of a technology-based security system would reduce the need for the stationing of soldiers at each external and internal checkpoint, and within the control rooms. An access control system provides the relevant permissions for employees and visitors through the use of (contactless) proximity cards that are programmed depending on the building, department, or employee/visitor characteristics. Furthermore, there is an integrated CCTV system that allows the visual verification of the accessibility permissions of each person (proximity card holder), with intercom points that facilitate communication with operators to provide assistance. Therefore, the system, security, and control can be managed more effectively and with fewer human resources. Moreover, this integrated security system provides advanced observation of external and internal areas, and guard posts, thus playing a significant role in the decision-making of the unit leader.

The deployment of the IoMT for warfare communications also introduces tangible advantages for soldiers, providing them with accurate and timely intelligence for targeting, observing, or dealing with threats (Bistron & Piotrowski, 2021; Gotarane & Raskar, 2019); for example, the use of the IoMT to enable inter-device communication on the battlefield (Gotarane & Raskar, 2019) and AI for supporting decision-making (Reis *et al*., 2021), among other applications for technology in the military sector (see Figure 2.8). Moreover, the complete conversion of manual data to an MIS would provide the benefits of increased data management efficiency and accuracy through the greater potential for information sharing and data-driven decision-making (Gondalia *et al*., 2018).

#### *6.4.3.1 Outcomes from the Tools of MI*

Exploring the third pillar of MI (the role of the tools of MI), the additional tasks and responsibilities that govern the nature of the Kuwaiti Amiri Guard regiment create responsibilities that could extend beyond traditional military duties and practices, since the workplace features both soldiers and civilians, particularly in the Amiri Palaces.

While the Kuwaiti Amiri Guard staff are responsible for the access and security of the Palaces, they also have duties as soldiers who need to train and participate in military activities to improve their soldierly skills, thus resulting in a fusion of civilian–military duties and requiring a larger workforce. Beyond the workforce, the complexity could be enhanced in terms of the mechanisms applicable to the Kuwaiti Amiri Guard duties. Therefore, technology could play a significant role in reducing human tasks such as providing security and managing civilian access-control systems.

Having a strategy or policy for utilising technology to reduce the workflow processes could increase the control and the performance of implementing the required tasks. Therefore, the interaction between the subjects of MI and the tools of MI, whilst including the active role of the objects of MI, contributes to the replacement of human tasks through technology, thus encouraging soldiers to work in a technological environment and raise their awareness of the MI opportunities (Kim *et al*., 2018; Shang *et al*., 2018; Vecchiato, 2017).

Based on the developed theme and observed discussion from the respondents, the tools of MI along with active role of the objects of MI and the practical implementation of the subjects of MI results in the achievement of visibly advantageous outcomes. For example, information management increases the speed and precision of data management, which can be attained by deploying an MIS and providing sufficient training to staff at the Kuwaiti Amiri Guard; the security system can be tangibly improved by including facial recognition, biometric verification, and CCTV camera monitoring; and the IoMT can be utilised to improve general and conflict communications.

### *6.4.4 The Kuwaiti Amiri Guard Activity System and MI Activities*

In terms of arriving at the activity system relationships and outcomes, the systematic literature review findings shaped the MI parameters in the research field and encouraged the utilisation of activity theory. This, then supported the development of the conceptual framework for the case study, with semi-structured interviews conducted to gather qualitative data and identify themes and categories, and finally the MI outcomes (see Figure 6.2).

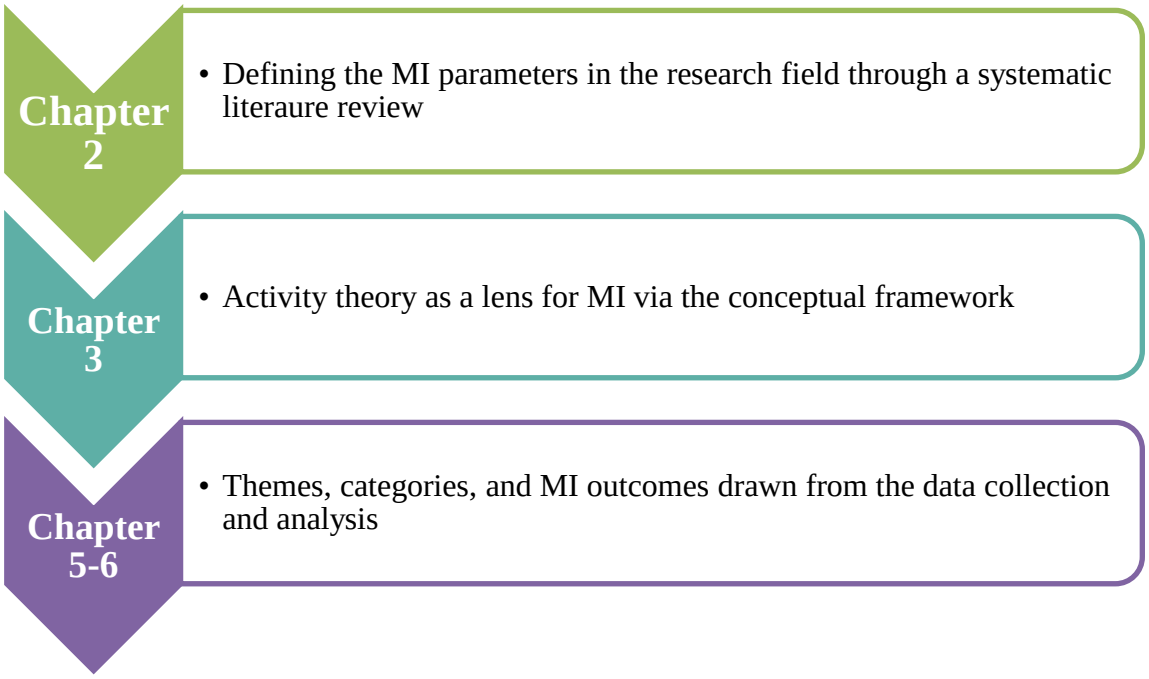



**Figure 6.2: Developing a Framework for Activity Theory as a Lens for the Kuwaiti Amiri Guard**

In terms of the process followed in Figure 6.2 to identify the MI outcomes in the organisation, certain limitations should be acknowledged. First, the study adopts an inductive approach underpinned by the interpretivist philosophy in order to develop theory, as opposed to a deductive approach that tests existing theory, with Saunders *et al*. (2019) cautioning that inductive research requires more time to be allocated to the data collection process, and that it is more challenging to prepare accurate time schedules. However, in this study a conceptual framework was developed to support the development of a framework for activity theory in the target organisation, while grounded theory was the approach to the data analysis, and therefore the inductive approach was deemed the most appropriate choice in this research. Second, the use of activity theory led to the acceptance of the limitations of the theory, as discussed in section 3.2.1, such as the need to ensure that the role of technology is not given unequal attention when compared to the subjects and objects of MI in the organisation (Simeonova, 2018); the importance of including the many actors involved in the organisational activity system within the lens of focus (Mursu *et al*., 2007); and that the researcher avoids any inappropriate, over reliant, or underuse of the applied theory (Nguyen *et al*., 2022). Third, the drawing of the themes, categories, and MI from the data collection through template analysis introduced the threat that the researcher placed excessive focus on the application of the template to the data, as opposed to employing the data to realise the

development of the template (King & Brookes, 2017). Finally, the iterative process of data collection and analysis involved in grounded theory is very different from the conventional linear approach whereby all the data are first collected, before the data analysis then takes place (Robson & McCartan, 2016). Nevertheless, while acknowledging the aforementioned limitations, it is felt that the development of the framework for activity theory as a lens for the Kuwaiti Amiri Guard as described in Figure 6.2 still represents a robust and effective process through which to inform the development of the final theoretical framework, as presented below.

To present the analysis of the data in a descriptive form, Figure 6.3 summarises and Figure 6.4 visually details the theoretical framework for activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, while Table 6.2 presents the specific and collective outcomes for each MI pillar in tabular format in response to the research questions established in section 1.7, namely:

RQ1: What are the mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard?

RQ2: How can ICTs enhance the MI in the Kuwaiti Amiri Guard?

RQ3: To what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard?

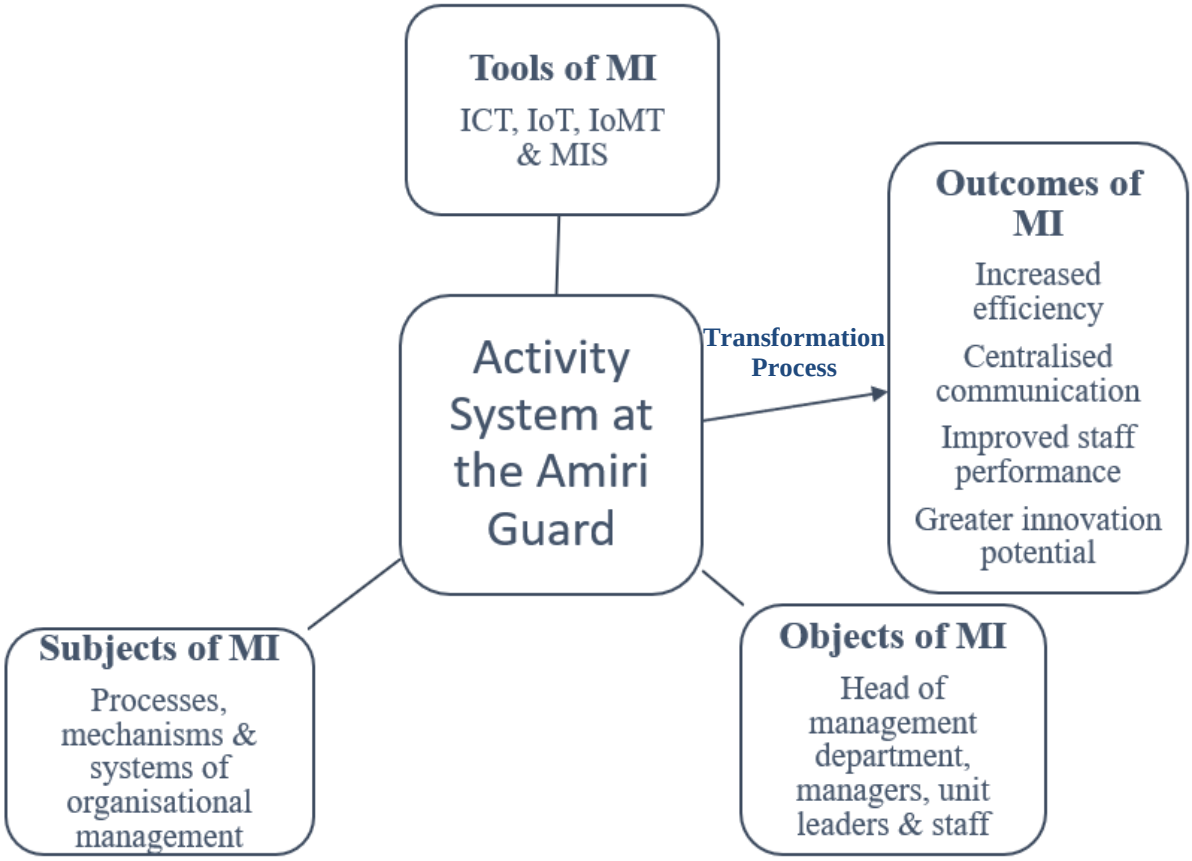



**Figure 6.3: The Kuwaiti Amiri Guard Activity System: MI Pillars**

The transformation process seen in Figure 6.3 reflects the development of the outcomes of MI. In simple terms, it is when the subjects, objects, and tools of MI are deployed and implemented, and then following successful implementation, the organisation will undergo transformation (e.g., novel processes and innovation) with the MI value-adding outcomes obtained.

**Table 6.2: The Specific and Collective Outcomes for each MI Pillar**

| MI Pillars with Outcomes | | | Outcomes of MI |
|---|---|---|---|
| | **Pillars** | **Outcomes** | |
| **Subjects of MI** | - Processes, mechanisms, systems of organisational management, information management, staff management, and security management at the Kuwaiti Amiri Guard | - Including training programmes for staff management to provide skill development opportunities at the Kuwaiti Amiri Guard<br>- Introducing information management and security management with advanced technology, along with staff training to support the digital management of information and security at the Kuwaiti Amiri Guard<br>- Establishing inclusive decision-making for staff management to provide a collaborative work environment that can foster innovation at the Kuwaiti Amiri Guard | - Increased efficiency of information management, staff management, security management, and communication management at the Kuwaiti Amiri Guard<br><br>- IoT and IoMT deployment to reduce the complexity of manual tasks with the fast and efficient processing of data and centralised communication by deploying advanced technology |
| **Objects of MI** | - Head of management department, managers, unit leaders, and staff at the Kuwaiti Amiri Guard | - Skills' development for the career development opportunities of staff to increase job satisfaction and organisational commitment<br>- Training programmes for deploying advanced technology to increase the technical skills of staff at the Kuwaiti Amiri Guard<br>- Inclusive decision-making to motivate the increased practice of innovation, thereby improving the overall organisational performance | |

| | | | |
|---|---|---|---|
| **Tools of MI** | - Technology advancement, ICT integration for carrying out daily routine tasks, managing information, security management, and collaboration between different units within the Kuwaiti Amiri Guard | - Deploying an MIS to increase the efficiency, speed, accuracy, and precision of data management<br>- Introducing IoT equipment for intact security to provide the facility of face recognition, digital authentication of ID, biometric verification, etc.<br>- IoT and IoMT equipment for warfare and general communication, providing the ability to communicate at larger distances and critical areas while supporting the confidentiality of communication | - Better staff performance with increased job satisfaction and organisational commitment<br><br>- Increased practising of innovation by introducing inclusive decision-making and a collaborative work environment |

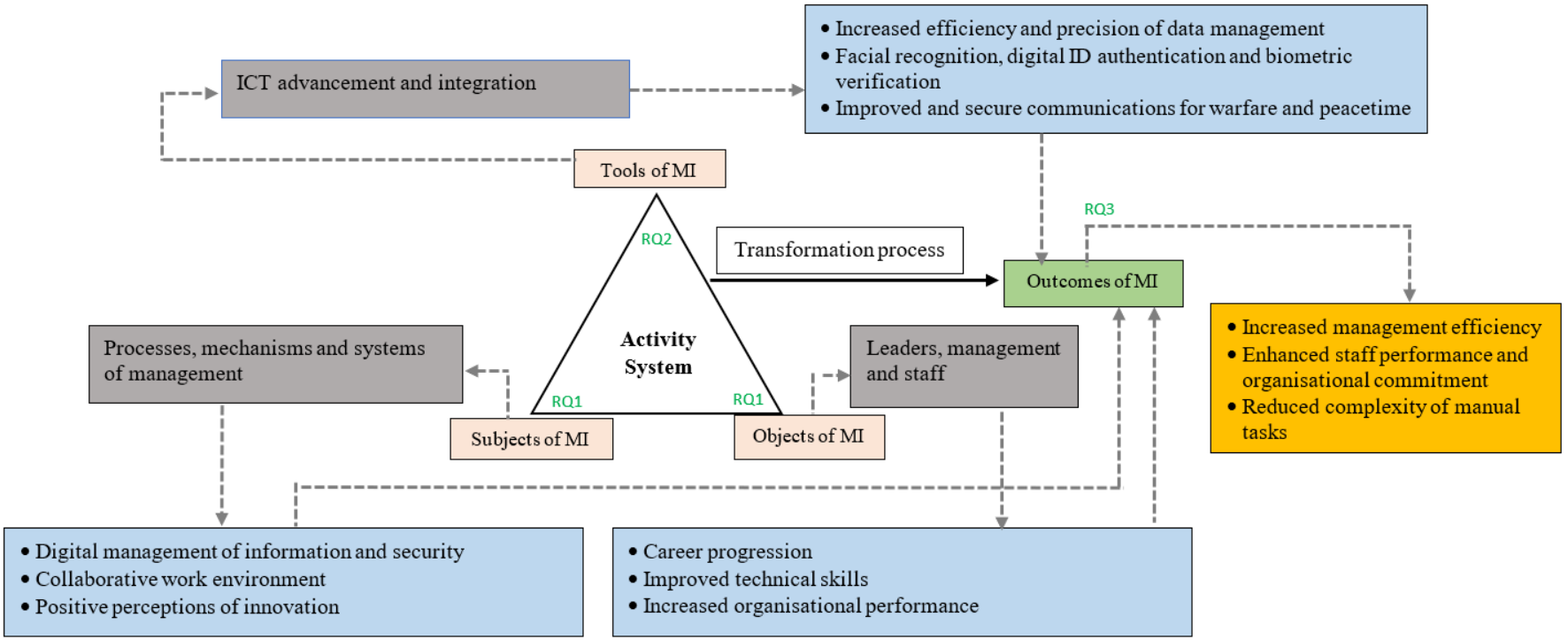



**Figure 6.4: The Kuwaiti Amiri Guard Theoretical MI Framework**

**Key**:

Cells: MI pillar; content of pillar; outcome of pillar; outcome of MI; defining benefits of MI outcomes.

Lines: dotted = ongoing dynamic activity; solid = fixed relationship based on the ongoing dynamic activities.

It can be seen from Figure 6.4 that the transformation process reflects the development of MI outcomes, whereby (i) the subjects, objects, and tools of MI are deployed and implemented; (ii) the organisation experiences transformation via innovation; and (iii) the relevant/MI value-adding outcomes are obtained. To provide an example: the content of the subjects of MI pillar is the processes, mechanisms, and systems of management. The outcomes are dynamic involving, among others, the digital management of information and security, which then leads to the defining benefit of increased management efficiency.

It should be acknowledged that there are a certain strengths and limitations to the theoretical framework presented in Figure 6.4. Research frameworks tend to emerge from a series of iterations (Robson & McCartan, 2016), and therefore alongside the improvements made by the researcher, academic colleagues' and the research supervisors' advice and opinions were sought in order to arrive at the final iteration of the theoretical framework presented in Figure 6.4. Coughlan *et al*. (2007) asserted that theoretical frameworks should be clearly presented and explained, and while the framework is designed to respect and reflect its component parts, and has already been refined into a less complex and more digestible form, some readers might still prefer a more elementary version that excludes the summaries of the pillar content and the final MI outcomes. Moreover, in contrast to the conceptual framework that highlighted the specific relationships of the subjects, objects, and tools in the Kuwaiti Amiri Guard, the theoretical framework represents an outcome of this study to explain and predict (Cohen *et al*., 2018) the development of MI outcomes in the Kuwaiti Amiri Guard, and allow the framework to be generalised to other military organisations in the region, as well as other countries that share similar national characteristics. It is also necessary to consider whether the theoretical framework contributes to responding to the research aim of presenting activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, which the researcher believes it achieves through presenting this military organisation as the case study through which the activity system is explored in terms of the MI activities and resulting MI outcomes.

## 6.5 Chapter Summary

This chapter presented the data analysis of the research. In total, nine categories emerged from the analysis: (i) Subjects of MI, (ii) Tools and Subjects of MI, (iii) Objects of MI, (iv) Tools and Objects of MI, (v) Organisational Activities and Subjects of MI, (vi)

Organisational Activities with Objects and Subjects of MI, (vii) Organisational Activities and Tools of MI, (viii) Organisational Activities and Tools Interlinked with the Subjects of MI, and (ix) Organisational Activities and Tools Interlinked with the Objects of MI. Next, these categories were analysed to develop themes by using activity theory as a lens to view MI, with three themes resulting: (i) the Role of the Subjects of MI, (ii) the Role of the Objects of MI, and (iii) the Role of the Tools of MI. These themes were then explored in the context of the Kuwaiti Amiri Guard and the pillars of MI—Subjects of MI, Objects of MI, and Tools of MI—to result in the development of the Kuwaiti Amiri Guard Theoretical MI Framework.

Through the analysis of the participants' responses, it was found that the majority of the respondents defined MI as new strategies and human actions to achieve opportunities and the broader organisational vision, with the organisational leader highlighting the importance of investing in training and talent. There was a general consensus on the need for investment in training and skills' development, due to a limited culture of innovation, with strong agreement that creative engagement and collaboration can lead to added value, and that the success of MI has a positive relationship with the capability of the personnel involved. Although external training is conducted to help ensure the Kuwaiti Amiri Guard Training School employs contemporary methods, there appears to be a lack of time, personnel, and skills for MI to flourish within the organisation. Despite being practised, there is no planned infrastructure or approach for implementing MI in the Kuwaiti Amiri Guard to promote cost savings and efficiencies of resources. A dedicated MI department (structured innovation) was suggested, with the head of the organisation open to the idea, as well as the recognition of opportunities for decentralised (unstructured) innovation through supporting inclusive decision-making.

There was strong agreement on the importance of modern devices and technology to support the workflows, and the need for additional funding to develop a critical military network and advanced IoMT technologies. Opportunities were cited for ICTs to support the warehousing stock management, which is currently a manual task, as well as to improve the links between departments with an MIS for improved information sharing and data-driven decision-making. There is definite scope to deploy technology to manage routine tasks, information, security, and personnel at the Kuwaiti Amiri Guard, although training is required to facilitate the deployment and implementation of advanced technologies, and to develop a clear understanding of the technological deployment opportunities that foster MI.

With the data analysis complete, and activity theory successfully employed as a lens for MI in the Kuwaiti Amiri Guard, Chapter 7 presents a discussion of the findings that emerged from the data analysis conducted in this chapter, in conjunction with the literature reviewed in Chapter 2.

# Chapter 7
# Discussion

## 7.1 Introduction

This chapter presents a reflective discussion based on the findings emerging from the case study interview data analysed in Chapter 6 and the systematic literature review conducted in Chapter 2. The discussion aims to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. Since this research contributes towards broadening the existing scope of the literature, a discussion is presented using the literature and in the light of the study findings. This chapter presents a reflection of the analytical process by identifying the responses to the research questions. To achieve this, the chapter includes a reflective discussion referring to the literature, the developed Kuwaiti Amiri Guard Theoretical MI Framework, and the justification for the proposed theory. After the role of the subjects, objects, and tools of MI at the Kuwaiti Amiri Guard have been discussed, the outcomes of MI are extrapolated. Finally, a roadmap is developed as an applicable tool to achieve MI via activity theory.

## 7.2 The Role of the Subjects and Objects of MI

*RQ1: What are the mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard?*

### *7.2.1 MI and Organisational Processes*

From the interview responses, the concept of the subjects of MI was typically defined as a novel or innovative means of effectively conducting a task or activity in a cost- and time-effective manner through utilising the optimum approach and skills. Arundel *et al*. (2019) categorised the subjects of MI as transformative policies that lead to substantial results or innovation, with Fonseca *et al*. (2019) highlighting the importance of soft skills as a key source of innovative procedures. The importance of the management to the facilitation of work was also raised, such as utilising MI to identify different options for the completion of administrative tasks and refining the administrative process. However, the utilisation of MI requires analysis of the organisational processes to identify opportunities for MI implementation, and thus formal processes should be introduced through either the current

management structure or the introduction of MI professionals/department who can support the organisation to improve administrative task completion while refining the organisational processes so that efficiencies and improvements can be made. In fact, the leader of the organisation expressed positive views in terms of the creation of an MI team of non-commissioned officers, under his authority, with permission to invest in talent to achieve the established aims. This links to Benaim's (2018) assertion that change should be implemented to meet the innovative vision required by the management, and underscores Milutinovic and Stosic's (2013) view of MI as a series of interconnected activities that have a significant impact on the socio-economic environment, representing crucial factors that determine the ultimate performance of innovative activities.

According to Participant 1-HA-32, the units and departments of the organisation contribute towards and fulfil their assigned duties, with the consideration of limitations due to the availability of resources and capabilities. This suggests a more incremental type of innovation process at play in the organisation, as opposed to systematic/directed, spontaneous, or radical innovation (ACCA, 2019). The ACCA (2019) identified that incremental innovation in public-sector organisations results in minor changes within the existing infrastructure of the organisation, thus providing a rationale for the limited MI conducted in the Kuwaiti Amiri Guard at present. Nevertheless, with the interviewees, including the head of the organisation, expressing a willingness to embrace MI, there is definite space for more systematic (directed) and undirected (bottom-up) innovation to take place and benefit the organisational processes. Dutta *et al*. (2017) reported that public-sector MI varies depending on the economic structure of the organisation, while Burbidge and Webster (2019) found much less innovation in public-sector organisations when compared to their private-sector counterparts, where it can be implied that organisations in the private sector are typically better resourced and more agile than those in the public sector. This view was supported by the heads of the branches, as well as the unit leaders, who highlighted limited contribution for MI development due to time pressures, the interactivity of human resources, and the technical capability, thus underscoring the paucity of established MI processes in the Kuwaiti Amiri Guard due to the lack of skills and resources. Burbidge and Webster (2019) reported the two greatest challenges for public-sector organisations as the shortage of talented and skilled individuals, and budgetary limitations. It was found that in terms of MI and organisation processes at the Kuwaiti Amiri Guard, while MI is recognised and implementation efforts are being made, there is a lack of formal MI processes at the

organisation (leading to strong directed innovation) and the space to encourage undirected bottom-up innovation to arise, with investment in resources and talent highlighted as necessary inputs that are currently lacking.

### *7.2.2 Policies, Rules, and Regulations*

The interviewee responses shone a light on the routine activities carried out by the branch administration, which included training and daily/weekly/quarterly duties such as attendance and inspection, performance evaluations, administrative tasks, and organising guarding responsibilities. This links to Bourke and Roper (2017), who underscored that this pattern describes the organisation's managerial environment, where interaction occurs with the workflow activities as part of the organisational strategy. According to Castellacci *et al*. (2018), organisations are reliant upon their strategies, policies, and procedures to create their own organisational principles and rules, which are then carried out by the management and employees. Moreover, MI emerges via implementation and diffusion so the organisational resources can be effectively utilised (Dan *et al*., 2018), which implies that all the described routine activities offer potential for the application of MI. The nature of the military context of this public-sector organisation was highlighted by the emphasis placed on the accuracy and timeliness of task completion, underscoring the potential for MI to contribute, and thus presenting opportunities for the implementation of the four types of MI described by Damanpour and Aravind (2012)—administrative innovation, organisational innovation, technological innovation, and management innovation—to address what Shultz (2016) referred to as the increasing gap between the private sector and the military in terms of MI awareness and practice. Recognising this gap, Participant 1-HA-32, the head of the organisation, expressed a willingness to engage with private-sector organisations to assist in the introduction of MI, although he underscored that maintaining control would be essential, given the sensitive nature of the work carried out by the Kuwaiti Amiri Guard. This indicates an awareness within the organisational leadership of the greater maturity of MI in the private sector (Burbidge & Webster, 2019), and an acknowledgement that public-sector military organisations can reach out to benefit from this rich private-sector knowledge, while putting checks in place to ensure that security and confidentiality are not compromised.

The interviews suggested that strategic policy exists to promote MI in the observation and control branch, whereby employees are also encouraged to express their opinions and ideas to promote the emergence of MI from within the management system. However, none

of the participants were able to refer to any concrete policies, rules, or regulations that specifically refer to MI. Cankar and Petkovsek (2013) asserted that public-sector MI is dependent upon compliance with new policy and regulations, and this willingness to listen to proposals from the management within the Kuwaiti Amiri Guard underscores the organisation's interest in and potential to fulfil the MI measures that are implemented, while helping to overcome the challenges that arise from public-sector administrations (European Commission, 2013). This represents an important finding, whereby the investigation revealed that the senior management, middle management, and operational level management are both receptive to MI, and eager to engage and implement it. Therefore, the initial challenge of convincing organisational members of the merits of MI would seem to be non-applicable, with the organisation appearing to be a fertile setting for formal MI implementation. Nevertheless, the interviews revealed the limited planned infrastructure for MI implementation in the Kuwaiti Amiri Guard's policies, procedures, and rules, and thus despite evidence emerging of MI practice, there is no dedicated MI department or integration into the systems of the organisation. This suggests that the current MI practice can be described as limited *directed innovation* and *incremental innovation* through the application of minor changes to the structure of the organisation to create value, while lacking *undirected innovation* that involves bottom-up changes within the organisation (ACCA, 2019). Therefore, this study finds potential scope to shift this organisational MI practice towards greater *directed* and *undirected innovation* through innovative skills leading to employees receiving benefits and rewards, and the creation of an organisational structure grounded in innovative practice (Arundel *et al*., 2019). Importantly, the leadership recognised the benefits of MI, and expressed a willingness to support such implementation, as well as acknowledging the possibility of reaching out to the more MI-mature private sector to help facilitate the introduction of MI. Such support might involve MI professionals offering consultancy services, or introducing physical MI systems (e.g., an MIS or biometric authentication).

### *7.2.3 Interaction of Entities/Individuals with Processes/System*

Considering the evaluation of the role of the objects and subjects of MI, the objects are the interacting actors responsible for implementing and following the subjects, with the interacting actors identified as the senior managers, team leaders, groups, and individuals who trigger or are stimulated by the subjects to perform tasks and make innovative managerial decisions. The literature defines objects as all those involved stakeholders who interact with an organisational system to derive the workflow, which is carried out in the

practical context of innovation processes at different management levels (Bhimani *et al*., 2018). During the analysis of the interview data, the development of categories as objects of MI highlighted that the Kuwaiti Amiri Guard as a military-sector organisation involves a considerable reliance on human resource due to the lack of advanced technologies, limited use of ICT, and the manual nature of many of the tasks such as physical guard duties and inventory checking. Therefore, the interaction between the subjects and objects of MI is of particular concern at the Kuwaiti Amiri Guard.

Since the categories and themes identified a mutual relationship between the subjects, objects, and tools of MI, the role of the objects of MI is associated with the subjects and tools of MI. This role, emphasised during the coding process, highlighted the need to enhance the talent and skills of individuals to facilitate the utilisation of advanced technologies to deal with the operational and functional activities at the Kuwaiti Amiri Guard. One finding involved the expressed need for additional personnel to help fulfil the current task requirements. While this might be appropriate, the scope for MI to reduce the personnel requirements should also be considered, such as utilising RFID to reduce the human demands of updating the weapons' inventory, and the introduction of an MIS to improve communication between the various departments. The economics of this decision-making (i.e., increased personnel vs investment in technology) could be achieved through formal evaluation by an MI professional, thus underscoring the need for such professionals, skills, or a dedicated department to be implemented in this organisation. This finding aligns with the discussion of Fu *et al*. (2018) that emphasised the need for investment to develop the processes of an organisation in reflection with the innovation adoption as practical implementation. This develops the objects of MI as managerial practices interact with organisational polices (i.e., the subjects of MI), while implementing the organisation's vision in a practical manner.

Guo *et al*. (2019) identified that the promotion of a higher degree of innovation in the managerial department results in increased organisational competitiveness. Considering this, the current study finds that the participants emphasised the need to promote the understanding and requirements of innovation to every individual through training and development programmes, to provide them with encouragement and training for self-motivation to practise and construct creativity within the organisation. Clearly, the successful implementation of MI within an organisation requires the participation of personnel at all

levels, and thus recognition of this importance within the Kuwaiti Amiri Guard is a positive finding that implies a readiness and willingness to implement and engage with MI systems in a more structured manner. This means ensuring that every individual at the Kuwaiti Amiri Guard learns the importance of fostering innovation at the managerial level, thus demonstrating a cooperative and vigilant attitude towards MI implementation within the organisation and aligning with the findings of Ji *et al*. (2017) that focused on the benefits of increased knowledge-sharing to achieve greater advantages at the organisational level.

Extending the discussion further, the categories (i.e., the objects of MI, and organisational activities with subjects and objects of MI) include a major proportion of the respondents identifying the need for training and the development of human capital to adapt to MI practices, and this was underscored by the organisational leader who confirmed the importance of "*appropriate training, investing in talent … to help the force manage administrative and military tasks more efficiently*". With training vital to ensure that the organisation can benefit from talented individuals (Burbidge & Webster, 2019), this study finds that the Kuwaiti Amiri Guard both recognises the relationship between talent and successful MI implementation, and is prepared to allocate the resources necessary to develop such talent. This echoes the perspective from the literature on the role of the subjects of MI as the organisational procedures and actions representing a key element for developing the human attributes in terms of creativity and innovation (Fonseca *et al*., 2019).

Thus, the objects of MI as the human participants within an organisation are linked with the subjects of MI as the organisational practices and actions for developing a culture that fosters the adaptation to MI. As a response to research question one, the organisational processes, systems, and mechanisms promoting the training, development, and motivation of individuals/entities at the Kuwaiti Amiri Guard were found to be limited. A need was identified for the introduction of talented individuals, MI professionals, and/or a dedicated MI department to conduct evaluations for where the introduction of MI might be beneficial, and to develop a culture where more planned innovation can occur, while the benefits of unstructured bottom-up innovation can also be promoted to benefit the organisation. Moreover, the possibility of reaching out to private companies was raised by the head of the organisation, highlighting a willingness to benefit from the typically more established MI found in the private sector. Through the development of formal MI process and policies, talent can be developed and recruited, and strategies implemented to ensure that the Kuwaiti

Amiri Guard fulfils its obligation towards the Kuwait Vision 2035 through promoting business conditions, keenness, and affordability, and the availability of a workforce with aligned skillsets in this military public-sector organisation, while developing the required creative human capital, a sustainable diversified economy, and strong progressive infrastructure (Mahdi, 2018).

## 7.3 The Role of the Tools of MI

*RQ2: How can ICTs enhance the MI in the Kuwaiti Amiri Guard?*

### *7.3.1 MI and the Need for Technological Integration*

The concept of MI in relation to the integration of technology has evolved into a widely used phraseology that can be noticed in a range of public-sector organisational settings such as public administrations, hospitals and healthcare providers, and universities (Arundel *et al*., 2019), and private-sector organisational settings such as agriculture, ICT, and supply chains (Dutta *et al*., 2017), software manufacturing (Sjödin *et al*., 2019), and textile and apparel manufacturers (Wadho & Chaudhry, 2018). However, the concept of technological integration and adaption to MI originates from the private sector, due to the flexible organisational structure and freedom for implementing new practices without external pressures (UN, 2017). On the other hand, the rigid structure of a public-sector organisation based on limited freedom and flexibility, and increased political pressure, serves to restrict such organisations from adopting new technological practices (Canker & Petkovsek, 2013). This limitation was acknowledged by the head of the organisation, who recognised the value in utilising the experience of private companies to facilitate MI implementation in this military organisation. Moreover, the current lack of technology integration in the organisation was also implied through the manual tasks being completed (e.g., weapons inventories, providing security, and managing civilian access-control systems), and inferred through the call for more personnel to help ensure task completion.

Observing the literature discussion, and in reflection of Themes 1–3, the pillars of MI with inclusive categories (i.e., the tools of MI, the tools and objects of MI, the tools and subjects of MI, the organisational activities interlinked with the tools and subjects of MI, and the organisational activities interlinked with the tools and objects of MI) were extrapolated. The adaption to advanced technological practices was observed to a limited extent due to the non-inclusive decision-making structure and rigid organisational structure (in some

departments) at the Kuwaiti Amiri Guard. Nevertheless, a strong desire to improve MI was expressed by the interviewed managers and leaders, through the implementation of security systems, investment in human resources (training), and the integration of ICT and the IoMT to facilitate administrative and security tasks, which calls for higher levels of MI. The head of the organisation raised the need to develop an MIS to improve inter-department communication, thus exemplifying how ICTs can enhance the organisation through more efficient and versatile communication channels. This idea was supported by fifteen of the sixteen unit leaders interviewed, highlighting its perceived importance and value to their workflows. Moreover, evidence emerged of a positive experience of ICT implementation, where Participant 13-UL4-20 reported that personnel pressures had been reduced by installing a security system at guard points and checkpoints, thus demonstrating that the organisation is willing to invest in ICT and develop new organisational behaviours (Kim *et al*., 2016).

Considering the role of the tools of MI within the organisational structure of the Kuwaiti Amiri Guard, all of the respondents emphasised an immediate need to deploy technological advances for the management of the various organisational activities. Around one-third of the interviewees reported the need for the organisation to invest in and utilise modern and advanced technology, which indicates a belief that the technology benefits the interviewees notice in their private lives could offer similar advantages in their professional roles. This also underscores the aforementioned receptiveness amongst the organisation's management that technology integration represents a positive change. Shang *et al*. (2018) asserted that the deployment of the tools of MI as technological advances and ICT integration contributes to the enhanced competitiveness of an organisation. However, the deployment of technological advances and ICT integration as tools of MI within the managerial activities in an organisation is considered as an entrepreneurial activity (Schumpeter, 1934, as cited in UN, 2017), with the concept of entrepreneurship being comprehensively restricted in public-sector organisations as the rigid organisational structure restricts the implementation of ideas and innovation within managerial practices (e.g., decision-making, adapting to new policy, and implementing change in existing processes) (Canker & Petkovsek, 2013).

On the other hand, the collaboration of public-sector organisations with their public-sector counterparts has also been suggested for promoting the adoption of technological advances and ICT integration (Modara *et al*., 2020). Such collaboration is suggested for motivating a readily implementable approach towards technological integration and ICT

deployment as the tools of MI. However, the challenges of public-sector organisations still limit their collaboration with the private sector to specific contexts, such as periods of economic crisis enforcing a need to modify the organisational structure; otherwise, the motivation of public-sector organisations towards the adaption to MI is typically obscured by issues such as the public administration, political pressure, and global challenges (European Commission, 2013). This links to the above-mentioned willingness of the head of the organisation to engage with a private company to assist in the design and installation of an MIS, and demonstrates organisational awareness of how public-sector military organisations can benefit from the more mature MI found in the private sector. If the installation of such an MIS proved successful, it could lead to further collaborations between the sectors, and the implementation of additional technology such as RFID for inventories, biometric recognition for access systems, and the IoMT to support personnel in conflict scenarios. As noted by Participant 8-HB7-20, introducing technology could also offer administrative benefits to the units such as "preparing reports, the evaluation of units, and the inspection of units".

In summary, while the need for integrating the tools of MI is certainly necessary at the Kuwaiti Amiri Guard, and encouraged by the organisational leader, the issues of non-inclusive decision-making and rigid organisational structure are currently restricting a smooth and immediate implementation. Nevertheless, the willingness to engage with the private sector is an important finding, as well as the receptiveness of the interviewed managers, while the positive experience of the successful implementation of a security system could pave the way for further technology implementation, as identified by the proposed MI professionals/department.

### *7.3.2 Organisational Activities and the Tools of MI*

For the practical adaption to technology advances as tools of MI, the context of organisational activities was evaluated. The categories (i.e., the organisational activities and tools of MI, the organisational activities interlinked with the tools and subjects of MI, and the organisational activities interlinked with the tools and objects of MI) included the analysis of codes for identifying the activities within the Kuwaiti Amiri Guard requiring the adaption to technology advances. The responses identified that the integration of technology advances as tools of MI is of great necessity for information management such as for report generation, the data management of soldiers, the centralisation of data for simplified updating and editing, inter-soldier communication, the development of collaborative communication

infrastructure between soldiers and higher-ranking officers, and durable and practical security management. The need to employ "modern devices and technology that contribute to the workflow" was cited by over half of the interviewees, while Participant 24-UL15-18 underscored the importance of personnel having the ability to process and implement instructions in terms of MI implementation and development. This emphasis on training to ensure the maximum benefits from such implementation is an important point that could be addressed directly by the organisation's existing Amiri Guard Training School. With Participant 7-HB6-22 highlighting that the Training School also arranges external courses, the potential then arises for MI training to be conducted both in-house through courses delivered in the Training School and supported by the proposed MI professionals/department, while organising external trainings to benefit from the broader field of the military, private, and public sectors. Again, this would help the Kuwaiti Amiri Guard to develop and attract the talent necessary to ensure that the organisation meets the requirements of the Kuwait Vision 2035.

The responses were further evaluated to identify the value of integrating the tools of MI, whereby the respondents identified the most prevalent benefits attained from digitalised systems as the error-free handling of data, precise and accurate information management, increased control, replacing labour-intensive tasks to accommodate the shortage of human capital, and promoting increased organisational competency. Participant 15-UL6-19 raised a current need to improve the communication between departments through technology or an integrated system, and that while efforts were being made in this regard, only limited improvements were anticipated. This highlights the opportunity for introducing an MIS, while utilising the proposed dedicated MI professionals/department to determine the requirements of such a system, and engaging with the private sector to ensure that the implantation fulfils the identified need. Reflecting this view in the literature, Vecchiato (2017) emphasised that merging managerial cognition with innovative technology could support organisations to provide a new set of features that develop performance in the long term. Furthermore, Kim *et al*. (2016) reported that ICTs lead to new human behaviours, new approaches to decision-making, and in turn, enhanced MI. In addition, Dougherty (2017) highlighted that digital innovation and science have increasing dependency with MI, where innovation drives development and technology to resolve complex tasks and critical organisational issues. Therefore, the literature is aligned with the interview responses,

identifying the tools of MI as a resourceful edification of organisational activities within the Kuwaiti Amiri Guard as a military organisation in Kuwait.

In summary, and in response to the second research question, the research has identified a range of opportunities for ICTs to enhance the MI in the Kuwaiti Amiri Guard. Through an MIS to improve inter-department communication, RFID to improve the efficiencies of inventory taking, as well biometric identification and the use of the IoMT, considerable opportunities have emerged for ICTs to enhance the MI within the organisation. Furthermore, an expressed willingness to engage with the private sector shows this organisation to be MI-friendly, and prepared to reach out to take advantage of the strengths of the private sector. The presence of the Training School within the organisation will allow the necessary talent and skills to be developed within the organisation, while serving to attract talent into the organisation through promoting the development of MI competency, thus underscoring the organisation's commitment to its obligations under the Kuwait Vision 2035.

### 7.4 Roadmap as an Applicable Framework Embedded by Activity Theory as a Lens for MI

*RQ3: To what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard?*

Referring to the handling and performing of organisational activities, information behaviour can be identified through motivated activity, which is the central focus of analysis in activity theory (Allen *et al*., 2011). Moreover, depending on the goal or objective, the engagement of the activity could pass through another stage or process level, or could be returned to be processed, thus leading to interactions between the activities. It is also observed that in the context of the activity system, the engagement occurs in terms of the actors (i.e., human interaction), the structure, and the artefacts (e.g., tools, communication, and technology) to mediate the activities or the interaction (Karanasios & Allen, 2018).

When considering the categorisation and theme development process, it was identified that these interactions also lead to certain behaviours, practices, or work allocation amongst members/departments, establishing legal or organisational rules that result in a systemic interaction or a system. These interactions in the form of an organisational community lead to transformational innovative processes for the achievement of the overall outcomes by realising the goals. This underpins the need to integrate MI within the

organisational processes, rules, and procedures, along with the deployment of technology tools for affirming a progressive confinement of organisational activities within the context of an organisation, such as that observed for the Kuwaiti Amiri Guard.

Therefore, the development of a working model describing activity theory as an implementation for embedding MI within the organisational context emerged as a response to the final research question. The proposed theory was developed, resulting in a practical framework for identifying the implications in the Kuwaiti military sector, as well as the public sector (since the Kuwaiti Amiri Guard belongs to the public-sector Ministry of Defence). This research proposes the Kuwaiti Amiri Guard Theoretical MI Framework (see Figure 6.4), which has the adaptability to be utilised by other military sectors in GCC states and regional countries with characteristics similar to Kuwait, such as those states attempting to transition away from an overreliance on oil revenues, by developing their private sectors and improving the efficiencies of their public sectors. For example, Saudi Arabia recently announced investment of $6.4 billion in technology start-ups (Bhat, 2022); the United Arab Emirates is investing between $2.7 and $3.8 billion annually in innovation, research, science, and technology to transition into a knowledge-based economy (Ministry of Cabinet Affairs, 2015); and through its Investment Authority (2020), Oman is seeking to recruit, develop, and retain talented Omani nationals, with the intention of developing the next generation of leaders. This demonstrates the regional drive amongst GCC nations to diversity and innovate their economies, and the applicability of the Kuwaiti Amiri Guard Theoretical MI Framework to help achieve this through applying MI to military and public-sector organisations. The developed framework will enable such organisations to determine their MI usage and potential through analysing the organisational subjects of MI (i.e., processes, mechanisms, and systems of management), objects of MI (i.e., leaders, management, and staff) and tools of MI (i.e., ICT advancement and integration) to allow the transformation process be realised and the result of improved efficiencies, information accuracy, cost-savings, collaboration, and performance. The outcomes of the MI pillars are presented in Figure 7.1, and the proposed theory is rendered as an MI benchmark and roadmap in the form of a practical model for activity theory as a lens to achieve MI in detailed tabular format in Table 7.1. Then, Figure 7.2 presents the roadmap visually with practical emphasis based on the management, leadership, technology, and environment domains.

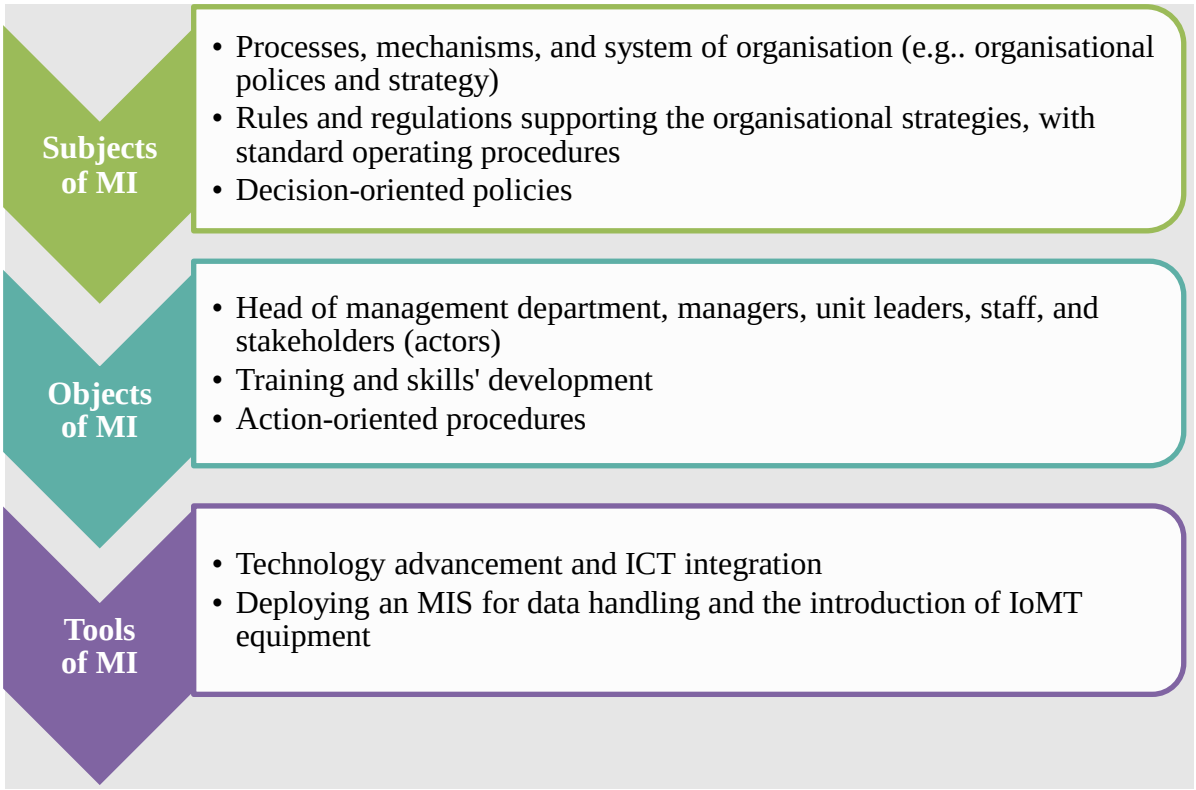



**Figure 7.1: Outcomes of the MI Pillars**

**Table 7.1: Roadmap for Activity Theory as a Lens to Achieve MI**

| MI Pillars with Outcomes | | | Outcomes of MI |
|---|---|---|---|
| | **Pillars of MI** | **Outcomes** | |
| **Subjects of MI** | - Processes, mechanisms, and system of organisation | - Training programmes and skills' development opportunities to provide the outcomes of:<br>- fostering the practice of innovation<br>- inclusive decision-making, resulting in a collaborative work environment | - Increased management efficiency<br>- Improved staff performance<br>- Accurate information management<br>- Reduced cost of labour<br>- Less complexity of manual tasks<br>- Fast and efficient processing of data<br>- Centralised communication |
| **Objects of MI** | - Head of management department, managers, unit leaders, and staff | - Skills' development to provide the outcomes of:<br>- motivation towards innovation fostering<br>- improved organisational performance | |
| **Tools of MI** | - Technology advancement and ICT integration | - Deploy an MIS for data handling and introducing ICT/IoMT equipment to provide the outcomes of:<br>- effective communication<br>- intelligent data management<br>- intact security | |

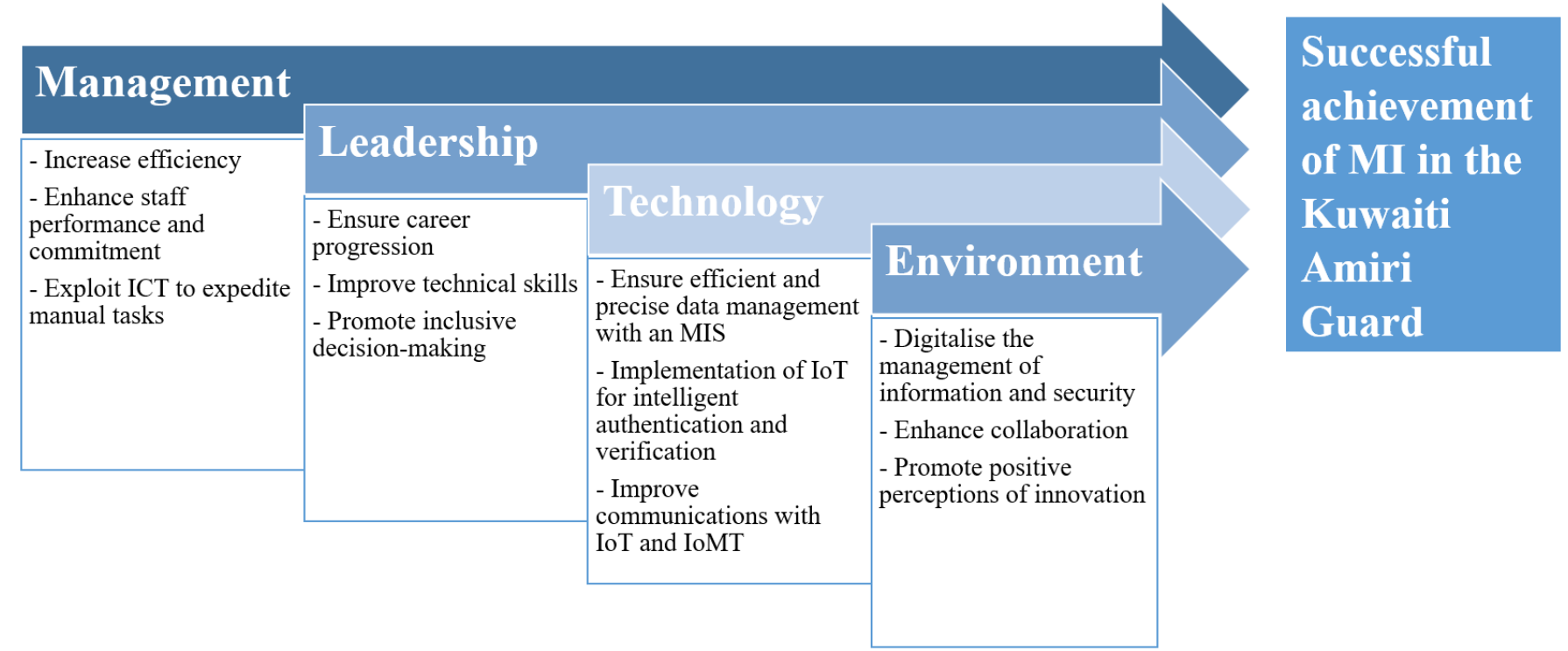



**Figure 7.2: Roadmap for Activity Theory as a Lens to Achieve MI**

It can be seen that the resulting roadmap in Figure 7.2 focuses on the four organisational areas of management, leadership, technology, and environment to achieve MI in a public-sector organisation such as the military.

In terms of achieving MI in the **management** domain, this should be realised by (i) employing measures to increase the efficiency of management processes by improving the connectivity between departments; (ii) enhancing staff performance and commitment through investing in human resources via training and skills' development; and (iii) utilising ICT to expedite manual tasks to reduce the personnel requirements.

In the **leadership** domain, the required measures are to (i) ensure career progression by developing a clearly defined path to advance within the organisation, so talent can prosper to the organisation's benefit; (ii) improve technical skills to enable proficiency in deploying and implementing advanced technologies; and (iii) promote inclusive and decentralised decision-making within the organisational processes, systems, and mechanisms, as authority-based decision-making discourages talented staff from sharing their ideas.

In terms of achieving MI in the **technology** domain, this should be realised by (i) ensuring efficient and precise data management with the implementation of an MIS so that manual data can be entered into the system, and all data can be more easily processed, managed, and accessed; (ii) implementing IoT for intelligent authentication and verification such as facial recognition, digital authentication, biometric verification, and proximity card readers; and (iii) improving communications by utilising the IoT and the IoMT, and ensuring that the necessary training regime is implemented to support the introduction of such technologies.

Finally, in the **environment** domain, the required measures are to (i) digitalise the management of information and security to reduce the personnel requirements, and improve data access and management; (ii) enhance inter-organisational and inter-sector collaboration to benefit from developments in the field; and (iii) promote the positive perceptions of innovation through organisational actors dedicated to MI, with resources made available to explore and implement measures over the medium term.

Figure 7.2 provides this study's roadmap for activity theory as a lens to achieve MI understanding and implementation in the Kuwaiti Amiri Guard. The conceptualisation of the roadmap is grounded in the thought process of MI deployment for the improvisation of

organisational management, as supported by the findings of Agogué *et al*. (2017) and García-Cruz *et al*. (2018) that emphasised the role of MI in the optimal management structure of an organisation.

Mapping the observed findings as the roadmap for implementing MI in the Kuwaiti Amiri Guard links with the application of activity theory. In other words, the conceptualisation of this research in view of activity theory provided the basis for exploring the management structure of the Kuwaiti Amiri Guard in terms of MI application. This classified the exploration dimensions as the pillars of MI, namely the subjects, objects, and tools. Whereas the extrapolation of these pillars of MI resulted in the exploration of the transformation process to provide certain outcomes for the improved management of MI in the organisation.

The roadmap for the Kuwaiti Amiri Guard was developed from the pillars of MI, whereby the subjects of MI were the policies, rules, and regulations of the organisation; whereas the objects were the individuals interacting with the organisation who performed the tasks and activities; while the tools were the technology used for facilitating the management processes, as well as to assist the individuals in performing their tasks and activities in the organisation. Observing the roadmap for the Kuwaiti Amiri Guard in terms of this research, it is identified that the management, leadership, technology, and environment domains are the fundamental dimensions for the understandable and practical implementation of MI in the organisation. Better understanding of this discussion is achieved by the structural observation of this research as the pillars of MI, whereby the role of leadership and management is linked with the subjects of MI. The rules, policies, and regulations in the Kuwaiti Amiri Guard, or any public-sector organisation for that matter, are rigidly associated with the management and leaders, whereby the crucial importance of management including the role of leadership is fundamental for the successful implementation of MI in the organisational structure. On the other hand, the objects of MI, namely the individuals performing certain tasks and activities, are closely linked with the management of the organisation. The leaders and management staff are also included in the objects of MI because of the restricted role of leadership and management under the governmental structure, as implemented in the Kuwaiti Amiri Guard as a public-sector organisation. Moreover, technology as a dimension of the roadmap is also mapped with its conceptualisation of activity theory as the third pillar of MI. The tools of MI determine the facilitating role for the optimal management of the organisation, as well as

improvement of the knowledge, skills, and expertise of the individuals engaged within the organisation. This dimension also links with the subjects and objects of MI, as the decision to deploy and implement tools for optimal management depends on the policies, rules, regulations, management structure, decision-makers, and the role of individuals for performing their tasks and activities in the Kuwaiti Amiri Guard.

With the roadmap reflecting the findings of the case study, the outcomes of MI were extracted. These were determined as the utility perspective of each dimension as presented in the roadmap for the Kuwaiti Amiri Guard. The utilisation perspective of these dimensions is a reflective representation of the findings obtained from the interviews, extracted as codes, then categorised with relevancy, and finally conceptualised into themes for extrapolation into grounded theory for implementing MI in view of activity theory. As the interview questions were designed under the structural concept of activity theory, the findings were therefore categorised and thematically reflected under the domain of the subjects, objects, and tools of MI, whereas the interpretation of the findings was presented as the outcomes of MI. Therefore, this study finds that activity theory is highly effective in helping to understand the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard, thus responding to the third and final research question.

### 7.5 Chapter Summary

This chapter presented a discussion of the findings emerging from the data analysis in Chapter 6. A discussion was conducted via the perspectives of the literature to reflect on the data analysis and respond to the research questions, as established in Chapter 1. Finally, the findings from the Kuwaiti Amiri Guard case study were utilised to create a roadmap for implementing activity theory as a lens for achieving MI.

Through the responses of the leaders and decision-makers of the Kuwaiti Amiri Guard, it was found that a positive attitude exists towards the implementation of MI in the organisational structure; however, there is a lack of proactive strategy in this military organisation in Kuwait due to time pressures, the availability and the interactivity of human resources, and the technical capability. Furthermore, the importance of MI implementation was identified for fostering the practice of innovation if carried out under inclusive decision-making and a collaborative work environment. Therefore, the first pillar of MI (i.e., the subjects of MI) explored in the Kuwaiti Amiri Guard resulted in the dimensional approach of

the role of management and leadership, with the associative determining of technology deployment and focus on the environment. On the other hand, through the exploration of the second pillar (i.e., the objects of MI), the perceptions of the Head of the Kuwaiti Amiri Guard, the heads of branches, and the unit leaders were explored regarding their organisational tasks and activities under the designed policies, rules, and regulations of the Kuwaiti Amiri Guard. The interview questions were designed to gain insight into the role of MI in the organisation, where the findings revealed that the leaders at the Kuwaiti Amiri Guard are motivated towards the skill development approach for the successful implementation of MI, whereas the focus on a collaborative environment along with a motivational approach to skills development was also observed. Therefore, this pillar of MI places emphasis on the environment of the organisation for MI deployment, including the links with the leadership and management. For the last pillar (i.e., the tools of MI), the interview questions were designed to gain insight into the technology employed at the Kuwaiti Amiri Guard. The findings highlighted a positive and motivated perception towards technology integration for data management, security, and supporting collaborative communication in the organisation to facilitate the performing of daily tasks and activities, as well as for special purposes. Therefore, this pillar of MI focused on the technology dimension with a decisional dependency on the organisational leadership and management, through mapping optimal support to the environment via the facilitation of collaboration, the efficiency of management, and the optimisation of organisational processes.

In the next chapter, the conclusion of the research is presented, as well as the study's contributions, recommendations, limitations, and opportunities for further investigation.

# Chapter 8
# Conclusion

## 8.1 Introduction

This chapter presents the conclusions achieved through this empirical research. Based on the literature review, conceptual framework, and research methodology, the researcher investigated the managerial activities in the military departments of the Kuwaiti Amiri Guard to present activity theory as a lens for MI activities regarding the subjects, objects, and tools of MI. A critical evaluation of ICT in the military sector was conducted to determine the role of such technology in enhancing MI, thereby developing recommendations for deploying MI in the organisational structure of the Kuwaiti Amiri Guard, as well as other military and public-sector organisations in similar contexts.

This doctoral research spotlights a critical military context in the Middle East, namely the Kuwaiti Royal Palaces and the military base of the Kuwaiti Amiri Guard. The researcher deployed case study evidence from the Kuwaiti Amiri Guard to map the MI and its subjects, objects, tools, and outcomes as a systemic process. In terms of the dimensions of MI, the organisational processes, policies, rules, and regulations were identified as the *subjects*; the individuals responsible for performing their roles within the scope of the subjects of MI were identified as the *objects*; and the technological approach was identified as the *tools* for linking the interaction between the *subjects* and *objects* for fostering innovation with respect to the activities in the organisational context of MI. Grounded theory was applied to the data analysis and findings from the case study to present the implications of MI in the Kuwaiti Amiri Guard through applying activity theory as the implementational tool.

On completing this study, the findings have responded to the research questions established in section 1.7, thus reflecting the achievement of the research aim and objectives found in section 1.6. A structural reflection of the research is presented in section 8.2, and the final outcomes summarised in section 8.3. Then, the internal and external validation of the research framework can be found in section 8.4, with the research contributions stated in section 8.5, followed by the recommendations, limitations and opportunities for future work in sections 8.6, 8.7 and 8.8, respectively. Finally, a chapter conclusion draws the thesis to a close.

## 8.2 Structural Reflection of the Research

This section presents a reflection of the research, where each chapter is summarised to provide a structural conclusion to this research.

**Chapter 1** provided insight into the scope of this research. The research context of Kuwait was explored in terms of the Kuwait Vision 2035, the need to diversify from a reliance on fossil fuel extraction, and thus the need for MI. Conclusively, with the trends of technology developing over time, the current domain of technological development was found to be fundamentally related to the conceptualisation of innovation. Therefore, the application of innovation in an organisational context became evident, whereas the background of Kuwait identified a more visible need for integrating innovation in its public sector. While discussing the applications of innovation in an organisational structure, focus was placed on the concept of MI. It was found that while MI is frequently and sufficiently addressed in the private sector, there is a lack of such focus on MI in the public sector. However, the military domain as a public sector carries a fundamental importance for technology deployment, with ICT, the IoT and IoMT found to play a significant role in the military field and how military departments can ensure continuous adaptation to technology. Moreover, IoMT applications were found to be applicable to different military areas such as human performance, logistics, and medical care for soldiers.

Considering the context of technology deployment and the implementation of innovative practices in the military sector, a realisation of the organisational setting was identified. This realisation was attained by exploring the organisational activities that occur under the procedural settings and the deployed tools in view of the individuals' role in carrying out the activities. To understand and explore this concept, the application of activity theory was introduced.

Kuwait's economy is mainly reliant upon the oil and gas industries, while lacking the application of MI in its public-sector organisations. Yet, the importance of innovation at the current time requires the Kuwaiti public sector to foster a strategic MI approach within the sphere of its public-sector organisations, with the Kuwait Vision 2035 reflecting this ideation. In view of public-sector organisations, the military sector was observed as being unfocused when evaluating the Kuwait Vision 2035 in terms of innovation in its overall system. Since the military has significant importance as a sector within the public domain in Kuwait, the

Kuwaiti military (i.e., the Kuwaiti Amiri Guard) was established as the focus for this research.

**Chapter 2** involved a systematic literature review to explore the concept of MI in the organisational sector through its dependency on organisational structures. The literature review identified the challenges of public-sector organisations adapting to innovation due to the differences in the organisational structure, whereby the existence of external pressure, societal challenges, and political factors restricts decision-making and implementing innovation in the public sector. It was also found that despite the comparative rigidity towards innovation in its organisational structure, the public sector requires space and flexibility to implement innovation. The implementation of innovation was found to be focused within the administrative aspects of the organisational structure. To further understand the context of the existing innovation approach in the public sector, the direction of MI was explored. This identified that incremental innovation is the principal direction of innovation in the public sector, due to the sustenance of organisational policies and the expectation of minor changes in the existing infrastructure by introducing transformation in the organisational activities through the enhancement of the tools and aspects of managing human capital (e.g., talent management and skill development). Meanwhile, the management of human capital in the public sector was observed as the most challenging task.

To understand the evaluation of MI within the public sector, the Kuwaiti military was selected in this study, since the core purpose of the research is based on the rigidity of the organisational structure in the public sector. The selection of Kuwait was due to the unfocused approach of the government in terms of innovation integration in the military sector, as observed from the Kuwait Vision 2035, and also the past approach of this state towards innovative practices, as identified by the researcher who is embedded within the Kuwaiti Amiri Guard in a military capacity.

As the focus was based on the exploring the organisational structure to identify a need for MI implementation in Kuwait's military sector (i.e., the Kuwaiti Amiri Guard), the organisational activities were explored relating to the procedures, policies, rules, regulations, the bodies interacting with the administration, and the required tools for supporting the implementation of administrative tasks. The theories of innovation were also analysed (i.e., innovation diffusion theory, open innovation theory, and inclusive innovation theory), identifying elements not directly focused on the organisational structure in terms of the

policies, rules, and regulations with the involvement of interacting individuals, and the required tools to carry out these activities. Therefore, it was decided to present a mapping of activity theory as the main tool to conceptualise this research in Chapter 3.

The theoretical grounds for the selected pillars of MI (i.e., human capital, ICT, and stakeholders' organisational policies) were established by exploring the subjects of MI as representative driving factors such as the stakeholders' organisational policies, the objects of MI as human capital, and the tools of MI as ICT integration for the purposes of optimising the organisational processes and functions. The reviewed literature revealed the lack of a clear linkage of these factors as a core component of MI in the public sector, thus highlighting the need to present the clear association of these factors as a fundamental component of MI in public-sector organisations.

**Chapter 3** identified activity theory as the main tool to develop the conceptual ground of this research. Considering the aim of this study, the implementation of innovation in an organisational setting was varied due to the organisational structure. Therefore, focusing on the understanding of MI in an organisation was mapped to the organisational structure, since Chapter 2 discussed the theories of innovation necessary to provide the conceptualisation of the organisational structure, including the involvement of human interaction with the administrative structure, along with the interaction of the required tools. Therefore, activity theory was considered due to its conceptualisation of the activity system, including the interaction of individuals with the policies, rules, and regulations, along with the tools interlinking the interaction of individuals. This conceptualisation of activity theory provided the required ground for exploring the implementing context of MI in Kuwait's military-sector organisation based on its structural settings.

Considering the context of a military environment, it was observed that the organisational structure in terms of administration includes multiple tasks/practices that combine the consideration of the military obligation for administrative and military purposes. The administrative perspectives of employee practices could be represented as those activities within the organisation that involve the human needs necessary to perform the required tasks and performance (MI objects). However, the military perspective involves distinct characteristics in terms of task completion. It may also entail different considerations that are not characteristic of a typical organisation, but has its own procedures and policies that create the processes within the required strategy (MI subjects).

As a conceptual framework, certain elements were focused on such as authority, priority, complexity, relationships, and permission, while the technology represents a tool (mediator) that handles the subject in the transformation process reaching the object. A number of researchers, particularly in the USA and Scandinavia, mentioned the interaction between forming human technology and the larger context of objective human activities, where the theory facilitates in achieving a deeper understanding of technology and its value for people systems (Kaptelinin & Nardi, 2018).

The potential implementation of activity theory in military MI involves a range of considerations including managerial, administrative, and innovative practices that are undertaken within strategic decision boundaries or organisational strategy. Establishing a strategy from previous outcomes and the organisational vision has a significant impact, particularly within MI that contains connected parameters that interact through transformational processes to achieve the MI value-adding outcomes.

While merging the discussed MI concepts (i.e., MI objects and subjects), the third proposed element was the tools that interlink the MI objects and tools, including the deployment of technology. Particularly, these tools govern the MI activities being performed systematically and innovatively; for example, enhancing innovative technology in an organisation through providing accurate data to decision makers, and enabling the analysis of the actual performance, thus assisting in the establishment of a strategy and decisions to be followed by subordinates. Moreover, the MI activity system includes the interplay between the subjects, objects, tools, and overall outcomes from the scope of the MI.

The conceptualised framework of MI as a system of activities facilitated a critical analysis in the public sector such as the military field, and thereby provided the required ground for developing activity theory as a lens for MI in the military sector.

**Chapter 4** developed the methodological framework for this research, which was informed by the literature. For the design of the research methodology and the selection of relevant strategies, the concept of the research was kept in view, namely to present activity theory as a lens for MI activities in the Kuwaiti Amiri Guard. With the research approach determined as *inductive*, the philosophical grounds of the research were explored. While analysing and exploring the philosophical ground, its further dimensions as *social constructivism* and *interpretivism* were identified, with social constructivism describing the

interaction of the social actors in terms of their experiences and practices, and interpretivism utilised to help understand the complex and challenging nature of organisational management.

Considering the approach of this research as *interpretative phenomenology* described the explorative nature of this study. The research involved the collection and analysis of primary data from the lived experiences and understandings of the participants about the target phenomenon (Creswell, 2013), namely MI implementation in the Kuwaiti Amiri Guard, through *case study* as the research strategy. The understanding of MI was viewed within the lens of activity theory.

Reflecting the research philosophy and research approach, the research design involved *qualitative interviews*, *template analysis* and *grounded theory*. The case study evaluation of the MI concept in the Kuwaiti Amiri Guard within the application of activity theory was achieved by conducting semi-structured interviews, with template analysis and grounded theory applied to the collected data, and grounded theory then enabling the extrapolation of the findings from the case study within the integration of activity theory and the findings from the literature review. This provides a research contribution by developing a working model for implementing MI in the Kuwaiti Amiri Guard through the lens of activity theory.

**Chapters 5–7** included the critical process of coding, analysing the research data, and presenting an evaluative discussion, thus taking this research to its core purpose of responding to the research aim, questions, and objectives. Chapter 5 presented the process of coding the data drawn from semi-structured with the 25 study participants, with codes, sub-categories and categories resulting from the template analysis of the qualitative data. In Chapter 6, the overall data analysis was conducted to understand the concept of MI in the Kuwaiti Amiri Guard through the lens of activity theory. The findings were extrapolated to develop grounded theory and provide a working model to implement MI in the Kuwaiti Amiri Guard. Chapter 7 then conducted a comprehensive reflection of the analysed data in conjunction with the literature reviewed in Chapter 2, to determine the achievement of the research objectives and responses to the research questions.

The overall findings identified that the first pillar of MI (subjects of MI) at the Kuwaiti Amiri Guard contributes to providing skill-development opportunities for staff by

including (i) training programmes for the development of technical skills; (ii) supporting the digital management of information and security by introducing information management and security management with advanced technologies such as the IoMT and MIS, along with staff training; and (iii) establishing a collaborative work environment for fostering innovation by encouraging inclusive decision-making.

The second pillar of MI (objects of MI) was identified to have a critical focus on the establishment of an innovative atmosphere or environment that encourages a higher level of creativity, which could increase the potential to innovate. These interactions between the subjects of MI and the tools of MI within the defined role of the objects of MI were found to facilitate the handling and managing of routine tasks, reduction of the complexity of manual tasks, and adaptation to advanced technology.

On the other hand, the third pillar of MI (tools of MI) along with active role of the objects of MI and the practical implementation of the subjects of MI was found to result in the achievement of advantageous outcomes such as the optimised management of information, security, warfare, and organisational communications at the Kuwaiti Amiri Guard.

With the structural reflection of the research now complete, the next section summarises the research outcomes in terms of how the research questions were answered, and the research objectives achieved.

## 8.3 The Final Outcomes of the Research Objectives and Research Questions

The final outcomes of the research objectives and research questions are presented as follows:

### *Objective 1: To conduct a systematic literature review to inform the development of a framework that can realise MI in view of activity theory*

In Chapter 2, a systematic review of the literature was conducted to create an evidence-based foundation for this research. The origins of MI were also investigated, as well as how MI is conceptualised in both the private and public sectors. The nature of the military context was highlighted by the emphasis placed on the accuracy and timeliness of task completion, thus presenting opportunities for the implementation of the four types of MI

described by Damanpour and Aravind (2012)—administrative innovation, organisational innovation, technological innovation, and management innovation— whereby applying such innovation involves the introduction of something original and new (e.g., ideas, devices, or processes). Three theories were found to be frequently utilised in the literature to conceptualise MI: innovation diffusion theory, involving the reduction of the uncertainties of technological adoption (Rogers, 1983); open innovation theory, reflecting a collaborative and interactive process with external stakeholders (Veer *et al*., 2012); and inclusive innovation theory, whereby a social emphasis helps quality products and services to become accessible to those from the lower social classes (Henkel, 2006). Meanwhile, the essential components of MI were established as the subjects of MI (e.g., the organisational policies and procedures), the objects of MI (e.g., human capital), and the tools of MI (e.g., ICT integration for the purposes of optimising the organisational processes and functions). The literature review highlighted a need to investigate these factors, and in particular to explore the selected factors of MI in public-sector organisations such as the military, thus underscoring the gap that this research fills. Then, activity theory was explored in Chapter 3 to help understand how MI might evolve within certain public-sector military institutions, with the support of a conceptual framework.

***RQ1: What are the mechanisms, processes, and systems of MI in the Kuwaiti Amiri Guard?***

This case study investigation identified that strategic policy exists to promote MI in the observation and control branch of the Kuwaiti Amiri Guard, whereby employees are also encouraged to express their opinions and ideas to promote the emergence of MI from within the management system. Nevertheless, the absence of a specific approach of planned infrastructure for MI implementation in the Kuwaiti Amiri Guard's policies, procedures, and rules was revealed, and thus despite evidence emerging of MI practice, it was found that there is no dedicated MI department or integration into the systems of the organisation, although the head of the organisation expressed a willingness to invest in talent through the creation of an MI team under his directed authority, as well as reaching out to private companies where MI is more mature. The investigation found that the MI practice can best be described as limited *directed innovation* and *incremental innovation*, with minor changes applied to the organisational structure for value creation, while *undirected innovation* involving bottom-up changes within the organisation is lacking (ACCA, 2019). Therefore, there is scope to shift this MI practice towards greater emphasis on *directed innovation* through innovative skills, thus leading to employees receiving benefits and rewards, and the creation of an

organisational structure grounded in innovative practice (Arundel *et al*., 2019). Furthermore, such MI development and implementation is necessary to fulfil the organisational obligations to the Kuwait Vision 2035 by introducing mechanisms, processes, and systems that improve the efficiency and outputs of the Kuwaiti Amiri Guard as a military public-sector organisation through developing the required creative human capital, a sustainable diversified economy, and strong progressive infrastructure (Mahdi, 2018).

The response to research question 1 includes the achievement of research objectives 2 and 3, as follows:

***Objective 2: To investigate the activities of MI by the departments of the Kuwaiti Amiri Guard through conducting semi-structured interviews***

The interview responses identified the routine activities carried out by the branch administration of the Kuwaiti Amiri Guard, including training and daily/weekly/quarterly duties such as attendance and inspection, performance evaluations, administrative tasks, and organising guarding responsibilities. The study also identified that the Head of the Kuwaiti Amiri Guard, the units, and departments of the organisation contribute towards fulfilling their assigned duties. However, there was a limitation of the availability of resources and capabilities for implementing MI. Dutta *et al*. (2017) identified that public-sector MI varies depending on the economic structure of the organisation. When addressing the processes, regulations, and policies as the *subjects* of MI, the *objects* of MI were observed with certain limitations in terms of overcoming the existing challenges. For example, the heads of the branches, as well as the unit leaders, highlighted the limited opportunities for MI development due to time pressures, the interactivity of human resources, and the technical capability. Particular emphasis was placed on the Royal Palaces, over the military base, where in the former there is greater movement of non-military individuals (e.g., visitors to the Emir and Crown Prince, as well as delegations and government ministers), and therefore a strong need for training to ensure ICT competency to manage the integration between the departments and security systems.

***Objective 3: To understand the interactions of the managerial activities carried out by the Kuwaiti Amiri Guard through the case study***

It was found that the objects of MI as entities/individuals at the Kuwaiti Amiri Guard are linked with the subjects of MI as organisational practices and actions determining managerial activities for developing a culture to foster the adaptation to MI. Moreover, it was found that the organisational processes, systems, and mechanisms promoting the training, development, and motivation of individuals/entities at the Kuwaiti Amiri Guard are both practical and beneficial for adapting to MI within the activities of this organisation. There was recognition of the need for MI professionals/department to help formally and effectively address the deficiencies identified and expressed by the participants, and support from the head of the organisation to implement this.

***RQ2: How can ICTs enhance the MI in the Kuwaiti Amiri Guard?***

It was determined that the need for integrating the tools of MI is pertinent at the Kuwaiti Amiri Guard; however, the issues of non-inclusive decision-making and rigid organisational structure are currently restricting a smooth and immediate implementation. The interview responses identified that the integration of technological advances as tools of MI is of great necessity for information management such as for report generation, the data management of soldiers, the centralisation of data for simplified updating and editing, inter-soldier communication, the development of collaborative communication infrastructure between soldiers and higher-ranking officers, and ensuring durable and practical security management. The responses were further evaluated to identify the value of integrating the tools of MI such as RFID, the IoT, IoMT and MIS, whereby the respondents identified the most prevalent benefits attained from digitalised systems as the error-free handling of data, precise and accurate information management, increased control, replacing labour-intensive tasks to accommodate the shortage of human capital, and promoting increased organisational competency. The Amiri Guard Training School can facilitate development of the required talent and skills, while attracting talent into the organisation through promoting the development of MI competency, and consequently underscoring the organisation's commitment to the Kuwait Vision 2035.

***RQ3: To what extent does activity theory help in understanding the mechanisms of technology interplay in terms of enhancing military MI in the Kuwaiti Amiri Guard?***

For the practical adaption to technology advances as tools of MI, activity theory as a lens was deployed for evaluating the organisational activities in the Kuwaiti Amiri Guard. Activity theory mapped the understanding for implementing technology in the Kuwaiti Amiri Guard by evaluating the role of the subjects, objects, and tools of MI. Moreover, the observed outcomes of MI were discussed in reflection with the literature to identify the existing state of technology implementation and MI integration at the Kuwaiti Amiri Guard. The use of activity theory highlighted insufficient technological MI interaction at the Kuwaiti Amiri Guard, due to the non-inclusive decision-making, rigid organisational structure (in some departments), lack of MI talent, and limited investment in MI technologies. Nevertheless, the application of activity theory was successful in shining a light on the mechanisms of technology interplay in terms of identifying opportunities to enhance MI in the Kuwaiti Amiri Guard. Moreover, the Kuwaiti Amiri Guard Theoretical MI Framework was developed, which could be adapted for use by other military sectors in GCC states and regional countries with characteristics similar to those of Kuwait.

***Objective 4 – To explore how activity theory can be utilised to frame the mechanism of MI in the departments of the Kuwaiti Amiri Guard, and to understand the interaction of the administrative activities***

Activity theory enabled the evaluation of the role of the subjects, objects, and tools of MI at the Kuwaiti Amiri Guard, and extrapolating the outcomes of MI. This framed the understanding of implementing MI in the organisation by evaluating the organisational activities within the Kuwaiti Amiri Guard managers under the policies, procedures, and rules of administration (subjects of MI), followed by the individuals/entities of the Kuwaiti Amiri Guard (objects of MI) with the linked interaction of technology (tools of MI). By applying activity theory, the organisational structure of the Kuwaiti Amiri Guard was viewed in terms of the interaction of the administrative activities. To achieve this, the interview questions were designed to evaluate the interaction of the activities in the organisation with the subjects, objects, and tools of MI, which identified that deploying technological advances for the management of the various organisational activities is required.

Furthermore, it was observed that the integration of advanced technology as tools of MI is of great necessity for the optimal management of the Kuwaiti Amiri Guard and improving the capacity of the objects and subjects of MI. According to the interview responses, the findings were analysed with respect to the literature, where it was noted that the integration of MI within an organisational structure is considered profitable, efficient, and beneficial due to the reduced complexity of manual tasks, intelligent deployment of organisational resources, enhanced competitive advantage, reduced cost, added differentiation and diversification, and movement towards organisational success.

***Objective 5 – To evaluate the Kuwaiti Amiri Guard Theoretical MI Framework in terms of the pillars of MI and develop a roadmap to actualise MI activities in the Kuwaiti Amiri Guard departments***

A working model describing activity theory as a mechanism for embedding MI within the organisational context was presented. For this, the developed model of proposed theory was observed with a concrete reflection, resulting in an acceptable practical framework for identifying the implications in the Kuwaiti military sector, as well as the public sector since the Kuwaiti Amiri Guard belongs to the public-sector Ministry of Defence. Moreover, this framework was deemed to have the potential to be utilised by other military sectors in GCC states and regional countries with characteristics similar to Kuwait. The outcomes of the MI pillars were determined and presented in Figure 7.1, with the proposed theory rendered as an MI benchmark and roadmap in the form of a practical model for activity theory as a lens to achieve MI (see Table 7.1). The purpose of the roadmap is to understand the implementation of MI by providing an empirical resource for public-sector organisations seeking innovation adoption. Through the domains of management, leadership, technology, and environment, this study believes that the visual representation of the roadmap (see Figure 7.2) can be utilised to recognise the degree of complexity and assist in selecting the required measures for the actualisation of MI within the target organisation.

## 8.4 Internal and External Validation of the Kuwaiti Amiri Guard Theoretical MI Framework

In qualitative research, validity refers to how appropriate the data, the processes, and the tools are, and in terms of the validation stage whether the results and conclusions that emerge from the research are valid for the context and sample (Leung, 2015). Validation in

qualitative research represents the verification process regarding the research data and how they have been analysed and interpretated, which can be achieved through means such as the *triangulation* of more than one source of data to seek agreement or identify difference (Saunders *et al*., 2019), an *audit trail* of the processes and materials utilised (Creswell & Miller, 2000), or *member checking* through a review of the findings by the study participants (Robson & McCartan, 2016).

In terms of member checking, the validation procedure moves from the researcher to the study participants, with Lincoln and Guba (1985) describing member checks as a vital technique to establish credibility in the research, and which comprise of presenting the findings to the research participants so that they can either confirm or challenge the credibility of the research (Creswell & Miller, 2000). Then, Saunders *et al*. (2015) discussed the nature of internal validity, to remove the possibility of different interpretations or explanations for the study findings, and external validity that seeks the generalisability of the findings beyond the study context.

In this study, as a validation stage, the Kuwaiti Amiri Guard Theoretical MI Framework was presented to the case study organisation (i.e., the Kuwaiti Amiri Guard) as a form of internal member checking to validate the interpretations and protect these from the influence of researcher bias (Robson & McCartan, 2016), while also being presented externally to two additional military organisations in the Ministry of Defense in Kuwait—the Head Office of Budget Management, and the Budgeting Department of the Kuwait Airforce—in order to explore the framework's potential to be generalised externally (Yin, 2018) into military organisations within Kuwait, but outside the case study of focus in this research.

In all three validation cases, the same procedure was followed. First, contact was established between the researcher and an individual from each organisation, which was facilitated by the researcher's existing contacts within the military sector in Kuwait. Once contact was established, the nature of the developed framework and the objective of the validation process were explained, and participation was agreed. Then, the researcher emailed a copy of the framework with supporting commentary. After that, and due to the ongoing Covid-19 restrictions, initial telephone meetings were arranged with each representative from the three organisations. All of the validation meetings were held in March 2022. In the first meeting, the researcher explained the framework's components, relationships, and

interactions, and asked the representatives to review the framework in their own time and consider its applicability to their respective organisation. After approximately one week, during which emails were exchanged to respond to any additional queries, follow-up telephone meetings were then conducted where the representatives' responses were gathered and recorded in note form.

This section thus presents the evaluation and feedback received from these three organisations' representatives regarding the framework developed by this research.

### *8.4.1 Internal Validation: The Kuwaiti Amiri Guard*

The researcher presented the framework to the Head of the Branch of Operations and Training at the Kuwaiti Amiri Guard, who evaluated the MI pillars, their content, and outcomes; the outcomes of MI; and the significance of the interaction between the MI pillars. This organisational feedback included three examples that demonstrate the applicability of the framework.

The first example involved the Kuwaiti Amiri Guard's protection duties, where the Protection Team manages, protects, and controls the transportation of presidents, VVIP visitors, and delegations, which requires effective communication between the headquarters, the Amiri Palaces, the airport, and the destination points. The Protection Team are responsible for updating the headquarters and the destination regarding the expected time of arrival and any incidents that occur on route. The Protection Team previously shared such updates between the headquarters and the destination through a portable radio station installed in one of the convoy vehicles. However, these real-time updates did not always occur due to the Protection Team's focus on controlling and protecting the convoy. Therefore, the Kuwaiti Amiri Guard has equipped the convoy vehicles with internal/external cameras and tracking devices that are accessible from the main control room in the headquarters, thus applying a similar approach to that of Karanasios and Allen (2013) who demonstrated the potential of the activity perspective to explore the use of ICTs to develop the tools employed to facilitate the activity, the motivation for the activity, and the stakeholders involved. This MI implementation has enabled the Protection Team to focus on its main control and protect responsibilities, as the control room in the headquarters now tracks the convoys, suggests route updates based on the current traffic situation, and provides advanced information regarding the destination point. Moreover, the innovation underscores Vygotsky's assertion of

the human tendency to create and use artefacts for the transformation of their environment (O'Conner, 2015). This MI implementation by the Kuwaiti Amiri Guard was mapped successfully with the presented MI Framework by considering the MI pillars, the outcomes of each pillar, and the outcome of MI, whereby the system of managing the convoy was developed by adopting a positive perception of innovation (Subjects of MI; Arundel *et al.*, 2019) and introducing technology by installing internal/external cameras and a tracking system on the convoy vehicles for improved communication and control (Tools of MI; Bistron & Piotrowski, 2021) that increased the Protection Team's performance while fulfilling their duties (Objects of MI; Fonseca *et al.*, 2019). Furthermore, the interactions of these pillars have reduced uncertainty and risk by providing the Kuwaiti Amiri Guard with superior command and control capabilities (Outcomes of MI; Harvard Business Review, 2006), echoing Zamri *et al.*'s (2013) assertion that MI represents an enabler for a transition to more efficient and effective processes.

The second example involved the Kuwaiti Amiri Guard's inspection duties and the introduction of advanced technology for inspection practices, compared with the previous manual inspection of vehicles entering the Royal Palaces. Through the use of 'TeleRadio', a Comprehensive Vehicle Screening System (CVSS), soldiers are now able to more-effectively inspect for threats such as explosives, weapons, or suspicious objects inside or under vehicles. There are parallels here with Karasavvidis's (2009) study exploring technology's potential to assist teachers in their regular practice, where activity theory was able to identify issues in terms of the object of the activity (i.e., the inspection of vehicles entering a controlled zone), the means of mediation (i.e., manual inspection), and the proposed object (i.e., a technology-assisted screening system) that is more efficient and effective, thus representing the transformation process to generate a new outcome. This system has added new value for the checkpoints in the Amiri Palaces, where the soldiers can accurately inspect vehicles in 10–15 seconds, thus reducing the required effort, increasing the accuracy of the inspection, and enabling faster decision-making in the case of any identified threat to the Royal Palaces that are designated as high-value targets, therefore realising technologies' potential for improved speed of action as reported by Bistron and Piotrowski (2021), and the importance of creating networks of control, identification, and surveillance in military contexts (Zhang *et al.*, 2012).

The third example involved the Kuwaiti Amiri Guard's restricted airspace, and a threat to a guest who was arriving at the airport while an unauthorised drone was flying over the Amiri Palaces, the guest's final destination and a restricted area. Due to the swift communication from the soldier who noticed the drone, his team leader delayed the convoy at the airport and requested that the hospitality ceremony be moved to the Amiri airport hall, with protection increased until the drone issue had been resolved. It was found that a drone operator had been contracted by the media to take photographs, but had not informed the Kuwaiti Amiri Guard or requested permission. During a subsequent meeting, the Kuwaiti Amiri Guard Anti-Drone Committee invited the drone operator to explain how he was able to fly the drone in a restricted area. The operator reported that he had used advanced settings and changed the radio frequencies, and provided a training session on how this could be achieved to break through into the restricted area. The Kuwaiti Amiri Guard thus took advantage of an opportunity to engage in ICT training (APSC, 2016) from this young drone operator who had high technological and innovation capability, and to deviate from the normal routines (Bunn, 2015). This approach shares similarity to the open innovation described by Veer *et al*. (2012) whereby collaboration occurred with external stakeholders, in this case a media-contracted drone operator in order to develop solutions to the operating of unmanned airborne vehicles within a restricted area. Furthermore, there is a transformation component that demonstrates how activity theory can be employed for the analysis of complex human activities within a social system context (Dennehy & Conboy, 2017), as well as highlighting the importance of recruiting young people due their elevated technological skills (Jamieson, 2017).

In summary, the Head of the Branch of Operations and Training at the Kuwaiti Amiri Guard concluded the feedback by asserting the relevance and potential of the framework as a valuable resource that visually highlights the MI pillars, the outcomes of each pillar, and the MI outcomes that result from the transformation (Karanasios & Allen, 2013), thus underscoring the relevance of working through this process to enhance MI implementation in the target organisation.

### *8.4.2 External Validation I: The Head Office of Budget Management*

The framework was also presented to the Head of Budget Management in the Kuwaiti Ministry of Defense to seek external feedback. Focus was placed on the significance of the

MI pillars, and in particular the system of management and the mechanism that generates the environment of MI (Subjects), echoing what Arundel *et al*. (2019) referred to as the *transformative policies* that lead to significant results or innovation. The feedback included that individuals (Objects) will be limited to innovate if the system and mechanism of management does not offer support through providing an innovative environment, with Björk *et al*. (2010) highlighting the role of human resources management as an enabler for objects of MI, or if the technology (Tools) is not suitable or conflicts with the management/individuals, since such tools serve to enhance and develop the activities through which subjects and objects interplay (Shang *et al*., 2018). The feedback asserted that there is rigidity in the field, and thus the first requirement is to provide a positive perception of innovation to the management, and to conduct careful analysis to determine the optimum system for implementation. This assessment agrees with Burbidge and Webster's (2019) findings of much less innovation manifesting in public-sector organisations due to their reduced agility and available resources, as well as the findings from the current study of innovation constraints due to time pressures, the interactivity of human resources, and the technical capability. As the main role of the Head Office of Budget Management is providing financial consultation and expenditure recommendation to Kuwaiti Army units, an intention was expressed to improve the communication technology between the financial department and the military units to elevate the accuracy and the speed of decision-making, with *Kim et al*. (2016) reporting the ability for ICTs to result in enhanced MI through the novel human behaviours and decision-making approaches that tend to arise.

In summary, the Head of Budget Management saw potential in the framework, reporting that the visual presentation could facilitate improvements in the organisation by highlighting the MI pillars and opportunities for MI implementation. However, the feedback also highlighted the need to introduce positive examples of MI implementation to help overcome any resistance to change (Hussinger & Pacher, 2019), which is an important component for consideration in future improvements to the framework to ensure the successful implementation of MI, and perhaps could be achieved through a series of case-study examples that could demonstrate a number of real-life applications of the framework and the resulting outcomes.

### *8.4.3 External Validation II: The Budgeting Department of the Kuwait Airforce*

In his evaluation of the framework, the Head of the Budgeting Department of the Kuwaiti Airforce considered the MI pillars in terms of management. Despite the primary role of this department being to prepare the annual budgets for the Airforce units, this work is still conducted manually, thus failing to realise the MI potentials of cost reduction, improved efficiencies, and the more effective use of labour (Harvard Business Review, 2006). After exploring the MI pillars in the framework, the Head of the Budgeting Department acknowledged that the management approach (Subject) is still classical (Abdul *et al*., 2018; Burgess *et al*., 2005; Damanpour & Aravind, 2012), with the need to innovate through the introduction of digital technologies (Tools) since mistakes are re-occurring. This identified issue highlights the scope for collaboration with the private sector to promote, facilitate, and incentivise innovative developments and processes, as reported by Modara *et al*. (2020) in the case of Bahrain's public sector, although clearly any threat associated with the leakage of confidential information would need to be addressed (Nunes & Abreu, 2020). The need for education, skills development, and collaboration was mentioned to help introduce the technology and ease the personnel's (Objects) transition into digital workflows, thus echoing the point raised by the Head of Budget Management, through the implementation of an appropriate financial system as opposed to completing the records manually, with recognition that the Ministry of Finance and other financial authorities in Kuwait are more developed than the Budgeting Department in the military, and offering a valuable opportunity to objectively reflect on the department's current status and requirement for MI. Moreover, with the Minister of Defense and Deputy Prime Minister of Kuwait asserting the need for the Kuwaiti Army to conduct ongoing training and development (Kuwaiti News Agency, 2021), this could reasonably extend to the administrative departments that support such operations.

Therefore, appraising the MI framework in the case of the Budgeting Department of the Kuwaiti Airforce enabled the organisation to reflect on the current manual processes, and the need for training and the introduction of technology to achieve improved efficiency and accuracy, as found in the current study's investigation into the Kuwaiti Amiri Guard. This underscores the framework's ability to promote objective analysis of the organisation's current state, and to identify where improvements can be made through the implementation of MI.

## 8.5 Research Contribution

The process of research includes expanding the conventional approach of designing and developing a research methodology, conducting the data analysis process and producing insightful conclusions from the undertaken research process. In terms of justifying the requisite of originality, the researcher believes that the current study fulfils these criteria, whereby the overall achievement of this study has resulted in contributions to the theoretical and methodology domains. Sections 8.5.1 and 8.5.2 below describe this study's theoretical and methodological contributions.

### *8.5.1 Theoretical Contribution*

- **The Framework for Activity Theory as a Lens for MI Activities in the Kuwaiti Amiri Guard**

As the first theoretical contribution, this study generated a framework to help comprehend how activity theory can be applied so that the implementation of MI can be recognised. Through reflection on the developed themes, each theme identified the respective MI component in terms of activity theory as a lens, echoing the assertions of Allen and Karanasios (2011), Jussila *et al*. (2019), and Karanasios and Allen (2013) in terms of activity theory's potential to help understand the management of innovation in public institutions. To determine the outcomes and relationships of the activity system, the Framework for Activity Theory as a Lens for MI Activities in the Kuwaiti Amiri Guard (see Figure 6.2, and repeated below in Figure 8.1) was created that enabled the MI parameters to be formed from the literature, and for activity theory to be utilised to develop the conceptual framework (Karanasios & Allen, 2013) for the case study, with semi-structured interviews used to collect qualitative data (Dudovskiy, 2019) through which the emerging themes and categories were identified, and from which the MI outcomes (Hamel, 2006) resulted.

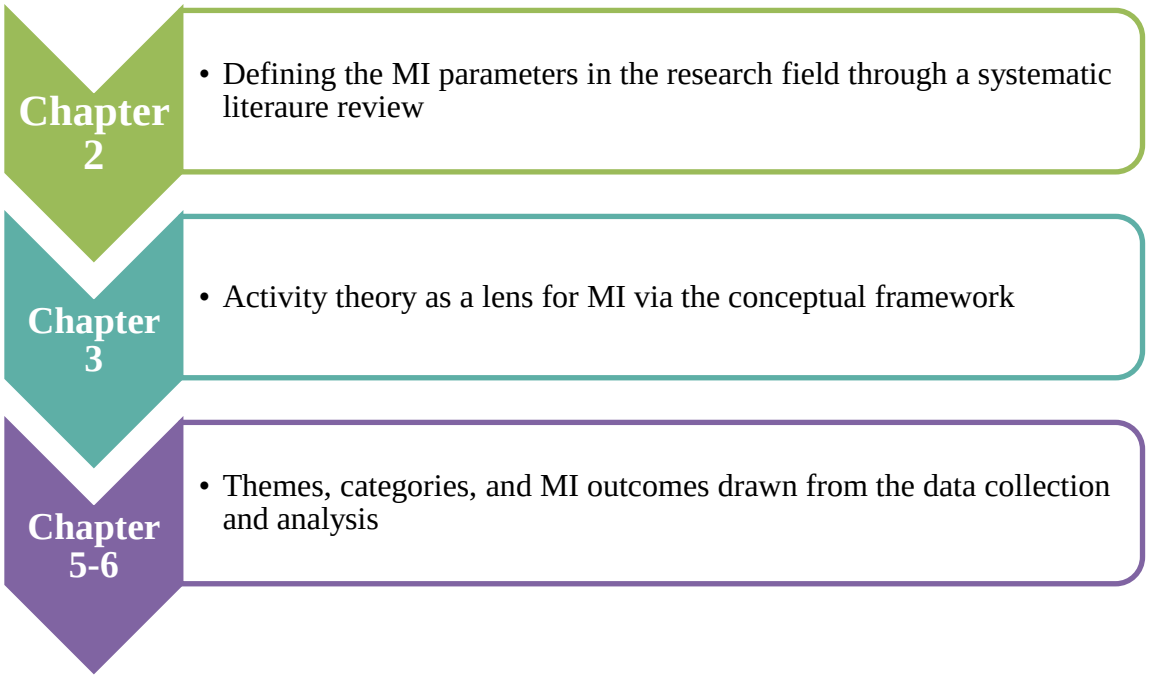



**Figure 8.1: Framework for Activity Theory as a Lens for the Kuwaiti Amiri Guard**

- **The Kuwaiti Amiri Guard Theoretical MI Framework**

As the second theoretical contribution, this research contributes to the paucity of literature on the area of MI in the military field (National Academy of Sciences, 2014) in general, and specifically in light of the importance of innovation as a driver to help Kuwait transition into a post-oil economy as per the Kuwait Vision 2035 (Isik, 2018; Mahdi, 2018), through the development of the Kuwaiti Amiri Guard Theoretical MI Framework (as presented in Figure 6.4, and repeated below in Figure 8.2), informed by grounded theory and activity theory.

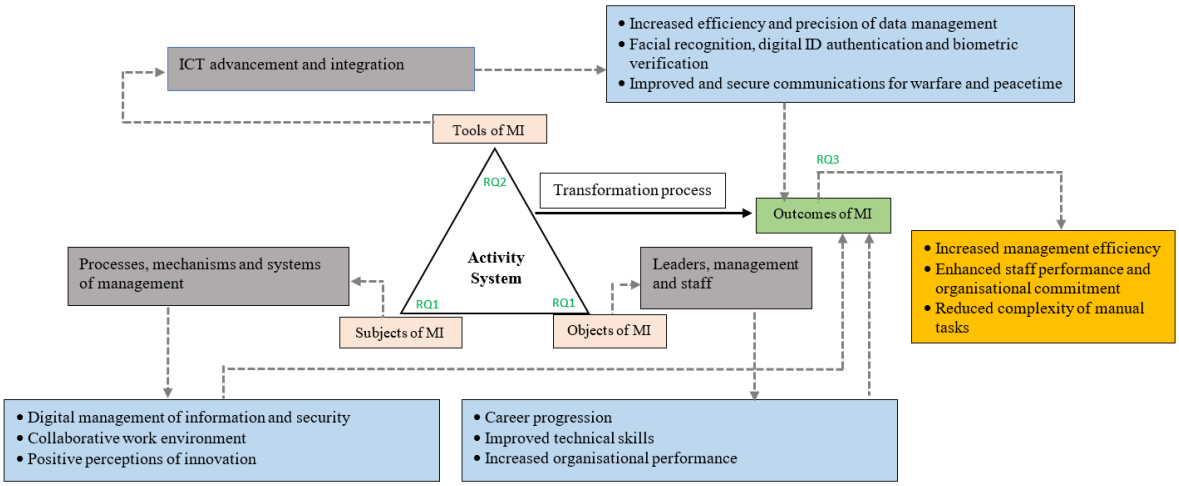



**Figure 8.2: The Kuwaiti Amiri Guard Theoretical MI Framework**

The developed framework will enable organisations to assess their use and potential of MI through analysis of the organisational subjects of MI (i.e., processes, mechanisms, and systems of management), objects of MI (i.e., leaders, management, and staff) and tools of MI (i.e., ICT advancement and integration) to facilitate the transformation process and the resulting benefits of information accuracy (Ministry of Defence, 2020), cost-savings (UN, 2017), efficiencies (Howard, 2015), improved collaboration (Modara *et al*., 2020), and increased performance (Gotarane & Raskar, 2019). This echoes Karanasios and Allen's (2013) Chernobyl-focused study where activity theory was employed to better understand the subjects' motivation for the activity, the objects (stakeholders) involved, and the ICT tools used to facilitate the activity. Moreover, the Kuwaiti Amiri Guard Theoretical MI Framework enables military organisations to more clearly visualise the relationships that exist between the connected organisational activities (Karanasios & Allen, 2018), and through the highlighting and categorisation of those MI practices that are shaped in the activity system, the framework can also be employed as a benchmark more generally since the military domain is nested within the public sector that is suited to the investigation of MI through activity theory (Allen & Karanasios, 2011; Jussila *et al*., 2019; Karanasios & Allen, 2013). Therefore, this study proposes that the Kuwaiti Amiri Guard Theoretical MI Framework could also be utilised in public-sector organisations sharing similar characteristics to the Kuwaiti Amiri Guard, to enable such organisations to examine their use and potential of MI to enhance their organisational policies, human capital, and the tools of MI for the purposes of optimising their organisational processes and functions (Zamri *et al*., 2013).

Through their regional proximity and similar demographics, the framework offers organisations in the military sector in the GCC countries, as well as other nations further afield with similar characteristics to Kuwait, the scope to utilise the developed framework to evaluate the MI usage and potential in their military organisations to ensure increased connectivity (Saritas & Burmaoglu, 2017) and asymmetrical advantages against adversaries (Bendett *et al*., 2021). These characteristics involve those states attempting to transition away from a dependence on oil through the development of their private sector, and implementing efficiency improvements to their public sector, thus helping to avoid budget shortfalls such as the predicted $75–80 million shortfall in 2022–2023 in the case of Kuwait (DiChristopher, 2018). The Kuwaiti Amiri Guard Theoretical MI Framework provides an opportunity for such military organisations to conduct an in-depth analysis of the existing MI pillars and to identify where improvements may be achieved through the transformation process to develop the full potential of MI through the subjects, comprising the processes, mechanisms, and systems of organisational management (Binz & Truffer, 2017); the objects, comprising the leaders, managers, unit leaders, and staff (Bhimani *et al*., 2018); and the tools of MI, comprising ICT (Saritas & Burmaoglu, 2017), the IoT (Tortonesi *et al*., 2016), the IoMT (Gotarane & Raskar, 2019) and MIS (Gondalia *et al*., 2018). This will help to respond to Sertin's (2019) call for commitment towards the managing of innovation narratives and to shift perceptions of abundance in favour of Kuwait's inevitable transition to a non-oil economy.

The researcher of this study had open access to the Kuwaiti Amiri Guard, offering a valuable opportunity to gain insight into a military organisation in the Gulf region in general, and in Kuwait in particular. The entire process of this research has thus provided a significant contribution towards understanding the need for innovation in the military sector of Kuwait, as well as exploring the current context of the Kuwaiti Amiri Guard's implementation of MI with respect to the organisational activities and its potential as a public-sector organisation to reorganise, restructure, and facilitate skills, knowledge, and funds (AME Data, 2019), while addressing the considerable bureaucratic obstacles that prevail (Department of State, n.d.). In summary, the contribution to knowledge made by this study through the Kuwaiti Amiri Guard Theoretical MI Framework will enable military and public-sector organisations with proximity and similarity to the case study setting to create benefits for the organisation through meeting Hamel's (2006) MI criteria of challenging the notion of management with

novel approaches through innovation that is both dynamic and systematic, while ensuring a programme of innovative development that increases over time.

- **Roadmap for Activity Theory as a Lens to Achieve MI**

As the third theoretical contribution, this research developed a Roadmap for Activity Theory as a Lens to Achieve MI (see Figure 7.2, and repeated below in Figure 8.3), to extend beyond the narrow approach of military operations and tactical planning, and to embrace the managerial thinking behind the overall military administration in the Kuwaiti context. The roadmap was developed based on the activity system, whereby activity theory was deployed to enable a conceptual examination of the organisational activities in the Kuwaiti Amiri Guard (Allen & Karanasios, 2011; Jussila *et al*., 2019; Karanasios & Allen, 2013). While considering the developed roadmap in view of the activity system, further reflection expanded the contributing dimension of this research. For example, the researcher theorised the relationships between the MI subject (Arundel *et al*., 2019) and the MI object (Björk *et al*., 2010) that resulted in the innovative outcomes to the activity system, while determining that such an activity system is not yet embedded theoretically or documented in the managerial setting in the organisation, thus underscoring the potential for future development and use. With the developed roadmap, an insightful understanding of the MI phenomenon (Damanpour & Aravind, 2012) can be obtained, while the organisational setting in terms of its managed activities can be viewed under the implementation of MI (Lin *et al*., 2017). Moreover, the determining aspects of the subjects of MI, objects of MI, and tools of MI can offer opportunities to explore the organisational activities related to the individuals who perform them (objects of MI); the policies, rules, and regulations that are prerequisite for performing the relevant organisational activities (subjects of MI); and the technology tools or solutions that are required to be deployed for facilitating the successful execution of the organisational activities (tools of MI). This will thus respond to the call for the narrative of innovation to be crafted at the governmental level in order to engage the Kuwaiti society in entrepreneurial, technological, and innovation activities based on systematic exchange and synergy amongst the various elements of innovation (Kim *et al*., 2016), while offering other regional organisations the ability to embrace innovation as a mechanism to unlock the shift towards a non-oil-based economy (Sertin, 2019). Moreover, the roadmap includes the outcomes of MI that are expected to be attained following successful implementation under the relational role

of the subjects, objects, and tools of MI. Therefore, the developed roadmap provides a delineated approach for implementing MI in military and public-sector organisations.

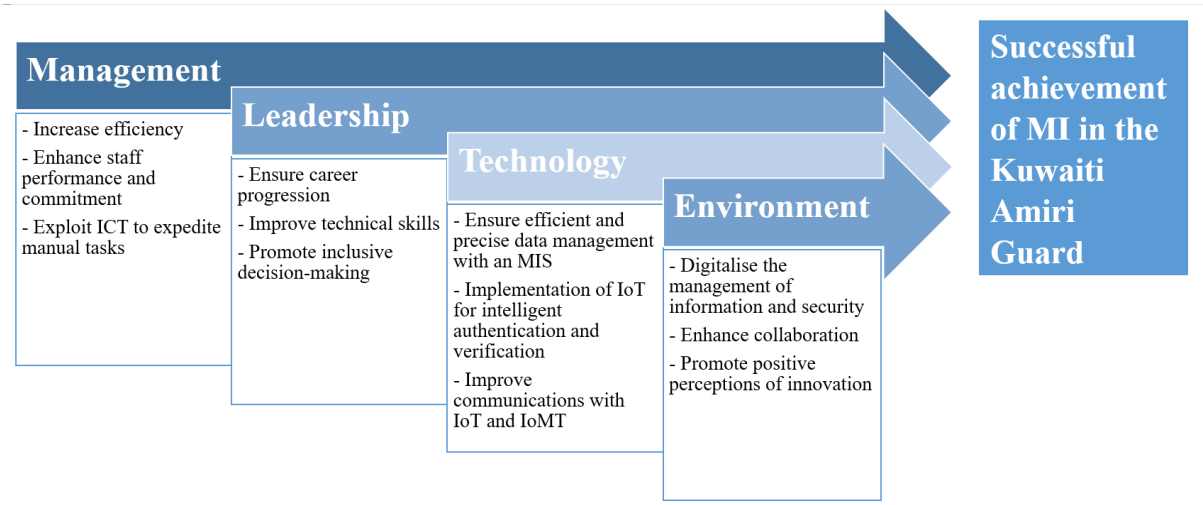



**Figure 8.3: Roadmap for Activity Theory as a Lens to Achieve MI**

### *8.5.2 Methodological Contribution*

- **The Research Methodology**

As the first methodological contribution, the research methodology (as presented in Figure 4.3, and repeated below in Figure 8.4) was developed and applied to investigate a military context in a GCC country, namely the Kuwaiti Amiri Guard in Kuwait. This represents a significant methodological contribution to the military domain, enabling the case study investigation of a military organisation that resulted in the Kuwaiti Amiri Guard Theoretical MI Framework. This framework (as presented in Figure 6.4, and repeated above in Figure 8.2), informed by activity theory, can guide researchers by enabling the investigation, the extraction, and the understanding of the concepts of MI in the target organisation, as well as offering clarification through visualising the relationships between the connected activities after the highlighting and categorisation of those MI practices that are shaped in the activity system.

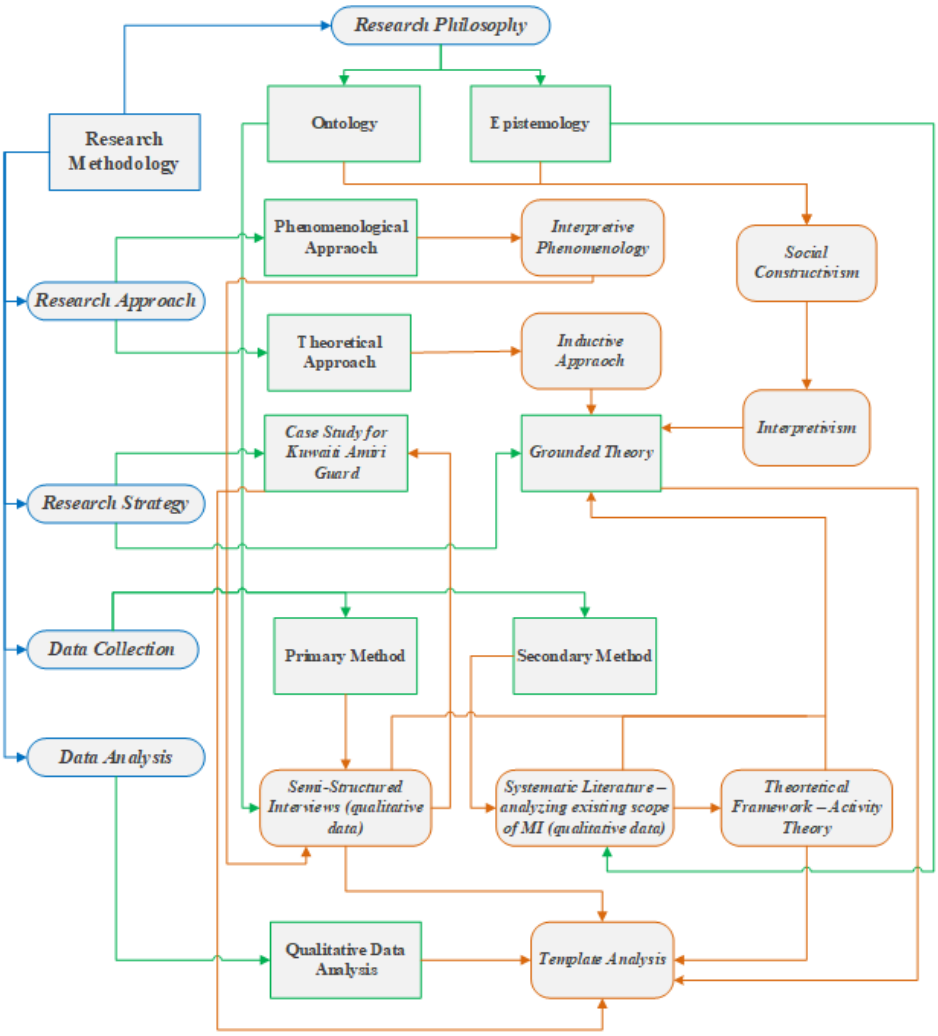



**Figure 8.4: The Research Methodology**

- **The Data Collection Approach in a Military Context**

As the second methodological contribution, this research employed a specific data collection approach during the face-to-face semi-structured interviews in this sensitive military context. As described in section 4.3.5.1, the researcher took detailed notes and shorthand notes of the participants' responses, which were then read back to the participant at the end of the interview. The participants were also offered the opportunity to record their own written responses during the interview, to support the data collection and ensure accuracy through this respondent validation process. Finally, follow-up online and telephone meetings were held to validate the study outcomes by sharing the findings with the senior management from the Kuwaiti Amiri Guard. This data collection approach offered the

officers of this military organisation the opportunity to participate in the research and express their views on the target phenomenon through a process that protected them and the organisation, while enabling the collection of accurate and insightful data. Therefore, the data collection approach employed in this study during the in-person interviews and final validation of the findings with the senior management in the organisation, and other organisations within the Kuwaiti Ministry of Defense, could be replicated for investigations in other military settings, as well as other organisations that involve sensitive operations in GCC and regional countries with characteristics similar to those of Kuwait.

- **The Case Study Coding Approach**

As the third methodological contribution, in terms of the data collection and analysis this study utilised the strengths of case study, semi-structured interviews, template analysis and grounded theory, whereby the interview data generated from the case study were analysed through template analysis and grounded theory via the case study coding approach, thus facilitating the development of categories that resulted in the Kuwaiti Amiri Guard Theoretical MI Framework. The case study coding approach described and conducted in chapters 4 and 5 offers a coding approach applicable for case study investigations in other military settings in GCC countries, as well as private-sector organisations more generally.

- **Activity Theory as a Lens for MI Activities in a Military Organisation**

As the fourth methodological contribution, this research employed activity theory as a lens to provide enhanced understanding and to clarify the relationship complexity between the managerial activities in a military organisation. Since such activities pass through interactions of processes to arrive at the MI value-adding outcomes (transformation process), activity theory can thus formulate the lifecycle of each activity through visual representation to augment understanding of the interrelations during activity processes that encourage MI. In terms of the setting, the researcher believes that the same methodological approach could also be applied, and be of significant value, to the military sectors of other GCC countries with similar characteristics, thus enabling such organisations to evaluate their implementation of MI and identify opportunities for improvement to support the regional shift towards knowledge-based and innovative economies with reduced reliance on fossil fuel extraction and a more efficient public sector.

## 8.6 Managerial Implications/Recommendations

This study presented activity theory as a lens for MI activities in the Kuwaiti Amiri Guard, which can be generalised for other public-sector military organisation in GCC states, as well as regional countries with characteristics similar to those of Kuwait (i.e., nations transitioning from the overreliance on oil revenues through developing their private sector and improving their public-sector efficiencies).

The observed interaction of MI subjects, objects, and tools identified certain behaviours and practices of administrative rules for members/departments to establish a systemic interaction or a system. These interactions in the form of an organisational community lead to transformational innovative processes for the achievement of the overall outcomes by realising the goals. This underscores the need to integrate MI within the organisational processes, rules, and procedures, along with the deployment of technology tools for affirming a progressive confinement of organisational activities within the context of any public-sector organisation, such as that observed for the Kuwaiti Amiri Guard.

This study encourages the leadership and decision-makers of the Kuwaiti Amiri Guard to consider the findings emerging from this empirical study and utilise the potential these offer to shine a light on the scope to enhance MI implementation within the organisation. The researcher recommends that the organisation develops a dedicated department for MI, or as an alternative to create a space for MI professionals to provide guidance to the organisation on how the study findings can be realised into concrete improvements within the Kuwaiti Amiri Guard. Then, in-house and external MI training should be conducted via the Amiri Guard Training School to develop talent from within the organisation, while encouraging talented individuals to join the Kuwaiti Amiri Guard due to its positive MI approach. Furthermore, efforts should be made to encourage inclusive decision-making to support the successful establishment of MI. This research encourages a shift in the organisational MI practice towards greater directed and undirected innovation, which will lead to an organisational structure grounded in innovative practice whereby members can benefit from their innovative inputs. The creation of an MIS was found to be a vital tool necessary to realise the benefits of increased data management efficiency and accuracy, leading to reduced personnel pressures that are currently required to fulfil repetitive tasks. Moreover, consideration should be given to the introduction of ICT, the IoT and the

IoMT such as RFID, facial recognition, access-control systems, and biometric verification to further streamline manual operations and improve the organisation's utilisation of MI tools.

The leadership and key decision-makers of the Kuwaiti Amiri Guard are encouraged to review the Kuwaiti Amiri Guard Theoretical MI Framework and the Roadmap for Activity Theory as a Lens to Achieve MI presented in Figure 6.4 and Figure 7.2, respectively, and consider the implementation of the recommended management, leadership, technology, and environment measures to fully utilise the potential for MI that could support MI within this military organisation.

### 8.7 Limitations of the Research

A key limitation of the current study is the background of an unfolding global pandemic, Covid-19. This affected the research in a number of ways. The data validation was impacted as in-person validation interviews required the national protocols in be place to prevent viral transmission (i.e., face masks, social distancing, and interviewing in a well-ventilated space). As Saunders *et al*. (2016) explained, despite being typically conducted in person (face to face), circumstances may result in the need to conduct interviews over the internet or by telephone, while Robson and McCartan (2016) cautioned that the logistics involved in face-to-face interviews lead to increased costs and time incurred. Therefore, it was decided to gather the validation feedback through presenting the research findings to the three military organisations via online and telephone meetings.

An additional Covid-19-related disruption was that during his research the researcher and his family were evacuated and returned to Kuwait by military airplane, along with other Kuwaiti nationals based in the UK. This impacted on his ability to remain focused on the study due to concerns over his family's health and well-being, the disruption caused by the need to relocate his home and study environment in the midst of the research process, and broader concerns over the impact of the pandemic on professional and academic life, as well as his ability to complete the research.

A further limitation of this study was the need to deal with a highly bureaucratic and military organisation, the Kuwaiti Amiri Guard. This was underscored by the need for the researcher to seek permission from the Head of the Kuwaiti Amiri Guard to access all the units of the organisation, while individual permission also needed to be acquired from the

same gatekeeper to authorise the interviews with each of the 25 case study participants. Easterby-Smith *et al*. (2015) cautioned that even after gaining access, cooperation and trust must be gained; however, micro-issues such as inter-employee relationships, and macro-issues involving the politics of the organisation can further complicate the development of cooperation and trust.

With the case study involving the collection and analysis of qualitative data only, this represents an additional limitation of the research. Since interviewees may have their own motives, such as attempting to impress the interviewer or to advance their own agenda, the collection of data through different methods (e.g., quantitative) and different sources (e.g., observation) could have helped to reduce any bias through the application of data triangulation (Miles *et al*., 2014), although Easterby-Smith *et al*. (2015) pointed out that when conducted effectively, qualitative research is both thorough and systematic.

### 8.8 Future Work

This research provides future direction for testing and verifying the developed framework to ascertain its independency and address the limitations of this research. An interesting point to arise from the external validation (see section 8.4) was the need to demonstrate positive examples of MI implementation to help overcome any resistance to change from the organisational objects. Therefore, the theoretical framework could be modified to include a stage of 'MI promotion', where examples are presented to the affected organisational members that specifically highlight how their workflows and outputs would be improved by the proposed MI implementation.

Observational study could be conducted within the Kuwaiti Amiri Guard to observe MI action and opportunities within the daily operations of the organisation, while focus groups could be conducted to enable a broader space for consideration of the scope and challenges of MI implementation in the Kuwaiti Amiri Guard. Then, quantitative data could be collected from a larger sample, to assess the scope for more bottom-up innovation from outside the top senior management, middle management, and operational level management domains.

If the leaders and decision-makers take action based on the findings emerging from this study, such as the utilisation of the roadmap, then further research could assess the

strength and viability of this resource through a follow-up case study. There is also scope to apply the framework developed in this study to other military organisations with similar characteristics (e.g., the Kuwaiti Ministry of Defense's Head Office of Budget Management and the Budgeting Department of the Kuwait Airforce), as well as assessing the viability of the framework in public-sector organisations more generally, as a comparative study.

## 8.9 Conclusion

In this study, the exploration of MI was concluded by highlighting the main elements of MI that were extracted from the conceptual framework, with this contributing through an empirical case study in the context of the Kuwaiti Amiri Guard. In terms of the development of theory, the conceptualisation of the study framework has yielded important insight through activity theory applied as a lens for MI activities in the Kuwaiti Amiri Guard. Such investigation highlighted the relationships and the interactions between the rules, the norms, the strategies, and the procedures, as well as the capacities of the stakeholders in the organisation. Meanwhile, the technology was found to represent a tool that mediated the connected interaction between the activities to facilitate the roles and allocation of each respective activity.

The analysis enabled the researcher to comprehend the mechanisms of MI innovation in the research context, namely the Kuwaiti Amiri Guard. By following the established roadmap through extracting those MI concepts that assisted in the development of a theoretical MI framework, this facilitated in acquiring responses to the research questions that supported achieving the research aim. Moreover, the analysis encouraged the researcher to conceptualise the interaction between the human element (MI object) and the rules, the strategies, and the procedures (MI subject), representing this interaction by the inclusion of an organisational community element (military) in the research context. In addition, the analysis has highlighted the current role and potential of ICT in terms of enhancing MI in the Kuwaiti Amiri Guard, which contributed to this study's ability to conceptualise the research framework by extracting and adding novel MI elements that led to enhanced understanding of the MI activity system in the Kuwaiti Amiri Guard, while offering potential for similar organisations in the region, as well as public-sector organisations more generally, to benefit from this study's application of activity theory as a lens for MI.

To conclude, this case study has successfully investigated the Kuwaiti Amiri Guard through activity theory applied as a lens for MI activities, offering valuable insight into the MI implementation and potential in this public-sector military organisation, while presenting opportunities for future research in the study setting, as well as the application of the developed framework in similar military contexts in the region. It is hoped that this study can provide methodological and theoretical resources for researchers in the field of MI, as well as a template for those seeking to explore MI in similar contexts, particularly as the GCC countries seek to diversify their economies and shift away from an overreliance on oil revenues and to achieve a more moderately sized and efficient public sector.

# Appendices

## Appendix I: Interview Schedule

Q1. What do you know about managerial innovation? What is your concept of innovation and management creativity?

Q2. To what extent does the Kuwaiti Amiri Guard administration contribute to the development of managerial innovation? How?

Q3. What are your suggestions to support managerial innovation in the Kuwaiti Amiri Guard management, considering the norms, policies, rules, and strategies?

Q4. What are the plans to develop and activate these suggestions?

Q5. What are the necessary tools and resources that would help to implement and activate these plans?

Q6. Who are the entities/companies/individuals/parties expected to participate/implement these plans? Who are the persons or entities influencing the development and activation of the managerial innovation policies in the Kuwaiti Amiri Guard?

Q7. What are the units, sectors/administrations nominated or targeted in the inclusion and activation of creativity and managerial innovation? What is the role of the remaining units/administrations in achieving managerial innovation in their units or in other units?

Q8. What are the routine activities in the branch administration?

Q9. What is taken into consideration when establishing and distributing the activities/tasks?

Q10. What about the considerations of authority (validity), priority, and complexity that could already be embedded in the administrative system at the branch/administration?

Q11. What are some examples or cases in which you found it difficult to activate and include managerial innovation?

Q12. To what extent can information systems/ICTs enhance managerial innovation?

Q13. Is there an opportunity to benefit from innovation management in the private sector to apply this in the Kuwaiti Amiri Guard?

Q14. Is there any communication/correlation between administrations by technology? An integrated system?

Q15. Are there attempts to provide or develop a tool or system for communication between departments/employees?

*Q16. To what extent can the establishment/work of developing a special unit of innovation/managerial innovation consist of specialists under the management of the Head of the Kuwaiti Amiri Guard?

* This final question was only presented to, and responded by, the Head of the Kuwaiti Amiri Guard.

# Appendix II: Mapping of the Interview Questions

| Interview question | Objective | Research question | Conceptual framework domain |
|---|---|---|---|
| Q1 | #2 | RQ1 | Subjects |
| Q2 | #3 | RQ1 | Subjects |
| Q3 | #2 | RQ1 | Subjects |
| Q4 | #2 | RQ1 | Subjects |
| Q5 | #2 | RQ2 | Tools |
| Q6 | #2 | RQ2 | Objects |
| Q7 | #2 | RQ1 | Subjects |
| Q8 | #2 | RQ1 | Subjects |
| Q9 | #2 | RQ1 | Subjects |
| Q10 | #3 | RQ1 | Subjects |
| Q11 | #3 | RQ1 | Objects |
| Q12 | #3 | RQ2 | Tools |
| Q13 | #3 | RQ1 | Subjects |
| Q14 | #3 | RQ2 | Tools |
| Q15 | #3 | RQ2 | Tools |
| Q16 | #3 | RQ1 | Objects |

# Appendix III: Participant Invitation Letter

Salford Business School
University of Salford
Salford
M5 4WT
United Kingdom

**Participant Invitation Letter**

Dear Sir/Madam,

It is my pleasure to invite you to participate in my research for PhD study purposes. I am a Kuwaiti national and currently a PhD candidate studying at the University of Salford in the UK. The research explores managerial innovation in the Kuwaiti Amiri Guard. Your organisational insight is sought in order to help determine the parameters that will improve the current understanding of managerial innovation implementation and barriers to such implementation in the military and private-sector contexts.

Participation in this study will be completely voluntary, and will involve an interview lasting approximately one hour. Your written consent will be required, and you can withdraw from this study at any time without the need for any permission or reason. Moreover, the collected data will be stored securely, and will only be accessible to the researcher. No personal details or information will be included in the study without your prior consent, while your identity will be anonymised in the thesis. This study has received ethical approval from the University of Salford's Research, Innovation, and Academic Engagement Ethical Approval Panel (Application no. SBSR1920-06).

Thank you for considering your participation in this study. If you have any further questions, please feel free to contact me.

Best regards,

Abdulaziz Aldaremi

Email: a.aldaremi@edu.salford.ac.uk

# Appendix IV: Participant Consent Form

University of Salford

## Research Participant Consent Form

**Title of Project**: Activity Theory as a Lens for Managerial Innovation in the Kuwait Amiri Guard

**Ethics Ref No:** SBSR1920-06

**Name of Researcher:** Abdulaziz Aldaremi

| | | | |
|---|---|---|---|
| ➢ I confirm that I have read and understood the project information sheet titled and what my contribution will be. | **Yes** | **No** | |
| ➢ I have been given the opportunity to ask questions (face to face, via telephone or e-mail). | **Yes** | **No** | |
| ➢ I agree to take part in the interview. | **Yes** | **No** | **NA** |
| ➢ I agree to the interview being tape recorded. | **Yes** | **No** | **NA** |
| ➢ I understand that my participation is voluntary and that I can withdraw from the research at any time **without giving any reason.** | **Yes** | **No** | |
| ➢ I understand how the researcher will use my responses, who will see them and how the data will be stored. | **Yes** | **No** | |
| ➢ **I agree to take part in the above study** | **Yes** | **No** | |

Name of participant: ……

Signature: ……

Date: ……

**Name of researcher taking consent**: Abdulaziz Aldaremi

**Researcher's e-mail address**: a.aldaremi@edu.salford.ac.uk

College Ethical Approval Panel for Research Consent Form
Version 1 (15.07.13)

# Appendix V: Ethics Approval

University of Salford MANCHESTER

**Research, Innovation and Academic Engagement Ethical Approval Panel**

Doctoral & Research Support
Research and Knowledge Exchange,
Room 827, Maxwell Building
University of Salford
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15 January 2020

**Abdulaziz Aldaremi**

Dear Abdulaziz,

**RE: ETHICS APPLICATION SBSR1920-06: Activity theory as a lens for Managerial Innovation: A proposed systematic framework for managerial innovation activities in the Amiri Guard in Kuwait.**

Based on the information that you provided, I am pleased to inform you that your application SBSR1920-06 has been approved.

If there are any changes to the project and/or its methodology, then please inform the Panel as soon as possible by contacting SBS-ResearchEthics@salford.ac.uk.

Yours sincerely,

Professor David F. Percy
Chair of the Staff and Postgraduate Research Ethics Panel
Salford Business School

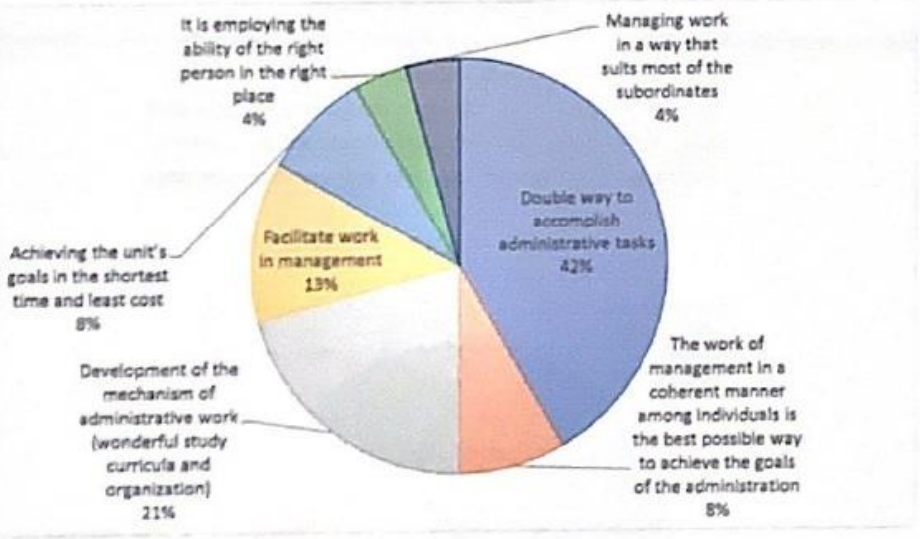
# Appendix VI: NVivo Coding Sample

**Do you know what managerial innovation is? What is your concept of innovation and management creativity?**

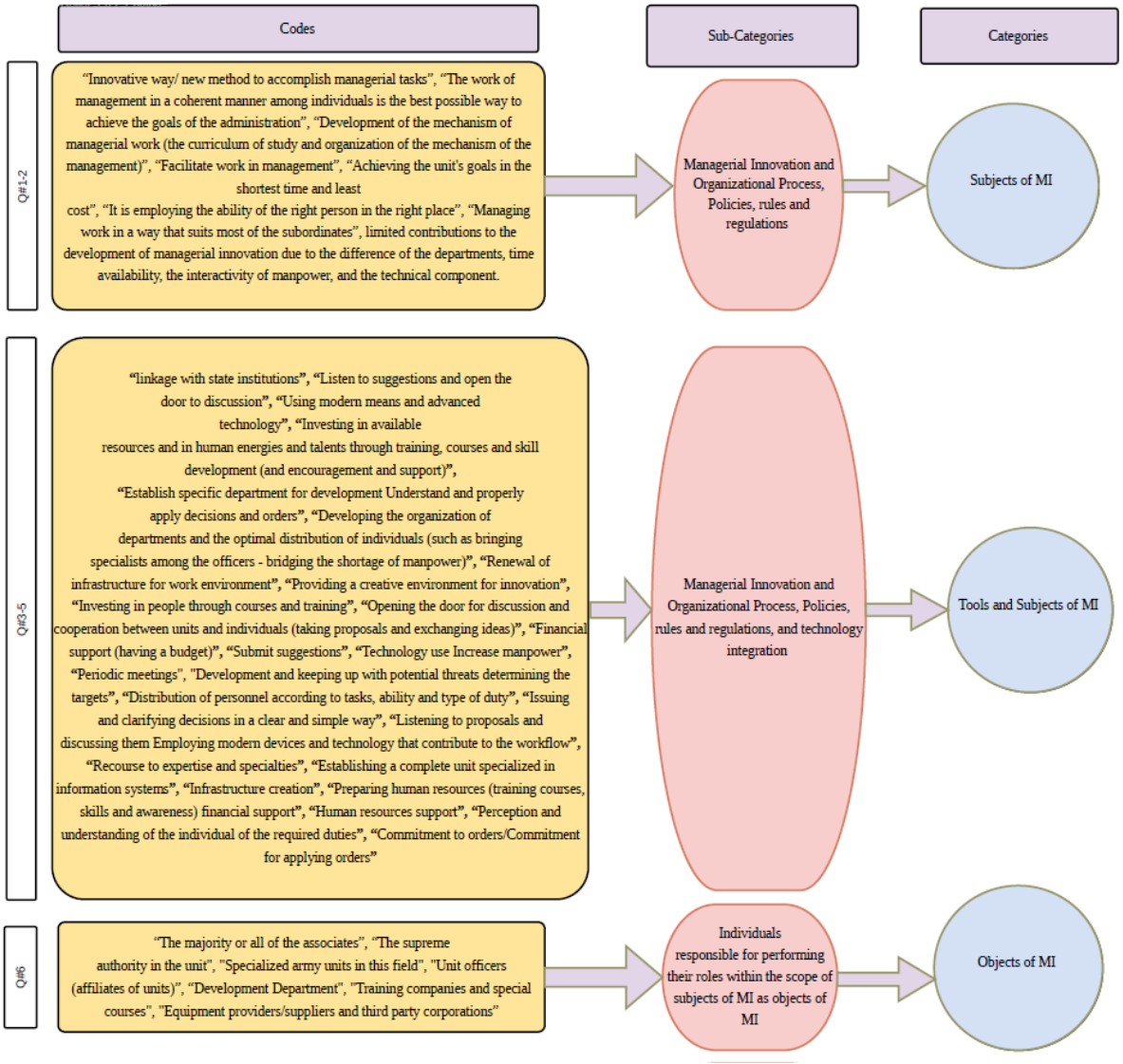
1. Is to create an innovative way to accomplish the required tasks by exchanging ideas and thinking in a way that is beyond the traditional scope according to previous leaders and administrations, and investing in and continuing to do so.
2. Is to find solutions that help facilitate work in general.
3. Developing a management work system. - Conveying a quality that keeps pace with modern development and the way of working.
4. From my point of view, management innovation is the process of managing the work of management in terms of facilitating and working consistent models for each potential task.
5. Developing and developing a system of work in accordance with the directions of the matter and limiting the objectives of the unit
6. My concept of management innovation is the flexible means of achieving the goals of the unit and reducing the effort and possibilities for the very access required.
7. Yes, the development of the curriculum and organization in the Prince's Guard Training School
8. Is creativity and development in management
9. In my view, management innovation is the cooperation of all departments and their association to make the work successful and to harness all ways to make the work.
10. Is to reach the target in the shortest time and the lowest cost. Innovation is where the previous predecessor ended. Administrative creativity begins after obstacles are reached and solutions are developed.
11. Creativity in the way management and implementation of administrative tasks in an unconventional or new way to the current administration
12. Administrative innovation is the work of development and possible adjustments that contribute to simplifying and regulating the course of work and ensure that the procedures followed are avoided and all gaps that may cause deficiencies and lack of relevant information are filled
13. A new idea to develop or facilitate work
14. is to develop a working method by creating a new idea
15. Administrative innovation is a development that can achieve the management of what must be touched and felt by all employees and beneficiaries of the services of this department and achieve this development mainly by developing science and equipment for workers in the sector
16. Is to employ the ability of the right person in the right place.
17. Managing the business in a way that suits most subordinates
18. A new idea to develop the mechanism of work and control good savings
19. Using innovative methods of management
20. Is the work of the department in a coherent manner between individuals to provide the best possible ways to achieve the objectives of the administration
21. Creating a new way in the system of work in creative ways
22. The process of facilitating the work in the administration in an upgraded manner and putting an appropriate management device
23. Modern ways of creativity in management
24. Perform administrative tasks in a new creative way
25. Development in non-traditional work

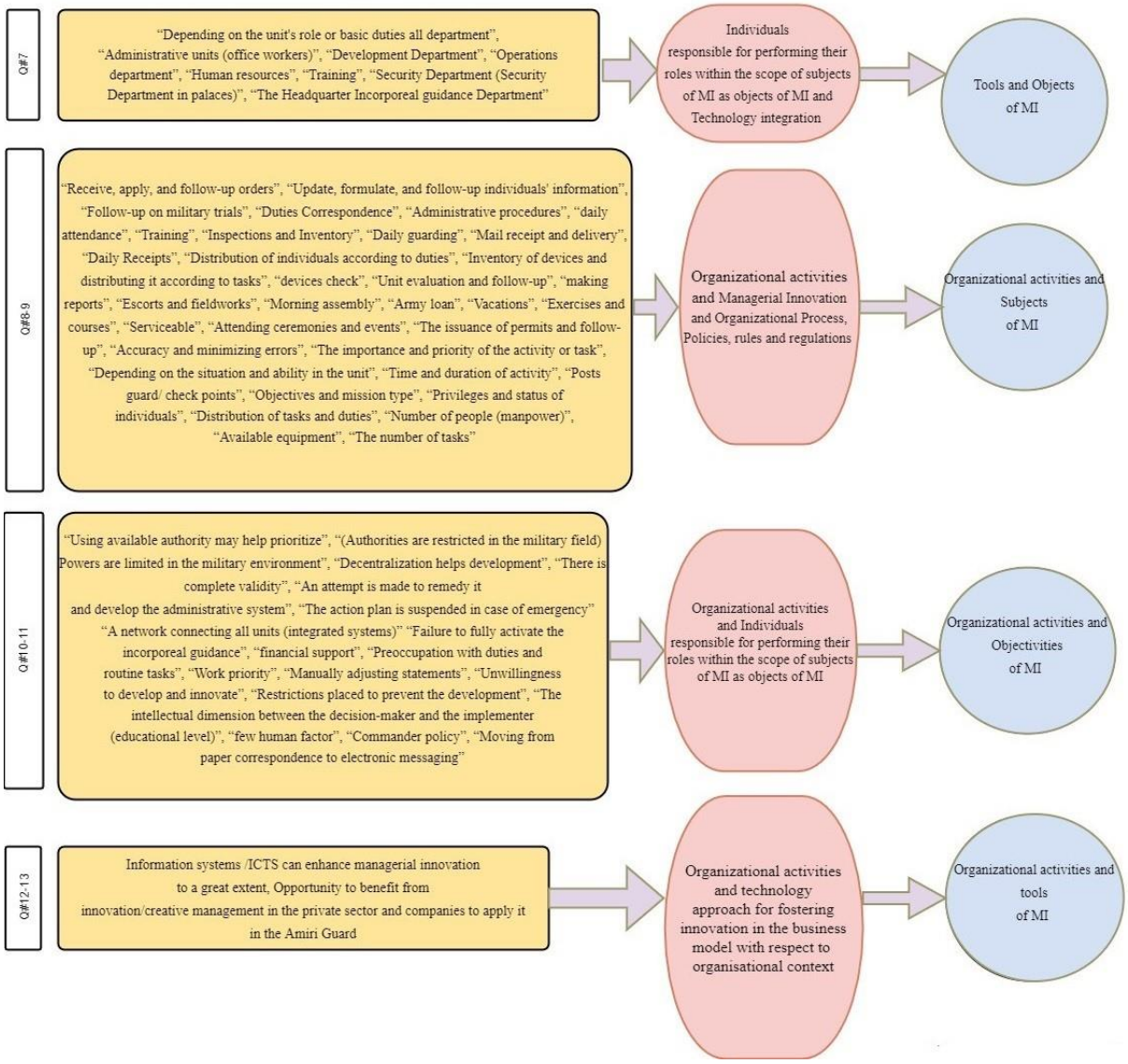
**Do you know what is managerial innovation (MI)? What is your concept of innovation and management creativity?**

| Items |
|---|
| Double way to accomplish administrative tasks |
| The work of management in a coherent manner among individuals is the best possible way to achieve the goals of the administration |
| Development of the mechanism of administrative work (wonderful study curricula and organization) |
| Facilitate work in management |
| Achieving the unit's goals in the shortest time and least cost |
| It is employing the ability of the right person in the right place |
| Managing work in a way that suits most of the subordinates |



# Appendix VII: The Data Coding Process to Develop the Sub-Categories and Categories




Q#7
"Depending on the unit's role or basic duties all department", "Administrative units (office workers)", "Development Department", "Operations department", "Human resources", "Training", "Security Department (Security Department in palaces)", "The Headquarter Incorporeal guidance Department"
Individuals responsible for performing their roles within the scope of subjects of MI as objects of MI and Technology integration
Tools and Objects of MI
Q#8-9
"Receive, apply, and follow-up orders", "Update, formulate, and follow-up individuals' information", "Follow-up on military trials", "Duties Correspondence", "Administrative procedures", "daily attendance", "Training", "Inspections and Inventory", "Daily guarding", "Mail receipt and delivery", "Daily Receipts", "Distribution of individuals according to duties", "Inventory of devices and distributing it according to tasks", "devices check", "Unit evaluation and follow-up", "making reports", "Escorts and fieldworks", "Morning assembly", "Army loan", "Vacations", "Exercises and courses", "Serviceable", "Attending ceremonies and events", "The issuance of permits and follow-up", "Accuracy and minimizing errors", "The importance and priority of the activity or task", "Depending on the situation and ability in the unit", "Time and duration of activity", "Posts guard/ check points", "Objectives and mission type", "Privileges and status of individuals", "Distribution of tasks and duties", "Number of people (manpower)", "Available equipment", "The number of tasks"
Organizational activities and Managerial Innovation and Organizational Process, Policies, rules and regulations
Organizational activities and Subjects of MI
Q#10-11
"Using available authority may help prioritize", "(Authorities are restricted in the military field) Powers are limited in the military environment", "Decentralization helps development", "There is complete validity", "An attempt is made to remedy it and develop the administrative system", "The action plan is suspended in case of emergency" "A network connecting all units (integrated systems)" "Failure to fully activate the incorporeal guidance", "financial support", "Preoccupation with duties and routine tasks", "Work priority", "Manually adjusting statements", "Unwillingness to develop and innovate", "Restrictions placed to prevent the development", "The intellectual dimension between the decision-maker and the implementer (educational level)", "few human factor", "Commander policy", "Moving from paper correspondence to electronic messaging"
Organizational activities and Individuals responsible for performing their roles within the scope of subjects of MI as objects of MI
Organizational activities and Objectivities of MI
Q#12-13
Information systems /ICTS can enhance managerial innovation to a great extent, Opportunity to benefit from innovation/creative management in the private sector and companies to apply it in the Amiri Guard
Organizational activities and technology approach for fostering innovation in the business model with respect to organisational context
Organizational activities and tools of MI

# References


Abdul, J. T., Aldaihani, F. M. F., & Ibraheem, S. (2018). Information technology and managerial innovation of the central agency for information technology in Kuwait. *Global Journal of Management and Business Research*, *18*(11), 17–46. Retrieved from https://www.researchgate.net/publication/333207839_Information_Technology_and_Managerial_Innovation_of_the_Central_Agency_for_Information_Technology_in_Kuwait_Information_Technology_and_Managerial_Innovation_of_the_Central_Agency_for_Information_Techn

Abdullah, Z. (2014). Activity theory as analytical tool: a case study of developing student teachers' creativity in design. *Procedia - Social and Behavioral Sciences*, *131*, 70–84. https://doi.org/10.1016/j.sbspro.2014.04.082

Ackroyd, S., & Fleetwood, S. (Eds.) (2000). *Realist Perspectives on Management and Organizations*. London: Routledge.

Agar, H. M. (1986). *Qualitative Research Methods, Speaking of Ethnography*. Sage Publications, Inc.

Agogué, M., Berthet, E., Fredberg, T., Le Masson, P., Segrestin, B., Stoetzel, M., Wiener, M., & Yström, A. (2017). Explicating the role of innovation intermediaries in the "unknown": a contingency approach. *Journal of Strategy and Management*, *10*(1) 19–39. https://doi.org/10.1108/JSMA-01-2015-0005

Al-Ajmi, M., Chetri, H., Khan, A., & Shrivastava, S. (2002). Reservoir management of a giant lower Burgan reservoir in north Kuwait - reservoir monitoring and production enhancement by innovative tracking of bypassed oil and time-lapsed data integration. *International Journal of Energy*, *7*, 35–89.

Al-Alawi, A., & Al-Bassam, S. (2020). Factors affecting knowledge sharing among governmental employees abroad: case of a Kuwaiti embassy. *Journal of Public Affairs*, 1–12. https://doi.org/10.1002/pa.2412

Al-Kuwari, A. K. (2019). *Oil Revenues in Gulf Emirates: The Allocation of Oil Revenue in Kuwait* (1st ed.). Routledge.

Almalki, M., Gray, K., & Martin-Sanchez, F. (2016). Activity theory as a theoretical framework for health self-quantification: a systematic review of empirical studies. *Journal of Medical Internet Research*, *18*(5), e131. https://doi.org/10.2196/jmir.5000

Al-Shamsi, A., Flavio, L. P., & Hidalgo, A. C. (2018). *What is the Optimal Way to Diversify an Economy?* Massachusetts Institute of Technology. Retrieved 4 February, 2020, from https://phys.org/news/2018-04-optimal-diversify-economy.html

Alabduljader, A. S. (2019). The effective role of work environment on the managerial innovation. *Journal of Management Science*, *9*(1), 91–104. https://doi.org/10.5267/j.msl.2018.10.013

Aleisa, E. E., & Alshayji, K. (2019). Analysis on reclamation and reuse of wastewater in Kuwait. *International Journal of Engineering Research, 7(1)* 1–17. Retrieved from https://kuwaitjournals.org/jer/index.php/JER/article/view/4026/244

Aljarallah, A. R., & Angus, A. (2020). Dilemma of natural resource abundance: a case study of Kuwait. *Sage Open*, *10*(1), 215824401989970. https://doi.org/10.1177/2158244019899701

Alkhunaizan, A., & Love, S. (2013). Effect of Demography on Mobile Commerce Frequency of Actual Use in Saudi Arabia. In A. Rocha, A. Correia, T. Wilson, & K. Stroetmann (Eds.), *Advances in Information Systems and Technologies. Advances in Intelligent Systems and Computing*, vol. 206. Springer. https://doi.org/10.1007/978-3-642-36981-0_12

Allan, G. (2003). A critique of using grounded theory as a research method. *Electronic Journal of Business Research Methods*, *2*(1), 1–77. Retrieved from https://www.researchgate.net/publication/228862603_A_critique_of_using_grounded_theory_as_a_research_method

Allen, D., & Karanasios, S. (2011). Critical factors and patterns in the innovation process. *Policing (Oxford): a Journal of Policy and Practice*, *5*(1), 87–97. https://doi.org/10.1093/police/paq058

Allen, D., Karanasios, S., & Slavova, M. (2011). Working with activity theory: context, technology, and information behavior. *Journal of the American Society for Information Science and Technology*, *62*(4), 776–788. https://doi.org/10.1002/asi.21441

AlQudsi-Ghabra, T., Safar, H. A., & Qabazard, M. N. (2012). Learning resource centers in Kuwait: prospects for future. *International Journal of School Libraries Worldwide*, *18*(1), 123–125. https://doi.org/10.29173/slw6834

Alrukaibi, F., Alkheder, S., & Almashan, N. (2020). Sustainable port management in Kuwait: Shuwaikh port system. *Asian Journal of Shipping and Logistics*, *36*(1), 20–33. https://doi.org/10.1016/j.ajsl.2019.10.002

Altenburg, T. (2009). Building Inclusive Innovation Systems in Developing Countries: Challenges for IS Research. In T. Altenburg, B. Lundvall, K. Joseph, C. Chaminade, & J. Vang (Eds.), *Handbook of Innovation Systems and Developing Countries: Building Domestic Capabilities in a Global Setting* (pp. 33–56). Edward Elgar Publishing Inc.

Alzougool, B. (2019). Innovativeness of small and medium sized enterprises. *Journal of Advanced Management*, *7*(4), 142–147. https://doi.org/10.18178/joams.7.4.142-147

AME Data. (2019). *Kuwait Needs to Bolster Non-Oil Economy to Maintain Growth in 2019*. Retrieved 4 February, 2020, from https://www.ameinfo.com/industry/finance/kuwait-non-oil-economy-growth-2019-nvw7unpok06etf2m

Anderson, C. (2010). Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education*, *74*(8), 141. https://doi.org/10.5688/aj7408141

Andrade-Valbuena, N., & Torres, J. P. (2018). Technological reflectiveness from a managerial capability perspective. *Technological Forecasting and Social Change*, *134*, 84–97. https://doi.org/10.1016/j.techfore.2018.05.019

Anzola-Román, P., Bayona-Sáez, C., & García-Marco, T. (2018). Organizational innovation, internal R&D and externally sourced innovation practices: effects on technological innovation outcomes. *Journal of Business Research*, *91*, 233–247. https://doi.org/10.1016/j.jbusres.2018.06.014

Appleby, P. (1945). Government is Different. In J. M. Shafritz, & A. C. Hyde (Eds.), *Classics of Public Administration* (pp. 122–126). Cengage Learning.

Arab Times. (2021, 20 October). 200 Women Cadets to be Inducted in Kuwait Army. *Arab Times*. Retrieved from https://www.arabtimesonline.com/news/200-women-cadets-to-be-inducted-in-army/

Arundel, A. (2014). *Final Report of the OECD Cognitive Testing Results for Innovation in the Public Sector.* Mimeo.

Arundel, A., Bloch, C., & Ferguson, B. (2019). Advancing innovation in the public sector: aligning innovation measurement with policy goals. *Research Policy, 48*(3), 789–798. https://doi.org/10.1016/j.respol.2018.12.001

Arundel, A., Bowen-Butchart, D., Gatenby-Clark, S., & Goedegebuure, L. (2016). *Management and Service Innovations in Australian and New Zealand Universities*. LH Martin Institute, University of Melbourne.

Arundel, A., & Huber, D. (2013). From too little to too much innovation? Issues in monitoring innovation in the public sector. *Structural Change and Economic Dynamics, 27*, 146–149. https://doi.org/10.1016/j.strueco.2013.06.009

Association of Chartered Certified Accountants [ACCA]. (2019). *Innovation in Public Finance*. ACCA Global. Retrieved 18 May, 2020, from https://www.accaglobal.com/vn/en/professional-insights/pro-accountants-the-future/innovation_in_public_finance.html

Australian Public Service Commission [APSC]. (2016). *State of the Service Report 2015-2016*. Retrieved 30 December, 2020, from https://www.apsc.gov.au/state-service/state-service-report-2015-16

Bachiochi, P. D., & Weiner, S. P. (2004). Qualitative Data Collection and Analysis. In S. G. Rogelberg (Ed.), *Handbook of Research Methods in Industrial and Organizational Psychology* (pp. 161–183). Oxford: Backwell Publishing.

Baiocchi, G., Graizbord, D., & Rodríguez-Muñiz, M. (2013). Actor-network theory and the ethnographic imagination: an exercise in translation. *Qualitative Sociology*, *36*(4), 323–341. https://doi.org/10.1007/s11133-013-9261-9

Bansal, A. (2013). Book review: Marketing Management. *Journal of Strategic Organization*, *17*(2), 189–190. https://doi.org/10.1177/0972262912484998

Barnard, R. (2010). Activity theory: a framework for analysing intercultural academic activity. *Actio: An International Journal of Human Activity Theory*, *3*, 25–37. Retrieved from https://www.researchgate.net/publication/45646713_Activity_theory_A_framework_for_analysing_intercultural_academic_activity

Basile, A., & Faraci, R. (2015). Aligning management model and business model in the management innovation perspective: the role of managerial dynamic capabilities in the organizational change. *Journal of Organizational Change Management*, *28*(1), 43–58. https://doi.org/10.1108/JOCM-10-2013-0199

Batuik, M. E., & Sacks, H. L. (1981). George Herbert Mead and Karl Marx: Exploring consciousness and community. *Symbolic Interaction*, *4*(2), 207–223. https://doi.org/10.1525/si.1981.4.2.207

Bedny, G., & Karwowski, W. (2004). Activity theory as a basis for the study of work. *Ergonomics*, *47*, 134–153. https://doi.org/10.1080/00140130310001617921

Bell, E., Bryman, A., & Harley, B. (2019). *Business Research Methods* (5th ed.). Oxford University Press.

Benaim, M. (2018). From symbolic values to symbolic innovation: internet-memes and innovation. *Research Policy*, *47*(5), 901–910. https://doi.org/10.1016/j.respol.2018.02.014

Bendett, S., Boulègu, M., Connolly, R., Konaev, M., Podvig, P., & Zysk, K. (2021, 23 September). *Advanced Military Technology in Russia: Capabilities, Limitations and Challenges*. Research paper. Retrieved from https://www.chathamhouse.org/2021/09/advanced-military-technology-russia/summary

Bertello, A., Ferraris, A., De Bernardi, P., & Bertoldi, B. (2021). Challenges to open innovation in traditional SMEs: an analysis of pre-competitive projects in university-industry-government collaboration. *International Entrepreneurship and Management Journal*, *18*, 89–104. https://doi.org/10.1007/s11365-020-00727-1

Bertetelsen, O. W., & Bodker, S. (2003). Activity Theory. In Carroll, J. M. (Ed.), *HCI Models Theories, and Frameworks: Toward a Multidisciplinary Science* (pp. 291–324). San Francisco, CA: Morgan Kaufmann.

Bhat, D. (2022, 2 February). LEAP22: Saudi Arabia Unveils over $6.4bn in Technology and Startup Investments. *Gulf Business*. Retrieved from https://gulfbusiness.com/leap22-saudi-arabia-unveils-over-6-4bn-in-technology-and-startup-investment/

Bhatnagar, R., Kumar, A., & Gupta, S. (2016). Role of information systems in a university setup – a case study. *International Journal of Computer Science and Electronics Engineering*, *4*. 151–156. Retrieved from https://www.researchgate.net/publication/317649791_Role_of_Information_Systems_in_an_University_Setup_-_A_Case_Study

Bhimani, H., Mention, A.-L., & Barlatier, P.-J. (2018). Social media and innovation: a systematic literature review and future research directions. *Technological Forecasting and Social Change*, *144*, 251–269. https://doi.org/10.1016/j.techfore.2018.10.007

Binz, C., & Truffer, B. (2017). Global innovation systems—a conceptual framework for innovation dynamics in transnational contexts. *Research Policy*, *46*(7), 1284–1298. https://doi.org/10.1016/j.respol.2017.05.012

Birken, S. A., Lee, S. Y. D., Weiner, B. J., Chin, M. H., & Schaefer, C. T. (2013). Improving the effectiveness of health care innovation implementation: middle managers as change agents. *Medical Care Research and Review*, *70*(1), 29–45. https://doi.org/10.1177/1077558712457427

Birkinshaw, J., Hamel, G., & Mol, M. (2008). Management innovation. *Academy of Management Review*, *33*(4). https://doi.org/10.5465/amr.2008.34421969

Birks, M., & Mills, J. (2015). *Grounded Theory: A Practical Guide* (2nd ed.). London: Sage Publications.

Biscop, S., & Sassel, J. (2017). *Military Factors In The MENA Region: Challenging Trends*. Working Paper No. 6. Middle East and North Africa Regional Architecture.

Bistron, M., & Piotrowski, Z. (2021). Artificial intelligence applications in military systems and their influence on sense of security of citizens. *Electronics*, *10*(7), 871. https://doi.org/10.3390/electronics10070871

Biygautane, M., Gerber, P., & Hodge, G. (2016). The evolution of administrative systems in Kuwait, Saudi Arabia, and Qatar: the challenge of implementing market based reforms. *Digest of Middle East Studies*, *26*(1), 97–126. https://doi.org/10.1111/dome.12093

Björk, J., Boccardelli, P., & Magnusson, M. (2010). Ideation capabilities for continuous innovation. *Creativity and Innovation Management*, *19*(4), 385–396. https://doi.org/10.1111/j.1467-8691.2010.00581.x

Blader, L. S., & Tyler, R. T. (2003). A four-component model of procedural justice: defining the meaning of a "fair" process. *Journal of Personality and Social Psychology*, *29*(6), 747–758. https://doi.org/10.1177/0146167203029006007

Blom, B. J. M., Hoek, H. W., Spinhoven. P., Hoencamp, E., Haffmans, J. P. M., & van Dyck, R. (2010). Treatment of depression in patients from ethnic minority groups in the Netherlands. *Journal of Transcultural Psychiatry*, *47*(3), 473–490. https://doi.org/10.1177/1363461510374561

Blunden, A. (2010). *An Interdisciplinary Theory of Activity*. Leiden: Brill.

Bodas Freitas, I. M. (2008). Sources of differences in the pattern of adoption of organizational and managerial innovations from early to late 1990s in the UK. *Research Policy*, *37*(1), 131–148. https://doi.org/10.1016/j.respol.2007.10.002

Bogdan, R., Taylor, S. J., & Taylor, S. S. (1975). *Introduction to Qualitative Research Methods: A Phenomenological Approach to the Social Sciences*. Wiley.

Bohnet, I., Herrmann, B., Al-lssiss, M., Robbett, A., Al-Yahai, K., & Zeckhauser, R. (2010). *The Elasticity of Trust: How to Promote Trust in the Arab Middle East and the United*

*States*. Faculty Research Working Paper Series RWP10-031. John F. Kennedy School of Government, Harvard University.

Boisseau, A. (2019). *Kuwaiti Women in STEM Complete Internships in the Windy City*. Retrieved 28 January, 2020, from https://culturalvistas.org/blog/features/kuwaiti-women-in-stem-complete-internships-in-the-windy-city/

Bourke, J., & Roper, S. (2017). Innovation, quality management and learning: short-term and longer-term effects. *Research Policy, 46*(8), 1505–1518. https://doi.org/10.1016/j.respol.2017.07.005

Bramwell, A. (2021). Inclusive innovation and the "ordinary" city: incidental or integral? *Local Economy, 36*(3), 242–264. https://doi.org/10.1177/02690942211019005

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Breen, L., Hannibal, C., Huatuco, L. H., Dehe, B., & Xie, Y. (2020). Service improvement in public sector operations – a European comparative analysis. *European Management Journal, 38*(3), 489–491. https://doi.org/10.1016/j.emj.2020.05.002

Bridge, S. (2019). Kuwait Political Mess Likely to Weigh on Economic Reforms, Says Fitch. *Arabian Business*. Retrieved 4 February, 2020, from https://www.arabianbusiness.com/politics-economics/435177-kuwait-political-chaos-likely-to-weigh-on-economic-reforms-says-fitch

Brinkmann, S., & Kvale, S. (2005). Confronting the ethics of qualitative research. *Journal of Constructivist Psychology, 18*(2), 157–181. https://doi.org/10.1080/10720530590914789

British Army. (n.d.). *The Grenadier Guards*. Retrieved 13 March, 2022, from https://www.army.mod.uk/who-we-are/corps-regiments-and-units/infantry/grenadier-guards/

Brooks, J., McCluskey, S., Turley, E., & King, N. (2015). The utility of template analysis in qualitative psychology research. *Qualitative Research in Psychology, 12*(2), 202–222. https://doi.org/10.1080/14780887.2014.955224

Bryant, A., & Charmaz, K. (2007). Grounded Theory Research: Methods and Practices. In A. Bryant, & K. Charmaz (Eds.), *The Sage Handbook of Grounded Theory* (pp. 1–28). Thousand Oaks, CA: Sage Publications, Inc.

Bryant, A., & Charmaz, K. (Eds.). (2010). *The Sage Handbook of Grounded Theory*. Thousand Oaks, CA: Sage Publications, Inc.

Bryce, E. (2016, 29 December). Soldiers of the Future will be Augmented and Indestructible. *Wired*. Retrieved from https://www.wired.co.uk/article/smart-soldiers-technology

Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford University Press.

Bryman, A., & Bell, E. (2015). *Business Research Methods*. Oxford University Press.

Bryman, A., & Burgess, G. R. (1994). *Analyzing Qualitative Data*. Routledge.

Bunn, J. (2015, 2 November). Elite Kuwaiti Force Trains with U.S. Army Central. *US Army*. Retrieved from https://www.army.mil/article/157898/elite_kuwaiti_force_trains_with_u_s_army_central

Burbidge, I., & Webster, H. (2019). *The Public Sector Innovates Just as Much as the Private Sector - RSA*. Retrieved 18 May, 2020, from https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2019/11/innovation-public-sector

Burgess, T. F., Shaw, N. E., & de Mattos, C. (2005). Organisational self-assessment and the adoption of managerial innovations. *International Journal of Productivity and Performance Management*, *54*(2), 98–112. https://doi.org/10.1108/17410400510576603

Burrell, G., & Morgan, G. (1979). *Sociological Paradigms and Organizational Analysis*. Heinemann.

Byrne, M. (2001). The concept of informed consent in qualitative research. *AORN Journal*, *74*(3), 401–403. https://doi.org/10.1016/s0001-2092(06)61798-5

CAIL. (n.d.). *Examples of Innovation in Business*. Retrieved 4 April, 2022, from https://www.cail.com/innov-examples/

Camisón-Haba, S., Clemente-Almendros, J. A., & Gonzalez-Cruz, T. (2019). How technology-based firms become also highly innovative firms? The role of knowledge, technological and managerial capabilities, and entrepreneurs' background. *Journal of Innovation and Knowledge*, *4*(3), 162–170. https://doi.org/10.1016/j.jik.2018.12.001

Campbell, D. E., Wells, J. D., & Valacich, J. S. (2013). Breaking the ice in B2C relationships: understanding pre-adoption e-commerce attraction. *Information Systems Research*, *24*(2), 219–238. https://doi.org/10.1287/isre.1120.0429

Cankar, S., & Petkovsek, V. (2013). Private and public sector innovation and the importance of cross-sector collaboration. *Journal of Applied Business Research*, *29*(6), 1597–1606. https://doi.org/10.19030/jabr.v29i6.8197

Cashmore, J. (2006). Ethical issues concerning consent in obtaining children's reports on their experience of violence. *Child Abuse & Neglect*, *30*(9), 969–977. https://doi.org/10.1016/j.chiabu.2006.05.004

Cassell, C., & Symon, G. (2004). *Essential Guide To Qualitative Methods in Organizational Research*. Sage Publications, Inc.

Cassell, A., Cunliffe, A. L., & Grandy, G. (2018). *The Sage Handbook of Qualitative Business and Management Research Methods*. London: Sage Publications Ltd.

Castellacci, F., Gulbrandsen, M., Hildrum, J., Martinkenaite, I., & Simensen, E. (2018). Functional centrality and innovation intensity: employee-level analysis of the Telenor group. *Research Policy*, *47*(9), 1674–1687. https://doi.org/10.1016/j.respol.2018.06.004

Castells, M. (1996). *The Rise of the Network Society*. Blackwell Publishers.

Ceci, F., & Iubatti, D. (2012). Personal relationships and innovation diffusion in SME networks: a content analysis approach. *Research Policy*, *41*(3), 565–579. https://doi.org/10.1016/j.respol.2011.10.003

CEIC. (2018). *National Accounts Kuwait*. Retrieved 5 March, 2020, from https://www.ceicdata.com/en/country/kuwait

Central Statistical Bureau. (2013). *Statistical Bulletin: Descriptive Data*. Retrieved 5 March, 2020, from https://www.csb.gov.kw/Pages/Statistics_en?ID=34andParentCatID=3

Charmaz, K. (2005). Grounded Theory in the 21st Century: Applications for Advancing Social Justice Studies. In N. Denzin, & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 507–535). Thousand Oaks, CA: Sage Publications, Inc.

Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Sage Publications, Inc.

Charmaz, K. (2014). *Constructing Grounded Theory* (2nd ed.). London: Sage Publications Ltd.

Check, J., & Schutt, R. K. (2012). *Research Methods in Education*. Sage Publications, Inc.

Chen, T. (2011). *Building an Integrated Service Innovation Model: A Case Study of Investment Banking*. International Conference on Economics. Singapore: IACSIT Press.

Chen, C. (2013). Perceived risk, usage frequency of mobile banking services. *Journal of Service Theory and Practice, 23*(5), 410–436. https://doi.org/10.1108/MSQ-10-2012-0137

Chesbrough, H. (2003). *Open Innovation: the New Imperative for Creating and Profiting From Technology*. Harvard Business School.

Cheung, R., & Vogel, D. (2014). *Activity Theory as a Design Framework for Collaborative Learning Using Google Applications Technology* [Conference paper]. The 13th International Conference on Web-Based Learning. Tallinn, Estonia. https://doi.org/10.1007/978-3-662-43454-3_15

Clayman, S. E. (2015). Ethnomethodology, General. In J. D. Wright (Ed.), *International Encyclopedia of the Social and Behavioral Sciences* (2nd ed., pp. 203–206). Elsevier.

Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (8th ed.). Routledge.

Collis, J., & Hussey, R. (2014). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students* (4th ed.). Palgrave Macmillian.

Cooke, G. (2019, 11 June). Magic Bullets: The Future of Artificial Intelligence in Weapons Systems. *US Army*. Retrieved from https://www.army.mil/article/223026/magic_bullets_the_future_of_artificial_intelligence_in_weapons_systems

Cordesman, A. H., & Al-Rodhan, K. R. (2006). *The Gulf Military Forces in an Era of Asymmetric War Kuwait*. Retrieved 8 December, 2021, from https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/media/csis/pubs/060728_gulf_kuwait.pdf

Coughlan, M., Cronin, P., & Ryan, F. (2007). Step-by-step guide to critiquing research. Part 1: quantitative research. *British Journal of Nursing 16*(11), 658–663. https://doi.org/10.12968/bjon.2007.16.11.23681

Crabtree, B., & Miller, W. (Eds.) (1999). *Doing Qualitative Research* (2nd ed.). Sage Publications Ltd.

Crescenzi, R., & Gagliardi, L. (2018). The innovative performance of firms in heterogeneous environments: the interplay between external knowledge and internal absorptive capacities. *Research Policy*, *47*(4), 782–795. https://doi.org/10.1016/j.respol.2018.02.006

Creswell, J. W. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (2nd ed.). Sage Publications, Inc.

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Sage Publications, Inc.

Creswell, J. W. (2013). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Sage Publications, Inc.

Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (3rd ed.). Sage Publications, Inc.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, *39*(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry & Research Design* (4th ed.). London: Sage Publications Ltd.

Creswell, J. W., & Tashakkori, A. (2007). Developing publishable mixed methods manuscripts. *Journal of Mixed Methods Research*, *1*(2), 107–111. https://doi.org/10.1177/1558689806298644

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: a systematic review of the literature. *Journal of Management Studies*, *47*(6), 1154–1191. https://doi.org/10.1111/j.1467-6486.2009.00880.x

Crotty, M. (1998). *The Foundation of Social Research: Meaning and Perspective in the Research Process*. Los Angeles, CA: Sage Publications, Inc.

Czulda, R. (2018). Defense dilemmas of the GCC states – threats and military build ups. *International Journal of Political and Cultural Studies*, *21*(1), 47–68. https://doi.org/10.18778/1641-4233.21.04

Damanpor, F. (1996). Bureaucracy and innovation revisited: effects of contingency factors, industrial sectors, and innovation characteristics. *The Journal of High Technology Management Research*, *7*(2), 149–173. https://doi.org/10.1016/S1047-8310(96)90002-4

Damanpour, F., & Aravind, D. J. M. (2012). Managerial innovation: conceptions, processes and antecedents. *Management and Organization Review*, *8*(2), 423–454. https://doi.org/10.1111/j.1740-8784.2011.00233.x

Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. H. (2018). Internal and external sources and the adoption of innovations in organizations. *British Journal of Management*, *29*(4), 712–730. https://doi.org/10.1111/1467-8551.12296

Dan, S. M., Spaid, B. I., & Noble, C. H. (2018). Exploring the sources of design innovations: insights from the computer, communications and audio equipment industries. *Research Policy*, *47*(8), 1495–1504. https://doi.org/10.1016/j.respol.2018.05.004

David, L. (2007). *Activity Theory*. Retrieved 4 February, 2020, from https://www.learning-theories.com/activity-theory.html

Dearing, D. W., & Cox, J. G. (2018). Diffusion of innovations theory, principles, and practice. *Health Affairs*, *37*(2). https://doi.org/10.1377/hlthaff.2017.1104

DeCuir-Gunby, J., Marshall, P., & McCulloch, A. (2010). Developing and using a codebook for the analysis of interview data: an example from a professional development research project. *Field Methods*, *23*(2), 136–155. https://doi.org/10.1177/1525822X10388468

De Freitas, G. (2019, 10 June). Phase One of Kuwait's BRI-Backed US$130 Billion Silk City Opens. *HKTDC Research*. Retrieved from https://research.hktdc.com/en/article/MzE5NzUyNjY4

Deghan, S. K. (2021, 26 March). Diversify or Risk Unrest, Oil Producers Warned in Report. *The Guardian*. Retrieved from https://www.theguardian.com/global-development/2021/mar/26/green-energy-diversify-risk-unrest-oil-producers-warned-report

Demircioglu, M. A., & Audretsch, D. B. (2017). Conditions for innovation in public sector organizations. *Research Policy*, *46*(9), 1681–1691. https://doi.org/10.1016/j.respol.2017.08.004

Dennehy, D., & Conboy, K. (2017). Going with the flow: an activity theory analysis of flow techniques in software development. *Journal of Systems and Software*, *133*, 160–173. https://doi.org/10.1016/j.jss.2016.10.003

Denzin, N. K., & Lincoln, Y. S. (Eds.) (2011). *The Sage Handbook of Qualitative Research* (4th ed.). Sage Publications, Inc.

De Vaus, D. (2014). *Social Research Today: Surveys in Social Research* (6th ed.). Routledge/Taylor and Francis Group.

De Vries, H., Tummers, L., & Bekkers, V. (2018). The diffusion and adoption of public sector innovations: a meta-synthesis of the literature. *Perspectives on Public Management and Governance*, *1*, 159–179. https://doi.org/10.1093/ppmgov/gvy001

Dey, I. (2003). *Qualitative Data Analysis* (1st ed.). Routledge.

DiChristopher, T. (2018, 12 December). Oil Prices Just Had Their Worst Year Since 2015 — Here's What Went Wrong. *CNBC*. Retrieved from https://www.cnbc.com/2018/12/31/oil-prices-are-set-for-their-worst-year-since-2015.html

Dimant, E., & Tosato, G. (2018). Causes and effects of corruption: what has past decade's empirical research taught us? A survey. *Journal of Economic Surveys*, *32*(2), 335–356. https://doi.org/10.13140/RG.2.1.4784.0888

Dodgson, M., Gann, D. M., & Salter, A. (2008). *The Management of Technological Innovation: Strategy and Practice*. Oxford University Press.

Dornan, T., Carroll, C., & Parboosingh, J. (2002). An electronic learning portfolio for reflective continuing professional development. *Medical Education*, *36*, 767–769. https://doi.org/10.1046/j.1365-2923.2002.01278.x

Dougherty, D. (2017). Organizing for innovation in complex innovation systems. *Innovation: Organization and Management*, *19*(1), 11–15. https://doi.org/10.1080/14479338.2016.1245109

Douglas, J. D. (1967). *The Social Meanings of Suicide*. Princeton University Press.

Doussard, M., & Clark, J. (2021). Inclusive innovation: problems beyond economic development. *Local Economy*, *36*, 265–270. https://doi.org/10.1177/02690942211046473

Drummond, N. (2018, 7 September). Do We Need to Simplify the Rank Structures of UK Armed Forces? *UK Land Power*. Retrieved from https://uklandpower.com/2018/11/07/do-we-need-to-simplify-the-rank-structures-of-uk-armed-forces/

Dudovskiy, J. (2019). *Simple Random Sampling - Research-Methodology*. Retrieved 5 March, 2020, from https://research-methodology.net/sampling-in-primary-data-collection/random-sampling/

Dutta, S., Lanvin, B., & Wunsch-Vincet, S. (2017). *The Global Innovation Index 2017 - Innovation Feeding the World* (10th ed.). Cornell University, INSEAD, and the World Intellectual Property Organization.

Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2015). *Management and Business Research* (5th ed.). Sage Publications Ltd.

Edson, C. H. (1986). Our Past and Present: Historical Inquiry in Education. In R. R. Sherman, & R. B. Webb (Eds.), *Qualitative Research in Education: Focus and Methods* (pp. 42–56). RoutledgeFalmer.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: a focus on trustworthiness. *SAGE Open*. https://doi.org/10.1177/2158244014522633

El Sawy, O. A. (1985). Personal information systems for strategic scanning in turbulent environments: can the CEO go on-line? *MIS Quarterly*, *9*(1), 53–60. https://doi.org/10.2307/249273

Elbanna, A., & Newman, M. (2016). *Disrupt the Disruptor: Rethinking 'Disruption' in Digital Innovation* [Conference paper]. 10th Mediterranean Conference on Information Systems. Paphos. https://core.ac.uk/download/pdf/301370073.pdf

Electronic Information for Libraries. (n.d.). *Business Source Premier*. Retrieved 25 January, 2022, from https://www.eifl.net/e-resources/business-source-premier

Engeström, Y. (1987). *Learning by Expanding: An Activity Theoretical Approach to Developmental Research*. Orienta-Konsultit.

Engeström, Y. (1999). Activity Theory and Individual and Social Transformation. In Y. Engeström, R. Miettinen, & R. Punamäki (Eds.), *Perspectives on Activity Theory* (pp. 19–38). Cambridge: Cambridge University Press

Engeström, Y. (2000). Activity theory and the social construction of knowledge: a story of four umpires. *Organization*, *7*(2), 301–310. https://doi.org/10.1177/135050840072006

Engel, R. J., & Schutt, R. K. (2016). *The Practice of Research in Social Work*. Sage Publications, Inc.

Etikan, I. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

European Commission. (2011). *Innobarometer 2010: Analytical Report Innovation in Public Administration (Flash Eurobarometer 305*). DG Enterprise.

European Commission. (2013). *Powering European Public Sector Innovation*. Retrieved 17 May, 2020, from https://ec.europa.eu/futurium/en/content/powering-european-public-sector-innovation-towards-new-architecture-report-expert-group.html

Faridian, P. H., & Neubaum, D. O. (2021). Ambidexterity in the age of asset sharing: development of dynamic capabilities in open source ecosystems. *Technovation*, *99*, 102125. https://doi.org/10.1016/j.technovation.2020.102125

Fattahova, N. (2021, 18 October). Up to 200 Women Expected to Join Kuwait Military. *The Kuwaiti Times*. Retrieved from https://www.kuwaittimes.com/up-to-200-women-expected-to-join-kuwait-military/

Fayard, A.-L., Gkeredakis, E., & Levina, N. (2016). Framing innovation opportunities while staying committed to an organizational epistemic stance. *Information Systems Research*, 1–22. https://doi.org/0.1287/isre.2016.0623

Filiou, D. (2021). A new perspective on open innovation: established and new technology firms in UK bio-pharmaceuticals. *R&D Management*, *51*(1), 73–86. https://doi.org/10.1111/radm.12425

Finlay, L. (2011). *Phenomenology for Psychotherapists: Researching the Lived World*. Wiley-Blackwell.

Flick, U. (2014). *The SAGE Handbook of Qualitative Data Analysis*. Sage Publications, Inc.

Fonseca, T., de Faria, P., & Lima, F. (2019). Human capital and innovation: the importance of the optimal organizational task structure. *Research Policy*, *48*(3), 616–627. https://doi.org/10.1016/j.respol.2018.10.010

Forces Watch. (2017, July). Does The Military Give Young People A 'Leg Up'? The Armed Forces And Social Mobility. *Forces Watch*. Retrieved from https://www.forceswatch.net/wp-content/uploads/2017/07/armed_forces_and_social_mobility.pdf

Forsgren, E., & Byström, K. (2017). Multiple social media in the workplace: contradictions and congruencies. *Information Systems Journal*, *28*(3), 442–464. http://dx.doi.org/10.1111/isj.12156

Fouché, C. B., & De Vos, A. S. (2011). Formal Formulations. In A. S. De Vos, H. Strydom, C. B. Fouché, & C. L. S. Delport (Eds.), *Research At Grass Roots: For The Social Sciences And Human Service Professions* (pp. 89–100). Van Schaik Publishers.

Fu, X., Mohnen, P., & Zanello, G. (2018). Innovation and productivity in formal and informal firms in Ghana. *Technological Forecasting and Social Change*, *131*, 315–325. https://doi.org/10.1016/j.techfore.2017.08.009

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, *12*(2), 219–245. https://doi.org/10.1177/1077800405284363

Flyvbjerg, B. (2011). Case Study. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (4th ed., pp. 301–316). Sage Publications, Inc.

Friesen, N., Henriksson, C., & Saevi, T. (2012). *Hermeneutic Phenomenology in Education: Method and Practice*. Sense Publishers.

Fruman, C. (2017). *Economic Diversification: A Priority for Action, Now More Than Ever*. Retrieved 4 February, 2020, from http://blogs.worldbank.org/psd/economic-diversification-priority-action-now-more-ever

Galletta, A. (2013). *Mastering the Semi-Structured Interview and Beyond: From Research Design to Analysis and Publication*. New York University Press.

García-Cruz, J., Real, J. C., & Roldán, J. L. (2018). Managerial perceptions of employees' affective commitment and product innovation. *Economics of Innovation and New Technology*, *27*(3), 290–305. https://doi.org/10.1080/10438599.2017.1346163

Gelan, A., Hewings, G. J. D., & Alawadhi, A. (2021). Diversifying a resource-dependent economy: private–public relationships in the Kuwaiti economy. *Economic Structures*, *10*, 15. https://doi.org/10.1186/s40008-021-00246-4

Gerber, S. (2018). *10 Innovative Technologies with Potential Impact for Business*. Retrieved 11 March, 2021, from https://qrius.com/10-innovative-technologies-with-potential-impact-for-business/

Gergen, K. J. (2009). *The Relational Being: Beyond Self and Community*. New York, NY: Oxford University Press.

Germonprez, M., Levy, M., Kendall, J. E., & Kendall, K. E. (2020). Tapestries of innovation: structures of contemporary open source project engagements. *Journal of the Association for Information Systems*, *21*(3), 615–663. https://doi.org/10.17705/1jais.00615

Gerybadze, A., & Reger, G. (1999). Globalization of R&D: recent changes in the management of innovation in transnational corporations. *Research Policy*, *28*(2–3), 251–274. https://doi.org/10.1016/S0048-7333(98)00111-5

Gedera, D., & Williams, P. J. (2013). Using activity theory to understand contradictions in an online university course facilitated by Moodle. *International Journal of Information Technology and Computer Science*, *10*, 32–41. https://core.ac.uk/download/pdf/156952688.pdf

Ghauri, P., Grønhaug, K., & Strange, R. (2020). *Research Methods in Business Studies*. Cambridge University Press.

Giannopoulou, E., Barlatier, P.-J., & Pénin, J. (2019). Same but different? Research and technology organizations, universities and the innovation activities of firms. *Research Policy*, *48*(1), 223–233. https://doi.org/10.1016/j.respol.2018.08.008

Glaser, B. (1978). *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. The Sociology Press.

Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine.

Goel, V., & Dolan, R. J. (2004). Differential involvement of left prefrontal cortex in inductive and deductive reasoning. *Cognition*, *93*(3), 109–121. https://doi.org/10.1016/j.cognition.2004.03.001

Gondalia, A., Dixit, D., Parashar, S., Raghava, V., Sengupta, A., & Sarobin, V. R. (2018). IoT-based healthcare monitoring system for war soldiers using machine learning. *Procedia Computer Science*, *133*, 1005–1013. https://doi.org/10.1016/j.procs.2018.07.075

González Rey, F. L. (2013). Subjetividad, cultura e investigación cualitativa en psicología: la ciencia como producción culturalmente situada [Subjectivity, culture and qualitative research in psychology: science as culturally situated production]. *Revista Liminales*, *1*(4), 13–36. https://doi.org/10.54255/lim.vol2.num04.233

Gotarane, V., & Raskar, S. (2019). *IoT Practices in Military Applications* [Conference paper]. 3rd International Conference on Trends in Electronics and Informatics. Tirunelveli, India. Retrieved from https://www.researchgate.net/publication/336414477_IoT_Practices_in_Military_Applications

GOVERN Center. (2020, May). *Governance of Arab Think Tanks for Stakeholder Impact and Sustainability: Flagship Report for the T20 Analysis and Recommendations*. Retrieved from https://govern.center/wp-content/uploads/2020/05/Governance-of-Arab-Think-Tanks-Report.pdf

Government of the State of Kuwait & United Nations. (2019). *Strategic Cooperation Framework 2020-2025: A Partnership for Sustainable Development.* Retrieved 7 April, 2022, from https://www.undp.org/sites/g/files/zskgke326/files/2021-07/DPDCPKWT3_UNSCF%2022%20%20Sep%202019%20-%20Draft.docx

Goyal, A. (2016). *Abductive Reasoning in Macroeconomics: Working Papers*. Retrieved 5 March, 2020, from https://ideas.repec.org/p/ess/wpaper/id11272.html

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Greener, S. (2011). *Introduction to Business Research Methods* (2nd ed.). Ventus Publishings.

Griffin, A., Langerak, F., & Eling, K. (2019). The evolution, status, and research agenda for the future of research in NPD cycle time. *Journal of Product Innovation Management*, *36*(2), 263–280. https://doi.org/10.1111/jpim.12484

Griffin, S., Love-Koh, J., Pennington, B., & Owen, L. (2019). Evaluation of intervention impact on health inequality for resource allocation. *Journal of Medical Decision Making*, *39*(3), 171–182. https://doi.org/10.1177/0272989X19829726

Grigoryan, T., & Babayan, N. (2018). Activity theory in studying innovations: the interconnected phases of activity system. *Humanities and Social Sciences Review*, *7*(1), 331–336. Retrieved from https://www.researchgate.net/publication/322486804_activity_theory_in_studying_innovations_the_interconnected_phases_of_activity_system

Grimpe, C. (2017). Innovation as a phenomenon and the quest for cool. *Industry and Innovation*, *24*(1), 1–7. https://doi.org/10.1080/13662716.2016.1256761

Gulseven, O., & Mostert, J. (2017). Application of circular economy for sustainable resource management in Kuwait. *International Journal of Social Ecology and Sustainable Development*, *8*(3), 87–99. https://doi.org/10.4018/IJSESD.2017070106

Guo, J., Pan, J., Guo, J., Gu, F., & Kuusisto, J. (2019). Measurement framework for assessing disruptive innovations. *Technological Forecasting and Social Change*, *139*, 250–265. https://doi.org/10.1016/j.techfore.2018.10.015

Hamel, G. (2006, February). The Why, What, and How of Management Innovation. *Harvard Business Review*. Retrieved from https://hbr.org/2006/02/the-why-what-and-how-of-management-innovation

Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in Practices* (3rd ed.). Routledge Taylor and Francis Group.

Hansen, S.-O., & Wakonen, J. (1997). Innovation, a winning solution? *International Journal of Technology Management, 13*(4), 345–358. https://doi.org/10.1504/IJTM.1997.001668

Hashim, N. H., & Jones, M. L. (2014). *Activity Theory: A Framework for Qualitative Analysis*. Wollongong, Australia: Faculty of Commerce, University of Wollongong.

Hashim, N. H., & Jones, M. L. (2017). *Activity Theory: A Framework for Qualitative Analysis* [Conference paper]. 4th International Qualitative Research Convention. PJ Hilton, Malaysia. Retrieved from http://ro.uow.edu.au/commpapers/408

Hassan, M., Shriaan, A. A., & Al-Mutairi, K. A. (2017). An analysis of Kuwaiti economy 1995 to 2015. *Journal of Asian Social Science, 13,* 12–24. https://doi.org/10.5539/ass.v13n12p24

Hawamdeh, S., & Raigangar, V. (2014). Qualitative interviewing: methodological challenges in Arab settings. *Nurse Researcher, 21*(3), 27–31. https://doi.org/10.7748/nr2014.01.21.3.27.e357

Headquarters Department of the Army. (2006). *Urban Operations*. Field Manual No. 3-06. Retrieved 10 March, 2022, from https://irp.fas.org/doddir/army/fm3-06.pdf

Helena, D., Ramos, A., Varum, T., & Matos, J. N. (2021). The use of 3D printing technology for manufacturing metal antennas in the 5G/IoT context. *Sensors, 21,* 3321. https://doi.org/10.3390/s21103321

Heeks, R., Foster, C., & Nugroho, Y. (2014). New models of inclusive innovation for development. *Innovation and Development, 4*(2), 175–185. https://doi.org/10.1080/2157930X.2014.928982

Henkel, J. (2006). Selective revealing in open innovation processes: the case of embedded Linux. *Research Policy*, *35*(7), 953–969. https://doi.org/10.1016/j.respol.2006.04.010

Hern, A. (2016, 19 October). Stephen Hawking: AI Will Be 'Either Best or Worst Thing' for Humanity. *The Guardian*. Retrieved from https://www.theguardian.com/science/2016/oct/19/stephen-hawking-ai-best-or-worst-thing-for-humanity-cambridge

Hester, S., & Francis, D. (1997). Reality analysis in a classroom storytelling. *The British Journal of Sociology*, *48*(1), 95–112. https://doi.org/10.2307/591912

Heydarian, N. M. (2016, 31 March). Developing Theory With the Grounded-Theory Approach and Thematic Analysis. *Association for Phycological Science*. Retrieved from https://www.psychologicalscience.org/observer/developing-theory-with-the-grounded-theory-approach-and-thematic-analysis

Hidalgo, A. (2004). *Innovation Management and the Knowledge-Driven Economy*. European Commission.

Howard, C. E. (2015, 20 August). Wearable Technology Drives Aerospace Efficiency and Productivity. *Military Aerospace Electronics*. Retrieved from https://www.militaryaerospace.com/commercial-aerospace/article/14228494/wearable-technology-drives-aerospace-efficiency-and-productivity

Hussinger, K., Dick, J. M. H., & Czarnitzki, D. (2018). Ownership concentration and innovativeness of corporate ventures. *Research Policy*, *47*(2), 527–541. https://doi.org/10.1016/j.respol.2018.01.008

Hussinger, K., & Pacher, S. (2019). Information ambiguity, patents and the market value of innovative assets. *Research Policy*, *48*(3), 665–675. https://doi.org/10.1016/j.respol.2018.10.022

Ibrahim, H. (2021, 23 June). Regional Challenges Boost Kuwait-US Strategic Co-operation. *Al-Mashareq*. Retrieved from https://almashareq.com/en_GB/articles/cnmi_am/features/2021/06/23/feature-04

International Labour Organization. (2020). Decent Work Country Programme for Kuwait: 2018–2020. *ILO*. Retrieved 12 April, 2022, from https://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/genericdocument/wcms_656564.pdf

International Monetary Fund [IMF]. (2017, 15 November). Article IV Consultation with Kuwait – IMF Concluding Statement. *IMF*. Retrieved from https://www.imf.org/en/News/Articles/2017/11/15/ms111517-2017-article-iv-consultation-with-kuwait-imf-concluding-statement

Ingram, J. (2019, 12 July). Kuwait Eyes Huge 2019-20 Budget Deficit. *Mees*. Retrieved from https://www.mees.com/2019/7/12/economics-finance/kuwait-eyes-huge-2019-20-budget-deficit/dd2f6830-a4a0-11e9-90ac-732910c8f791

InterNations. (n.d.). From Great to Worst, the GCC States Have It All. *Investment Monitor*. Retrieved 7 April, 2022, from https://www.investmentmonitor.ai/sectors/extractive-industries/the-state-of-play-fdi-in-kuwait

Iordanoglou, D., Tsakarestou, B., Tsene, L., Ioannidis, K., & Leandros, N. (2014). The development of an innovative leadership training programme for European young professionals in times of crisis. *Procedia - Social and Behavioral Sciences, 156*. https://doi.org/10.1016/j.sbspro.2014.11.128

Isik, M. (2018). Getting ready for the post-oil age: the entrepreneurship as the rising star of development policies in the Gulf states. *Modern Economy, 9*(1), 125–148. https://doi.org/10.4236/me.2018.91008

Iyamu, T., & Shaanika, I. (2019). The use of activity theory to guide information systems research. *Education and Information Technologies*, *24*, 165–180. https://doi.org/10.1007/s10639-018-9764-9

Jarzabkowski, P. (2003). Strategic practices: an activity theory perspective on continuity and change. *Journal of Management Studies*, *40*(1), 23–56. https://doi.org/10.1111/1467-6486.t01-1-00003

Javadi, M., & Zarea, K. (2016). Understanding thematic analysis and its pitfall. *Journal of Client Care*, *1*(1), 34–40. https://doi.org/10.15412/J.JCC.02010107

Ji, H., Sui, Y.-T., & Suo, L.-L. (2017). Understanding innovation mechanism through the lens of communities of practice (COP). *Technological Forecasting and Social Change*, *118*, 205–212. https://doi.org/10.1016/j.techfore.2017.02.021

Johnson, D. S. (2020). Public versus private employees: a perspective on the characteristics and implications. *FIIB Business Review*, *9*(1), 9–14. https://doi.org/10.1177/2319714519901081

Johnson, H. T. (1975). Management accounting in an early integrated industrial: E. I. duPont de Nemours Powder Company, 1903-1912. *The Business History Review*, *49*(2), 184–204. https://doi.org/10.2307/3113699

Johnson, P. (2015). Evaluating qualitative research: past, present and future. *Qualitative Research in Organizations and Management*, *10*(4), 320–324. https://doi.org/10.1108/QROM-07-2015-1303

Jolles, M., McBeath, B., Carnochan, S., & Austin, M. (2016). *Factors Associated With Managerial Innovation in Public Human Service Organizations*. Portland State University.

Jones, G. (2015, 12 June). 1-68 Armor Partners with Kuwait's Emiri Guard. *US Army*. Retrieved from https://www.army.mil/article/150374/1_68_armor_partners_with_kuwaits_emiri_guard

Joubert, J., & Van Belle, J.-P. (2013). The role of trust and risk in mobile commerce adoption within South Africa. *International Journal of Business, Humanities and Technology*, *3*(2), 27–38. Retrieved from https://www.ijbhtnet.com/journals/Vol_3_No_2_February_2013/3.pdf

Juntunen, J. K., Halme, M., Korsunova, A., & Rajala, R. (2018). Strategies for integrating stakeholders into sustainability innovation: a configurational perspective. *Journal of Product Innovation Management*, *36*(3), 331–355. https://doi.org/10.1111/jpim.12481

Jussila, J., Sillanpää, V., Lehtonen, T., Helander, N., & Frank, L. (2019). *An Activity Theory Perspective on Creating a New Digital Government Service in Finland* [Conference

paper]. Proceedings of the 52nd Hawaii International Conference on System Sciences. Retrieved from http://hdl.handle.net/10125/59729

Kaboudan, A. M. (1988). Oil revenue and Kuwait's economy: an econometric approach. *International Journal of Middle East Studies*, *20*(1), 45–66. Retrieved from https://www.jstor.org/stable/163585

Kamanga, R., Alexander, P. M., & Kanobe, F. (2019). Activity theory used as an analytical lens for business research. *The Electronic Journal of Business Research Methods*, *17*(4), 212–228. https://doi.org/10.34190/ JBRM.17.4.002

Kang, J. J., Yang, W., Dermody, G., Ghasemian, M., Adibi, S., & Haskell-Dowland, P. S. (2020). No soldiers left behind: an IoT-based low-power military mobile health system design. *IEEE Access*, *8*. 201498–201515. https://doi.org/10.1109/ACCESS.2020.3035812

Kaptelinin, V. (2014). Activity Theory. In *The Encyclopedia of Human-Computer Interaction* (2nd ed.). Interaction Design Foundation.

Kaptelinin, V. (2005). The object of activity: making sense of the sense-maker. *Mind, Culture, and Activity*, *12*(1), 4–18. https://doi.org/10.1207/s15327884mca1201_2

Kaptelinin, V., & Nardi, B. A. (2008). Acting with technology, activity theory and interaction design. *Visible Language*, *42*(2), 196. https://doi.org/10.5210/fm.v12i4.1772

Kaptelinin, V., & Nardi, B. A. (2018). Activity theory as a framework for human-technology interaction research. *Mind, Culture, and Activity*, *25*(1), 3–5. https://doi.org/10.1080/10749039.2017.1393089

Karanasios, S. (2018). Toward a unified view of technology and activity: the contribution of activity theory to information systems research. *Information Technology and People*, *31*(1), 134–155. https://doi.org/10.1108/ITP-04-2016-0074

Karanasios, S., & Allen, D. (2013). ICT for development in the context of the closure of Chernobyl nuclear power plant: an activity theory perspective. *Information Systems Journal*, *23*(4), 287–306. https://doi.org/10.1111/isj.12011

Karanasios, S., & Allen, D. K. (2018). Activity theory in information systems research. *Information Systems Journal*, *28*(3), 439–441. https://doi.org/10.1111/isj.12184

Karanasios, S., Allen, D. K., & Finnegan, P. (2015). Information systems journal special issue on: activity theory in information systems research. *Information Systems Journal*, *25*(3), 309–313. https://doi.org/10.1111/isj.12061

Karasavvidis, L. (2009). Activity theory as a conceptual framework for understanding teacher approaches to information and communication technologies. *Computers and Education*, *53*(2), 436–444. https://doi.org/10.1016/j.compedu.2009.03.003

Kent, G. (2000). Understanding the experiences of people with disfigurements: an integration of four models of social and psychological functioning. *Psychology, Health and Medicine*, *5*, 117–29. https://doi.org/10.1080/713690187

Kerr, T. (2022, 16 March). Procter & Gamble: This Legendary Company Is Performing Well - For a Price. *Yahoo Finance*. Retrieved from https://finance.yahoo.com/news/procter-gamble-legendary-company-performing-214047672.html

Kim, H. M., & Laskowski, M. (2018). Toward an ontology-driven blockchain design for supply-chain provenance. *Intelligent Systems in Accounting, Finance and Management*, *25*(1), 18–27. https://doi.org/10.1002/isaf.1424

Kim, R. H., Gaukler, G. M., & Lee, C. W. (2016). Improving healthcare quality: a technological and managerial innovation perspective. *Technological Forecasting and Social Change*, *113*, 373–378. https://doi.org/10.1016/j.techfore.2016.09.012

King, N. (2012). Doing Template Analysis. In G. Symon, & C. Cassell (Eds.), Q*ualitative Organizational Research: Core Methods and Current Challenges*. Sage Publications, Inc.

King, L. A., & Napa, C. K. (1998). What makes a life good? *Journal of Personality and Social Psychology*, *75*(1), 156–165. https://doi.org/10.1037/0022-3514.75.1.156

King, N., & Brookes, J. M. (2017). *Template Analysis for Business and Management Students*. London: Sage Publications Ltd.

King, N., Brooks, J., & Tabari, S. (2018). Template analysis in business and management research. *Hospital & Society*, *10*(2), 197–221. https://doi.org/10.1007/978-3-319-65442-3_8

King, N., Carroll, C., Newton, P., & Dornan, T. (2002). "You can't cure it so you have to endure it": the experience of adaptation to diabetic renal disease. *Qualitative Health Research*, *12*, 329–346. https://doi.org/10.1177/104973202129119928

Kirchherr, J., & Charles, K. (2018). Enhancing the sample diversity of snowball samples: recommendations from a research project on anti-dam movements in Southeast Asia. *PlOS One*, *13*(8), e0201710–e0201710. https://doi.org/10.1371/journal.pone.0201710

Kirkby-Geddes, E., King, N., & Bravington, A. (2013). Social capital and community group participation: examining 'bridging' and 'bonding' in the context of a healthy living centre in the UK. *Journal of Community and Applied Social Psychology*, *23*, 271–285. https://doi.org/10.1002/casp.2118

Kisperska-Moroń, D. (1992). Relativity of the "new logistic technologies" and of their inventory aspects. *International Journal of Production Economics*, *26*(1), 181–186. https://doi.org/10.1016/0925-5273(92)90061-B

Kittelman, S., Calvo-Amodio, J., & Martínez León, H. C. (2018). A systems analysis of communication: defining the nature of and principles for communication within human activity systems. *Systems Research and Behavioral Science*, *35*(5), 520–537. https://doi.org/10.1002/sres.2562

Kleysen, R., & Street, C. (2001). Toward a multi-dimensional measure of individual innovative behavior. *Journal of Intellectual Capital*, *2*, 284–296. https://doi.org/10.1108/EUM0000000005660

Ko, W. W., & Liu, G. (2019). How information technology assimilation promotes exploratory and exploitative innovation in the small- and medium-sized firm context: the role of contextual ambidexterity and knowledge base. *Journal of Product Innovation Management*, *36*(4), 442–466. https://doi.org/10.1111/jpim.12486

Kole, E. S. (2000). Connecting Women from Developing Countries to the Internet: Searching for an Appropriate Paradigm. *41st Annual Convention of the International Studies*

*Association. Reflection, Integration, Cumulation: International Studies Past and Future*. 14–17 March, Los Angeles, CA.

Kolloch, M., & Dellermann, D. (2018). Digital innovation in the energy industry: the impact of controversies on the evolution of innovation ecosystems. *Technological Forecasting and Social Change, 136*, 254–264. https://doi.org/10.1016/j.techfore.2017.03.033

Kraus, S., Pohjola, M., & Koponen, A. (2012). Innovation in family firms: an empirical analysis linking organizational and managerial innovation to corporate success. *Review of Managerial Science, 6*(3), 265–286. https://doi.org/10.1007/s11846-011-0065-6

Kuutti, K. (1991). Activity Theory and Its Applications to Information Systems Research and Development. In H.-E. Nissen, H. K. Klein, & R. Hirscheim (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions* (pp. 529–549). Amsterdam: Elsevier.

Kuutti, K. (1996). Activity Theory as a Potential Framework for Human Computer Interaction Research. In B. A. Nardi (Ed.), *Context and Consciousness: Activity Theory and Human Computer Interaction* (pp. 17–44). Cambridge: MIT Press.

Kuwait's Achievers for Future Opportunities [KAFO]. (2020). *Join Kuwait's Achievers For Future Opportunities - KAFO*. Retrieved 15 January, 2020, from https://www.kafo.gov.kw/

Kuwait Direct Investment Promotion Authority. (n.d.). *Kuwait Direct Investment Promotion Authority Law: Law No. 116 of 201*3. Retrieved 4 April, 2022, from https://www.e.gov.kw/sites/kgoenglish/Forms/KDIPA-Law-En.pdf

Kuwait Direct Investment Promotion Authority. (2019, 11 December). *KDIPA participates in the New Kuwait Summit 2019*. Retrieved 29 January, 2020, from https://kdipa.gov.kw/kdipa-participates-in-the-new-kuwait-summit-2019/

Kuwaiti News Agency. (2021, 4 February). *KUNA*. Retrieved from https://www.kuna.net.kw/ArticleDetails.aspx?id=2957946#

Kuwait Times. (2019, 7 October). Kuwait's Non-Oil Economic Growth Expected to Reach 3.5% in 2020. *Kuwait Times*. Retrieved from https://news.kuwaittimes.net/website/kuwaits-non-oil-economic-growth-expected-to-reach-3-5-in-2020/

Kuwait Voluntary National Review. (2019a). *Report on the Implementation of the 2030 Agenda to the UN High-Level Political Forum on Sustainable Development*. Retrieved 8 December, 2021, from https://sustainabledevelopment.un.org/content/documents/23384Kuwait_VNR_FINAL.PDF

Kuwait Voluntary National Review. (2019b). *Kuwait Voluntary National Review 2019.* Retrieved 7 April, 2022, from https://sustainabledevelopment.un.org/content/documents/23384Kuwait_VNR_FINAL.PDF

Kvale, S. (1996). *InterViews: An Introduction to Qualitative Research Interviews*. Sage Publications, Inc.

Lam, A. (2006). *Organizational Innovation*. Oxford Handbooks Online. https://doi.org/10.1093/oxfordhb/9780199286805.003.0005

Larkin, M., Watts, S., & Clifton, E. (2006). Giving voice and making sense in interpretative phenomenological analysis. *Qualitative Research in Psychology*, *3*(2), 102–120. https://doi.org/10.1191/1478088706qp062oa

Lektorsky, V. A. (2011). Activity Theory in a New Era. In Y. Engestrom, R. Reijo Miettinen, & R.-L. Punamaki (Eds.) (2011), *Perspectives on Activity Theory*. Cambridge: Cambridge University Press.

Leontiev, A. N. (1978). *Activity, Consciousness, Personality*. Prentice Hall.

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, *4*(3), 324–327. https://doi.org/10.4103/2249-4863.161306

Li, K., Rollins, J., & Yan, E. (2018). Web of Science use in published research and review papers 1997–2017: a selective, dynamic, cross-domain, content-based analysis. *Scientometrics*, *115*(1), 1–20. https://doi.org/10.1007/s11192-017-2622-5

Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). *Narrative Research: Reading, Analysis, and Interpretation*. Sage Publications, Inc.

Lin, H., Chen, M., & Su, J. (2017). How management innovations are successfully implemented? An organizational routines' perspective. *Journal of Organizational Change Management*, *30*(4), 456–486. https://doi.org/10.1108/JOCM-07-2016-0124

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications, Inc.

Lipman, V. (2018, 25 September). The Best Sentence I Ever Read About Managing Talent. *Forbes*. Retrieved from https://www.forbes.com/sites/victorlipman/2018/09/25/the-best-sentence-i-ever-read-about-managing-talent/?sh=25e2c745cdfb

Lockett, S. H., Hatton, J., Turner, R., Stubbins, C., Hodgekins, J., & Fowler, D. (2011). Using a semi-structured interview to explore imagery experienced during social anxiety for clients with a diagnosis of psychosis: an exploratory study conducted within an early intervention for psychosis service. *Behavioural and Cognitive Psychotherapy*, *40*, 55–68. https://doi.org/10.1017/S1352465811000439

Loschi, H. M., León, J., Iano, Y., Filho, E. R., Conte, F. D., Lustosa, T. C., & Freitas, P. O. (2015). Energy efficiency in smart grid: a prospective study on energy management systems. *Smart Grid and Renewable Energy*, *6*, 250–259. https://doi.org/10.4236/sgre.2015.68021

Lowe, N., Schrock, G., Jain, R., & Conway, M. (2021). Genesis at work: advancing inclusive innovation through manufacturing extension. *Local Economy*, *36*(3), 224–241. https://doi.org/10.1177/02690942211029518

Lynch, M. (2015). Science and Technology Studies, Ethnomethodology of. In J. D. Wright (Ed.), *International Encyclopedia of the Social and Behavioral Sciences* (2nd ed., pp. 192–199). Elsevier.

Lyytinen, K., & Damsgaard, J. (2001). What's Wrong with the Diffusion of Innovation Theory?. In M. A. Ardis, & B. L. Marcolin (Eds.), *Diffusing Software Product and Process Innovations*. The International Federation for Information Processing, vol 59. Boston, MA: Springer. https://doi.org/10.1007/978-0-387-35404-0_11

van Maanen, J. (1995). An end to innocence: the ethnography of ethnography. In J. van Maanen (Ed.), *Representation in Ethnography* (pp. 1–35), Thousand Oaks, CA: Sage Publications, Inc.

Machiavelli, N. (n.d.). The Prince. In E. M. Rogers (Ed.) (2010), *Diffusion of Innovations* (4th ed.). Simon and Schuster.

Mahdi, K. A. (2018). *New Kuwait 2035: Kuwait National Development Plan*. Retrieved 19 February, 2022, from https://kif.kdipa.gov.kw/wp-content/uploads/khalid-mahdi-english.pdf

Majumder, K. (2015, 29 April). A Young Researcher's Guide to a Systematic Review. *Editage Insights*. Retrieved from https://www.editage.com/insights/a-young-researchers-guide-to-a-systematic-review

Mariani, J., Williams, B., & Loubert, B. (2015). Continuing the March: The Past, Present, and Future of the IoT in the Military. *Deloitte*. Retrieved 10 March, 2022, from https://www2.deloitte.com/insights/us/en/focus/internet-of-things/iot-in-military-defense-industry.html

Martin, D., & Peim, N. (2009). Critical perspectives on activity theory. *Educational Review*, *61*(2), 131–138. https://doi.org/10.1080/00131910902844689

Martin, M. J., Kidd, S. R., & Landis, C. B. (2020, 13 April). 5G Technology: Improved Capabilities Enable Joint Logistics for the Future Joint Force. *US Army*. Retrieved from https://www.army.mil/article/234375/5g_technology_improved_capabilities_enable_joint_logistics_for_the_future_joint_force

Martini, L., Tjakraatmadja, J. H., Anggoro, Y., Pritasari, A., & Hutapea, L. (2012). Triple Helix collaboration to develop economic corridors as knowledge hub in Indonesia.

*Procedia - Social and Behavioral Sciences*, *52*, 130–139. https://doi.org/10.1016/j.sbspro.2012.09.449

May, T., & Williams, M. (1996). *An Introduction to the Philosophy of Social Research* (1st ed.). Routledge.

McKenna, L. (2022). Translation of research interviews: do we have a problem with qualitative rigor? *Nurse Author & Editor*, *32*(1), 1–3. https://doi.org/10.1111/nae2.31

Mero-Jaffe, I. (2011). 'Is that what I said?' Interview transcript approval by participants: an aspect of ethics in qualitative research. *International Journal of Qualitative Methods*, *10*(3), 231–247. https://doi.org/10.1177/160940691101000304

Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education*. Jossey-Bass Publishers.

Mesec, B. (1988). Vrste akcijskih raziskav [Types of action research]. *Socialno Delo*, *27*(2), 93–102. Retrieved from https://www.dlib.si/details/URN:NBN:SI:doc-L4DV4RDN

Miles, M. B., & Huberman, M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Sage Publications, Inc.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Miles, M. B., Huberman, A. M., & Saldana, J. (2018). *Qualitative Data Analysis: A Methods Sourcebook*. Sage Publications.

Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of Case Study Research*. Vol. 2. Sage Publications. https://doi.org/10.4135/9781412957397

Mills. J., Birks, M., & Hoare. K. J. (2014). Grounded Theory. In J. Mills, & M. Birks (Eds.), *Qualitative Methodology: A Practical Guide* (pp. 107–121). London: Sage Publications Ltd.

Milutinovic, R., & Stosic, B. (2013). Key elements of innovation project management in services. *Management*, *18*(69), 65–74. https://doi.org/10.7595/management.fon.2013.0027

Ministry of Cabinet Affairs. (2015). *UAE National Innovation Strategy*. Retrieved, 12 April, from https://www.moei.gov.ae/assets/download/1d2d6460/National%20Innovation%20Strategy.pdf.aspx

Ministry of Defence. (2020). *How Defence Works*. Retrieved 25 January, 2022, from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/920219/20200922-How_Defence_Works_V6.0_Sep_2020.pdf

Ministry of Defense. (n.d.). *The Kuwaiti Ministry of Defense*. Retrieved 24 January, 2022, from https://www.mod.gov.kw/webcenter/portal/MOD

Minnis, M., & John-Steiner, V. P. (2011). Review: are we ready for a single, integrated theory? Essay review of Perspectives on Activity Theory Edited by Yrjö Engeström, Reijo Miettinen, and Raija-Leena Punamäki. *Human Development*, *44*(5), 296–310. S. Karger AG. Retrieved 5 September, 2022, from http://lchc.ucsd.edu/mca/Paper/00_01/AT_Vera.htm

Modara, M., Bennet, A., & Ribiere, V. (2020). The collaborative roles of the government and private sector to foster innovation in Bahrain. *World Journal of Science, Technology and Sustainable Development*, *17*(1), 112–124. https://doi.org/10.1108/WJSTSD-07-2019-0044

Moran, D. (2000). *Introduction to Phenomenology*. Routledge.

Morris, D. M. (2018). Innovation and productivity among heterogeneous firms. *Research Policy*, *47*(10), 1918–1932. https://doi.org/10.1016/j.respol.2018.07.003

Motoyama, Y., Muntean, S. C., Knowlton, K., & Ozkazanc-Pan, B. (2021). Causes of the gender divide within entrepreneurship ecosystems. *Local Economy*, *36*(3), 187–204. https://doi.org/10.1177/0269094221995783

Moussa, M., McMurray, A., & Muenjohn, N. (2018). Innovation in public sector organisations. *Cogent Business and Management*, *5*(1). https://doi.org/10.1080/23311975.2018.1475047

Mursu, Á., Luukkonen, I., Pentikäinen, T., & Korpela, M. (2007). Activity theory in information systems research and practice: theoretical underpinnings for an information systems development model. *Information Research*, *12*(3). Retrieved from https://www.researchgate.net/profile/Mikko-Korpela-3/publication/28155505_Activity_Theory_in_information_systems_research_and_practice_Theoretical_underpinnings_for_an_information_systems_development_model/links/5880a03eaca272de1a40fb6a/Activity-Theory-in-information-systems-research-and-practice-Theoretical-underpinnings-for-an-information-systems-development-model.pdf

Muse, W. V., & Kegerreis, R. J. (1969). Technological innovation and marketing management: implications for corporate policy. *Journal of Marketing*, *33*(4), 3–9. https://doi.org/10.2307/1248666

Myers, M., & Newman, M. (2007). The qualitative interview in IS research: examining the craft. *Information and Organization*, *17*, 2–26. https://doi.org/10.1016/j.infoandorg.2006.11.001

Nardi, B. A. (1996). Activity Theory and Human Computer Interaction. In B. A. Nardi (Ed.), *Context and Consciousness: Activity Theory and Human-Computer Interaction* (pp. 1–8). Cambridge, MA: The MIT Press.

National Academy of Sciences. (2014). *The Context of Military Environments*. Retrieved 30 December, 2020, from https://www.nap.edu/read/18825/chapter/1

Neubauer, B. E., Witkop, C. T., & Varpio, L. (2019). How phenomenology can help us learn from the experiences of others. *Perspectives on Medical Education*, *8*, 90–97. https://doi.org/10.1007/s40037-019-0509-2

Nguyen, M., Whitehead, L., Dermody, G., & Saunders, R. (2022). The use of theory in qualitative research: challenges, development of a framework and exemplar. *Journal of Advanced Nursing*, *78*, e21–e28. https://doi.org/10.1111/jan.15053

Noble, H., & Mitchell, G. (2016). What is grounded theory? *Evidence Based Nursing*, *19*(2), 34–35. https://doi.org/10.1136/eb-2016-102306

Norek, T. (2013). Problems of innovation diffusion among companies from Western Pomerania region: results of empirical research. *Service Management*, *11*, 53–65.

Nunes, M., & Abreu, A. (2020). Managing open innovation project risks based on a social network analysis perspective. *Sustainability*, *12*, 31–32. https://doi.org/10.3390/su12083132

O'Connor, K. (2015). *The International Encyclopedia of Language and Social Interaction*. K. Tracy, C. Ilie, & T. Sandel (Eds.), John Wiley & Sons, Inc.

O'Dwyer, L. (2004). *A Critical Review of Evidence-Based Policy Making*. AHURI Final Report 58. Australian Housing and Urban Research Institute Limited.

Office of the Government Chief Information Officer. (2018). *E-Government Infrastructure Services*. Retrieved 30 January, 2020, from https://www.ogcio.gov.hk/en/our_work/infrastructure/e_government/egis/e-gov_infrastructure_service.html

Oman Investment Authority. (2020). *Our People*. Retrieved, 12 April, from https://oia.gov.om/Index.php?r=en%2Fsite%2Findex

Omar, A. S., Bhat, R. N., Shahid, A. S., & Aseem, A. (2006). Land and vegetation degradation caused by military activities: a case study of the Sabah Al-Ahmed Nature Reserves of Kuwait. *European Journal of Scientific Research*, *14*(1), 146–158.

Organisation for Economic Co-operation and Development [OECD]. (2019). *Smart Cities and Inclusive Growth: Building on the Outcomes of the 1st OECD Roundtable on Smart Cities and Inclusive Growth*. Retrieved 19 February, 2022, from https://www.oecd.org/cfe/cities/OECD_Policy_Paper_Smart_Cities_and_Inclusive_Growth.pdf

Organisation for Economic Co-operation and Development [OECD]. (2021). *OECD Reviews of Innovation Policy: Kuwait 2021*. Retrieved 13 April, 2022, from https://doi.org/10.1787/49ed2679-en

Organisation for Economic Co-operation and Development [OECD] and Eurostat. (2018). *Oslo Manual: Guidelines for Collecting, Reporting and Using Data on Innovation* (4th ed.). Paris; Luxembourg: OECD; Eurostat.

Otto, J., Peters, J. Z., O'Gallagher, G. K., Stewart, T. L., Campbell, M. S., Bush, N., Belsher, B. E., & Evatt, D. P. (2019). Evaluating measures of combat deployment for U.S. Army personnel using various sources of administrative data. *Annals of Epidemiology*, *35*, 66–72. https://doi.org/10.1016/j.annepidem.2019.04.001

Ovuakporie, O. D., Pillai, K. G., Wang, C., & Wei, Y. (2021). Differential moderating effects of strategic and operational reconfiguration on the relationship between open innovation practices and innovation performance. *Research Policy*, *50*(1), 104146. https://doi.org/10.1016/j.respol.2020.104146

Owles, E. (2017, 12 June). G.E.'s History of Innovation. *The New York Times*. Retrieved from https://www.nytimes.com/2017/06/12/business/general-electric-history-of-innovation.html

Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. T. (2016). Design: selection of data collection methods. *Journal of Graduate Medical Education*, *8*(2), 263–264. https://doi.org/10.4300/JGME-D-16-00098.1

Parkinson, P. (2015, February). Safety, Security, and Multi-core. White Paper. *Wind River Systems*. Retrieved 10 March, 2022, from https://events.windriver.com/wrcd01/wrcm/2015/02/Safety-Security-and-Multi-core-White-Paper.pdf

Parlett, M., & Hamilton, D. (1972). *Evaluation as Illumination: A New Approach to the Study of Innovatory Programs*. Centre for Research in the Educational Sciences, University of Edinburgh.

Patten, E., & Parker, K. (2011, 22 December). Women in the U.S. Military: Growing Share, Distinctive Profile. *Pew Research Center*. Retrieved from https://www.pewresearch.org/social-trends/2011/12/22/women-in-the-u-s-military-growing-share-distinctive-profile/

Polit, D., & Hungler, B. (2004). *Nursing Research: Principle and Method* (6th ed.). Lippincott Company.

Pollok, P., Lüttgens, D., & Piller, F. T. (2019). How firms develop capabilities for crowdsourcing to increase open innovation performance: the interplay between organizational roles and knowledge processes. *Journal of Product Innovation Management*, *36*(4), 412–441. https://doi.org/10.1111/jpim.12485

Popescu, F. (2019). From the IoT to the IoBT. The path to superior situational understanding. *Land Forces Academy Review*, *4*(96), 276–282. https://doi.org/10.2478/raft-2019-0034

Potter, J., & Wetherell, M. (1994). Analyzing Discourse. In A. Bryman, & B. Burgess (Eds.), *Analyzing Qualitative Data*. Routledge.

PriceWaterhouseCoopers. (2015). *Kuwait: Public Private Partnership Law - an Introduction*. Retrieved 12 April, 2022, from https://www.pwc.com/m1/en/tax/documents/2015/kuwait-public-private-partnership-law.pdf

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, *3*(9), 369–386. https://doi.org/10.46827/ejes.v0i0.1017

Ramadhan, M., Hussain, H., & Al-Hajji, R. (2013). Limitations of Kuwait's economy: an absorptive capacity perspective. *Journal of Modern Economy*, *4*(5), 412–417. https://doi.org/10.4236/me.2013.45043

Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, *27*(1), 22–42. https://doi.org/10.1016/j.jsis.2017.07.002

Reid, K., Flowers, P., & Larkin, M. (2005). Exploring the lived experience. *The Psychologist*, *18*(1), 20–23. Retrieved from https://www.researchgate.net/publication/221670347_Exploring_lived_Experience/link/0922b4f57ab3ca3a29000000/download

Reis, J., Cohen, Y., Melão, N., Costa, J., & Jorge, D. (2021). High-tech defense industries: developing autonomous intelligent systems. *Applied Sciences*, *11*(11), 4920. https://doi.org/10.3390/app11114920

Rivers, C., Calic, J., & Tan, A. (2009). Combining activity theory and grounded theory for the design of collaborative interfaces. *Lecture Notes in Computer Science: Human Centred Design*, *5619*, 312–321. HCI International 2009. San Diego, CA, 19–24 July. https://doi.org/10.1007/978-3-642-02806-9_36

Robson, C., & McCartan, K. (2016). *Real World Research* (4th ed.). John Wiley & Sons Ltd.

Rogers, E. M. (1983). *Diffusion of Innovations*. Free Press; Collier Macmillan.

Rogers, E. M. (1995). *Diffusion of Innovations: Modifications of a Model for Telecommunications* (4th ed.). Free Press.

Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Simon and Schuster.

Rogers, E. M. (2010). *Diffusion of Innovations*. Simon and Schuster.

Roschelle, J. (1998). Activity theory: a foundation for designing learning technology?. *Journal of the Learning Sciences*, *7*(2), 241–255. https://doi.org/10.1207/s15327809jls0702_5

Roth, W.-M., & Lee, Y.-J. (2007). "Vygotsky's neglected legacy": cultural-historical activity theory. *Review of Educational Research*, *77*(2), 186–232. https://doi.org/10.3102/0034654306298273

Rouncefield, M. (2011). Fieldwork, Ethnography and Ethnomethodology. In *LSCITS Socio-Technical Systems Engineering Handbook*. University of St Andrews. Retrieved 1 September, 2022, from http://archive.cs.st-andrews.ac.uk/STSE-Handbook/

Roundy, P. T., & Fayard, D. (2019). Dynamic capabilities and entrepreneurial ecosystems: the micro-foundations of regional entrepreneurship. *The Journal of Entrepreneurship*, *28*(1), 94–120. https://doi.org/10.1177/0971355718810296

Rouse, M. (2018). *Innovation Management*. Retrieved 4 February, 2020, from https://searchcio.techtarget.com/definition/innovation-management

Rousseau, O. (2019, 19 February). Phase 1 Construction Scope of Kuwait's $86bn Silk City Revealed. *Construction Week*. Retrieved from https://www.constructionweekonline.com/projects-tenders/169462-phase-1-construction-scope-of-kuwaits-86bn-silk-city-revealed

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *Turkish Online Journal of Educational Technology*, *5*(2),14–23. Retrieved from https://www.researchgate.net/publication/284675572_Detailed_review_of_Rogers'_diffusion_of_innovations_theory_and_educational_technology-related_studies_based_on_Rogers'_theory/link/585d259808ae6eb8719ff2fe/download

Saldana, J. (2008). An Introduction to Codes and Coding. In A. Strauss (Ed.), *Qualitative Analysis for Social Scientists.* Retrieved 25 January, 2020, from https://www.sagepub.com/sites/default/files/upm-binaries/24614_01_Saldana_Ch_01.pdf

Saldaña, J. (2016). *The Coding Manual for Qualitative Researchers*. Sage Publications Ltd.

Sam, C. (2012). Activity theory and qualitative research in digital domains. *Theory into Practice*, *51*(2), 83–90. https://doi.org/10.1080/00405841.2012.662856

Sanchez, B., & Fanise, N. (2013). *Impact of Managerial Innovation on Corporate Social Responsibility: Ikea Case Study Analysis.* (Master's degree thesis). Retrieved 4 February, 2020, from http://urn.kb.se/resolve?urn=urn:nbn:se:kau:diva-28661

Saritas, O., & Burmaoglu, S. (2017). Changing characteristics of warfare & the future of military R&D. *Technological Forecasting and Social Change*, *116*, 151–161. https://doi.org/10.1016/j.techfore.2016.10.062

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Pearson Education.

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students* (7th ed.). Harlow: Pearson Education Limited.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research Methods for Business Students* (8th ed.). Pearson Education.

Sawyer, J. (2014). Vygotsky's Revolutionary Theory of Psychological Development. *International Socialist Review*. Retrieved 12 April, 2022, from https://isreview.org/issue/93/vygotskys-revolutionary-theory-psychological-development/index.html

Saxenian, A. (1994, 1 February). Silicon Valley Versus Route 128: A Look at How Companies Are Shaped by the Business and Social Cultures Around Them. *Inc Magazine*. Retrieved from https://www.inc.com/magazine/19940201/2758.html

Schierz, G. P., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: an empirical analysis. *Electronic Commerce Research and Applications*, *9*(3), 209–216. https://doi.org/10.1016/j.elerap.2009.07.005

Schweitzer, F., Palmié, M., & Gassmann, O. (2018). Beyond listening: the distinct effects of proactive versus responsive customer orientation on the reduction of uncertainties at the fuzzy front end of innovation. *R&D Management*, *48*(5), 534–551. https://doi.org/10.1111/radm.12252

Schumpeter, J. (1934). *The Theory of Economic Development*. Harvard University Press.

Schutt, R. K. (2012). *Investigating the Social World: The Process and Practice of Research*. Sage Publications, Inc.

Seaman, J. (2008). Adopting a grounded theory approach to cultural-historical research: conflicting methodologies or complementary methods?. *The International Journal of Qualitative Methods*, *7*(1), 1–17. https://doi.org/10.1177/160940690800700101

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach* (4th ed.). John Wiley and Sons.

Sekgweleo, T., Makovhololo, P., & Iyamu, T. (2017). The connectedness in selecting socio-technical theory to underpin information systems studies. *Journal of Contemporary Management*, *14*(1), 1097–1117. Retrieved from https://journals.co.za/doi/abs/10.10520/EJC-b03321674

Sertin, C. (2019, 30 July). Kuwait Reports $60.7bn Oil Revenue in Fiscal Year 2018. *Oil & Gas Middle East*. Retrieved from https://www.oilandgasmiddleeast.com/drilling-production/34653-kuwait-reports-607bn-oil-revenue-in-fiscal-year-2018

Seng, A. H. W. (2016). Cyber attacks and the roles the military can play to support the national cyber security efforts. *Pointer, Journal of the Singapore Armed Forces*, *42*(3), 27–37. Retrieved 6 April, 2022, from https://www.mindef.gov.sg/oms/safti/pointer/documents/pdf/v42n3%204%20Cyber%20Attacks%20and%20the%20Roles%20the%20Military%20can%20play.pdf

Sezal, M. A., & Giumelli, F. (2022). Technology transfer and defence sector dynamics: the case of the Netherlands. *European Security*. https://doi.org/10.1080/09662839.2022.2028277

Shang, J., Wang, Z., Li, L., Chen, Y., & Li, P. (2018). A study on the correlation between technology innovation and the new-type urbanization in Shaanxi province. *Technological Forecasting and Social Change*, *135*, 266–273. https://doi.org/10.1016/j.techfore.2018.04.029

Shawki, S. (2019). *Powering Kuwait's Economy to 2035 and Beyond*. Retrieved 4 February, 2020, from https://www.pwc.com/m1/en/media-centre/articles/powering-kuwaits-economy-to-2035-and-beyond.html

Sheehan, M., Garavan, T. N., & Carbery, R. (2014). Innovation and human resource development (HRD). *European Journal of Training and Development*, *38*(1/2), 2–14. https://doi.org/10.1108/EJTD-11-2013-0128

Shultz, R. (2016). *Military Innovation in War: It Takes a Learning Organization*. Joint Special Operations University Report.

Simeonova, B. (2018). Transactive memory systems and Web 2.0 in knowledge sharing: a conceptual model based on activity theory and critical realism. *Information Systems Journal*, *28*(4), 592–611. https://doi.org/10.1111/isj.12147

Sjödin, D., Frishammar, J., & Thorgren, S. (2019). How individuals engage in the absorption of new external knowledge: a process model of absorptive capacity. *Journal of Product Innovation Management*, *36*(3), 356–380. https://doi.org/10.1111/jpim.12482

Smith, J. A. (1996). Beyond the divide between cognition and discourse: using interpretative phenomenological analysis in health psychology. *Psychology and Health*, *11*(2), 261–271. https://doi.org/10.1080/08870449608400256

Smith, J. A., Flower, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis: Theory, Method and Research*. Sage Publications, Inc.

Sobb, T., Turnbull, B., & Moustafa, N. (2020). Supply chain 4.0: A survey of cyber security challenges, solutions and future directions. *Electronics*, *9*(11), 1864. https://doi.org/10.3390/electronics9111864

Solider Center Public Affairs. (2018, 21 September). U.S. Army RDECOM Soldier Center Kicks Off Exoskeleton Engineering Analysis Project. *US Army*. Retrieved from https://www.army.mil/article/211445/u_s_army_rdecom_soldier_center_kicks_off_exoskeleton_engineering_analysis_project

Spasser, M. A. (1999). Informing information science: the case for activity theory. *Journal of the American Society for Information Science*, *50*(12), 1136–1138. https://doi.org/10.1002/(SICI)1097-4571(1999)50:12<1136::AID-ASI17>3.0.CO;2-0

Spinelli, E. (2005). *The Interpreted World: An Introduction to Phenomenological Psychology* (2nd ed.). Sage Publications, Inc.

Stake, R. E. (1995). *The Art of Case Study Research*. Sage Publications, Inc.

Stake, R. E. (2005). Qualitative Case Studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed., pp. 443–466). Thousand Oaks, CA: Sage Publications, Inc.

Stocker, M., Baffes, J., & Vorisek, D. (2018, 18 January). What Triggered the Oil Price Plunge of 2014-2016 and Why It Failed to Deliver an Economic Impetus in Eight Charts. *World Bank*. Retrieved from http://blogs.worldbank.org/developmenttalk/what-triggered-oil-price-plunge-2014-2016-and-why-it-failed-deliver-economic-impetus-eight-charts

Stošić, B., Vasiljević, D., & Milutinović, R. (2012). *The Role of Patent Indicators in Innovative Performance* [Conference paper]. Proceedings of the XIII International

Symposium: SYMORG 2012, Innovative Management and Business Performance. Zlatibor.

Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques.* Sage Publications, Inc.

Strauss, A., & Corbin, J. (1994). Grounded Theory Methodology. In *Handbook of Qualitative Research*, vol. 17, pp. 273–285.

Stern, P. N. (2007). On Solid Ground: Essential Properties for Growing Grounded Theory. In A. Bryant, & K. Charmaz (Eds.), *The Sage Handbook of Grounded Theory* (pp. 114–126). Los Angeles, CA: Sage Publications, Inc.

Su, Z., Chen, J., & Wang, D. (2018). Organisational structure and managerial innovation: the mediating effect of cross-functional integration. *Technology Analysis and Strategic Management*, *31*(3), 253–265. https://doi.org/10.1080/09537325.2018.1495324

Subramanian, A., & Nilakanta, S. (1996). Organizational innovativeness: exploring the relationship between organizational determinants of innovation, types of innovations, and measures of organizational performance. *Omega*, *24*, 631–647. https://doi.org/10.1016/S0305-0483(96)00031-X

Suciu, P. (2021, 23 December). Coming Soon: The Internet of Military Things. *The National Interest*. Retrieved from https://nationalinterest.org/blog/buzz/coming-soon-internet-military-things-198454

Suryani, A. (2013). Comparing case study and ethnography as qualitative research approaches. *Ilmu Komunikasi*, *5*(1), 117–127. https://doi.org/10.24002/jik.v5i1.221

Teece, D. J. (1980). The diffusion of an administrative innovation. *Management Science*, *26*(5), 464–470. https://www.jstor.org/stable/2630368

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., Robson., R., Thabane., M., Giangregorio, L., & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC Medical Research Methodology*, *6*(10), 1. https://doi.org/10.1186/1471-2288-10-1

The Department of State. (2021, 5 January). *U.S. Relations With Kuwait*. Retrieved from https://www.state.gov/u-s-relations-with-kuwait/

The Express Tribune. (2022, 13 October). Kuwait Allows Women to Join Military in Combat Roles. *The Express Tribune*. Retrieved from https://tribune.com.pk/story/2324635/kuwait-allows-women-to-join-military-in-combat-roles-1

The Global Economy. (n.d.). *Innovation Index in MENA*. Retrieved 4 April, 2022, from https://www.theglobaleconomy.com/rankings/gii_index/MENA/

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, *27*(2), 237–246. https://doi.org/10.1177/1098214005283748

Thomas, G. (2011). A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry*, *17*(6), 511–521. https://doi.org/10.1177/1077800411409884

Tidd, J., & Bessant, J. (2009). *Managing Innovation: Integrating Technological, Market and Organizational Change*. John Wiley and Sons Ltd.

Timonen, V., Foley, G., & Conlon, C. (2018). Challenges when using grounded theory. *International Journal of Qualitative Methods*, *17*(1), 1–10. https://doi.org/10.1177/1609406918758086

Tortonesi, M., Morelli, A., Govoni, M., Michaelis, J., Suri, N., Stefanelli, C., & Russell, S. (2016). *Leveraging Internet of Things Within the Military Network Environment — Challenges and Solutions* [Conference paper]. IEEE 3rd World Forum on Internet of Things. Reston, Virginia. https://doi.org/10.1109/WF-IoT.2016.7845503

Trantow, S., Hansen, A., Richert, A., & Jeschke, S. (2012). Emergence of Innovation – Eleven Strategies to Increase Innovative Capability. In S. Jeschke, I. Isenhardt, F. Hees, & K. Henning (Eds.), *Automation, Communication and Cybernetics in Science and Engineering 2011/2012, 10* (pp. 161–189). Retrieved 5 April, 2022, from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.8195&rep=rep1&type=pdf

Tsoukas, H., Sandberg, J., Fayard, A. L., & Zundel, M. (2020). Philosophy and organization studies: how does philosophy illuminate the study of organizations? *Journals Sage Publications*, *1*. Retrieved from https://journals.sagepub.com/pb-assets/cmscontent/OSS/SI_Philosophy_and_Organization_Studies-1587474206743.pdf

Tuohy, D., Cooney, A., Dowling, M., Murphy, K., & Sixmith, J. (2013). An overview of interpretive phenomenology as a research methodology. *Nurse Researcher*, *20*(6), 17–20. https://doi.org/10.7748/nr2013.07.20.6.17.e315

Ullrich, A., & Vladova, G. (2016). *Weighing the Pros and Cons of Engaging in Open Innovation, 6*. https://doi.org/10.22215/timreview/980

United Nations [UN]. (2017). *Innovation in the Public Sector*. United Nations.

United Nations [UN]. (2018). *Science and Technology Parks: Global Outlook with a Focus on the Arab Region*. Retrieved 19 February, 2022, from https://www.unescwa.org/sites/default/files/event/materials/science_and_technology_parks-global_outlook_with_a_focus_on_the_arab_region.pdf

United States Department of State. (n.d). *2021 Investment Climate Statements: Kuwait*. Retrieved 7 April, 2022, from https://www.state.gov/reports/2021-investment-climate-statements/kuwait/

United States Energy Information Administration. (n.d.). *Petroleum & Other Liquids: U.S. Crude Oil First Purchase Price*. Retrieved 12 April, 2022, from https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=f000000__3&f=m

Usunier, J.-C. (1998). *International and Cross-Cultural Management Research*. London: Sage Publications Ltd.

Vasan, A., Mahadeo, D. M., Doraiswami, R., Huang, H., & Pecht, M. (2013). Point-of-care biosensor system. *Frontiers in Bioscience*, *S5*(1), 39–71. https://doi.org/10.2741/s357

Vecchiato, R. (2017). Disruptive innovation, managerial cognition, and technology competition outcomes. *Technological Forecasting and Social Change*, *116*, 116–128. https://doi.org/10.1016/j.techfore.2016.10.068

Veer, T. H., Lorenz, A., & Blind, K. (2012). How open is too open? The 'dark side' of openness along the innovation value chain. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2148399

Vera, D., & Crossan, M. (2004). Strategic leadership and organizational learning. *Academy of Management Review*, *29*(2), 222–240. https://doi.org/10.2307/20159030

Vergun, D. (2013, 7 February). Secretary of Defense Rescinds 'Direct Ground Combat Definition and Assignment Rule'. *US Army*. Retrieved from https://www.army.mil/article/94932/secretary_of_defense_rescinds_direct_ground_combat_definition_and_assignment_rule

Vigoda-Gadot, E., Shoham, A., Schwabsky, N., & Ruvio, A. (2005). Public sector innovation for the managerial and the post-managerial era: promises and realities in a globalizing public administration. *International Public Management Journal*, *8*(1). 57–81. Retrieved from https://www.researchgate.net/publication/242325653_Public_Sector_Innovation_for_the_Managerial_and_the_Post-Managerial_Era_Promises_and_Realities_in_a_Globalizing_Public_Administration/link/0c960529871f9a03f8000000/download

Vinodrai. T., Nader, B., & Zavarella, C. (2021). Manufacturing space for inclusive innovation? A study of makerspaces in Southern Ontario. *Local Economy*, *36*(3), 205–223. https://doi.org/10.1177/02690942211013532

Visnjic, I., Ringov, D., & Arts, S. (2019). Which service? How industry conditions shape firms' service-type choices. *Journal of Product Innovation Management*, *36*(3), 381–407. https://doi.org/10.1111/jpim.12483

Waddington, K., & Fletcher, C. (2005). Gossip and emotion in nursing and health-care organizations. *Journal of Health Organization and Management*, *19*, 378–394. https://doi.org/10.1108/14777260510615404

Wadho, W., & Chaudhry, A. (2018). Innovation and firm performance in developing countries: the case of Pakistani textile and apparel manufacturers. *Research Policy*, *47*(7), 1283–1294. https://doi.org/10.1016/j.respol.2018.04.007

Waterman, A. (2004). *Diffusion of Innovations*. Retrieved 25 August, 2022, from: www.stanford.edu/class/symbsys205/Commentary-RogersDiffusionInnovations.html

Westall, S., & Hagagy, A. (2019, 1 May). Kuwait Plan for Northern Mega City Faces Political Hurdles. *Reuters*. Retrieved from https://www.reuters.com/article/us-kuwait-economy-idUSKCN1S73I2

Wertsch, J. V. (1991). *Voices of the Mind: A Sociocultural Approach to Mediated Action.* Cambridge, MA: Harvard University Press.

White, L., Burger, K., & Yearworth, M. (2016). Understanding behaviour in problem structuring methods interventions with activity theory. *European Journal of Operational Research*, *249*(3), 983–1004. https://doi.org/10.1016/j.ejor.2015.07.044

Whiteaker, J. (2020, 29 October). The State of Play: FDI in Kuwait. *Investment Monitor*. Retrieved from https://www.investmentmonitor.ai/sectors/extractive-industries/the-state-of-play-fdi-in-kuwait

Wilhelmy, A., Kleinmann, M., König, C., Melchers, K., & Truxillo, D. (2016). How and why do interviewers try to make impressions on applicants? A qualitative study. *Journal of Applied Psychology*, *101*, 313–332. https://doi.org/10.1037/apl0000046.

Williams, S., & Wallace, M. (2017). *Jaber-Al-Ahmad-Presentation*. Retrieved 30 January, 2020, from https://www.ukihma.co.uk/wp-content/uploads/2017/12/20171108-Jaber-Al-Ahmad-Presentation.pdf

Willis, J. W. (2007). *Foundations of Qualitative Research: Interpretive and Critical Approaches*. Thousand Oaks, CA: Sage Publications, Inc.

Wolfe, R. A. (1994). Organizational innovation: review, critique and suggested research directions. *Journal of Management Studies*, *31*(3), 405–431. https://doi.org/10.1111/j.1467-6486.1994.tb00624.x

World Bank. (2016). *How is Kuwait Reacting to Low Oil Prices*? Retrieved 4 February, 2020, from https://www.worldbank.org/en/country/gcc/publication/economic-brief-july-2016

World Bank. (2018). Deepening reforms. In focus: pension systems in the Gulf. *Gulf Economic Monitor*, *2*, 1–46. Retrieved 6 April, 2022, from https://documents.worldbank.org/curated/en/561441521461573349/pdf/124396-WP-PUBLIC-GEM-February-2018.pdf

World Bank. (2019). *Kuwait - Ease of doing Business Index*. Retrieved 4 February, 2020, from https://www.indexmundi.com/facts/kuwait/ease-of-doing-business-index

World Bank. (2021). *Military Expenditure (% of GDP) - Kuwait*. Retrieved 8 December, 2021, from https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=KW

World Economic Forum. (n.d.). *Visa*. Retrieved 4 April, 2022, from http://web.worldbank.org/archive/website00818/WEB/OTHER/VISA_INT.HTM

World Intellectual Property Organization. (2021). *Global Innovation Index 2021: Innovation Investments Resilient Despite COVID-19 Pandemic; Switzerland, Sweden, U.S., U.K., & the Republic of Korea Lead Ranking; China Edges Closer to Top 10*. Retrieved 19 February, 2022, from https://www.wipo.int/pressroom/en/articles/2021/article_0008.html

Wynen, J., Verhoest, K., Ongaro, E., van Thiel, S., & the COBRA Network. (2013). Innovation-oriented culture in the public sector: so managerial autonomy and result control lead to innovation? *Public Management Review*, *16*(1), 45–66. https://doi.org/10.1080/14719037.2013.790273

Xie, Z., Hall, J., McCarthy, I. P., Skitmore, M., & Shen, L. (2016). Standardization efforts: the relationship between knowledge dimensions, search processes and innovation outcomes. *Technovation*, *48–49*, 69–78. https://doi.org/10.1016/j.technovation.2015.12.002

Yamazumi. K. (2006). Activity theory and the transformation of pedagogic practice. *Educational Studies in Japan: International Yearbook, 1*, 77–90. Retrieved from https://www.researchgate.net/profile/Katsuhiro-Yamazumi/publication/325985388_Activity_Theory_and_the_Transformation_of_Pe

dagogic_Practice/links/5c190220a6fdccfc7056b288/Activity-Theory-and-the-Transformation-of-Pedagogic-Practice.pdf

Yang, T.-M., & Maxwell, T. A. (2011). Information-sharing in public organizations: a literature review of interpersonal, intra-organizational and inter-organizational success factors. *Government Information Quarterly*, *28*(2), 164–175. https://doi.org/10.1016/j.giq.2010.06.008

Yin, R. K. (2009). *Case Study Research: Design and Methods* (4th ed.). Sage Publications, Inc.

Yin, R. K. (2014). *Case Study Research: Design and Method* (5th ed.). London: Sage Publications Ltd.

Yin, R. K. (2016). *Qualitative Research from Start to Finish* (2nd ed.). The Guildford Press.

Yin, R. K. (2018). *Case Study Research and Applications* (6th ed.). Sage Publications, Inc.

Zamri, F. I. M., Hibadullah, S. N., Fuzi, N. M., Desa, A. F. N. C., & Habidin, N. F. (2013). Green Lean Six Sigma and managerial innovation in Malaysian automotive industry. *International Journal of Innovation and Applied Studies*, *4*(2), 366–374. Retrieved from https://www.researchgate.net/publication/260985981_Green_Lean_Six_Sigma_and_Managerial_Innovation_in_Malaysian_Automotive_Industry

Zhang, K., Ao, Z., Tang, C., Wang, Y., Zhu, W., & Feng, B. (2012). *Application of Internet of Things in Combined Operation Logistics Support*. [Conference paper]. 4th International Conference on Computational and Information Sciences. Stockholm. https://doi.org/10.1109/ICCIS.2012.82

Zott, C., & Amit, R. (2010). Business model design: an activity system perspective. *Long Range Planning*, *43*(2–3), 216–226. https://doi.org/10.1016/j.lrp.2009.07.004

Zundel, M., & Kokkalis, P. (2010). Theorizing as engaged practice. *Organization Studies*, *31*(9–10), 1209–1227. https://doi.org/10.1177/0170840610374405