Informal Learning in the Workplace: A case study in Qatar

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ABSTRACT

Learning is one of the core elements that progressively supports individuals' and teams' short- and long-term development in organisations. It can be either be formal, following a structured and aided approach driven by organisations themselves, or informal learning that often has no defined structure and this makes it phenomenologically more complex. Conceptually, informal learning is referred to as an unstructured approach based on different activities that can occur at individual, dyadic or team levels. Although many studies have explored different approaches and models for informal learning in organisations, limited evidence has elaborated on informal learning based on activities at different levels (individual, dyadic and team). The nature of informal learning remains complex, especially in developing regions such as the Middle East where there is a dearth of research on the subject. This study aims to provide an improved understanding of facilitating informal learning at three levels across teams (self-reflection (individual), managerial coaching (dyadic), and knowledge exchange (team)) in Qatar. The study is contextualised within a telecommunication company used as a case study.

To contextualise informal learning, mixed methods research was used to attain the primary data within the context of a case study. Data collection was conducted sequentially in two phases. Phase one used a questionnaire to examine the types of informal learning activities performed and the factors that influence informal learning practices with data collected from 47 teams and 47 supervisors from various departments. The quantitative analysis revealed that, with respect to informal learning, self-reflection as an informal learning activity is inversely related to team performance. Quantitative analysis also revealed that age and education level have an impact on different individuals in terms of pursuing informal learning. Phase one was concluded by positioning the 47 teams into a graphical form using scatter plots which classified teams across four different quadrants based on informal learning activity (self-reflection, managerial coaching and team knowledge exchange) vs. team performance. For Phase two, the data was collected using focus groups with 11 teams selected from the four quadrants. Thematic analysis was used where five themes were identified: trust and team bonding, leadership style, characteristics of a task, organisational characteristics, and motivations for informal learning. Through the themes, several factors (e.g. access to information, willingness to share knowledge) were identified, and later mapped to each informal learning activity.

The analysis also identified the interrelationship between different facilitators (referred to in this research as themes) toward informal learning activities. Therefore, this research puts forward an organisational framework of informal learning that supports an improved understanding of facilitating it. The theoretical contribution of this thesis is extending the impact of facilitators through understanding the harmonies between them in enabling different informal learning activities. The practical contribution lies in applying/testing the output from this research within similar contexts in Qatar and perhaps extending it to other countries in the Middle East and beyond.

Keywords: Informal learning, team performance, managerial coaching, self-reflection, team knowledge sharing, Qatar.

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Finally, the Prophet, may Allah bless him and grant him peace, said

"*Allah does not thank the person who does not thank people*."

CONTENTS

Copyright I
ABSTRACT II
ACKNOWLEDGEMENTS IV
CONTENTS V
CHAPTER 1: INTRODUCTION 1
1.1 Informal Learning: A New Lens on Workplace Learning 2
1.2 Informal Learning: Impact in the Workplace 5
1.3 Informal Learning: Drivers in Workplace 6
1.4 The State of Qatar 8
1.4.1 The status of the telecommunication organisations in Qatar 9
1.4.2 Case-study organisation 10
1.5 Research Gap 11
1.6 Research Aims 12
1.7 Research Objectives 12
1.8 Significance of the Study 12
1.9 Research Outline 13
CHAPTER 2: LITERATURE REVIEW 15
2.1 Introduction 15
2.2 Workplace Learning 15
2.3 Formal Learning 17
2.4 Informal Learning 18
2.4.1 Concepts and definitions 20
2.4.3 The Dynamic Model 21
2.4.4 The Nomological Model 23
2.4.5. Other informal learning measures 25
2.4.6. Challenges facing informal learning in organisations 26
2.4.7 Summary on informal learning concepts and measures 28
2.5 Levels of Informal Learning Activities 29
2.5.1 Individual level activities 30
2.5.2 Dyadic level activities 30
2.5.3 Group level activities 31

2.6 Informal Learning and Team Performance 32
2.7 Facilitators/Barriers for Informal Learning 34
2.7.1 Characteristics of the task 35
2.7.2 Characteristics of the employees and demographics 37
2.7.3 Organisational characteristics 39
2.7.4 Top management support 40
2.7.5 Summary of facilitators and barriers 42
2.8 Conceptual Framework 42
CHAPTER 3: METHODOLOGY 45
3.1 Introduction 45
3.2 Research Philosophy 45
3.2.1 Introduction 45
3.2.2 Epistemology and ontology 46
3.2.3 The chosen research paradigm 47
3.3 Methodological Approach 49
3.3.1 Introduction 49
3.4 Research Design 50
3.5 Data Collection 52
3.5.1 Phase 1: Quantitative data 52
3.5.2 Phase 2: Qualitative data 65
3.6 Ethical Considerations 72
3.7 Summary and Conclusion 73
CHAPTER 4: QUANTITATIVE DATA ANALYSIS 75
4.1 Introduction 75
4.2 Targeted Sample 75
4.3 Internal Reliability Calculation 77
4.3.1 Self-reflection 77
4.3.2 Managerial coaching 78
4.3.3 Team knowledge exchange 80
4.3.4 Reliability test: Cronbach's Alpha 81
4.4 Data Analysis (part 1): Extent of informal learning 82
4.5 Data Analysis (part 2): Informal Learning and Team Performance 84
4.5.1 R-test: team performance and informal learning activities 85

4.5.2 ANOVA results 86
4.5.3 Coefficient test 87
4.5.4 Correlation results 89
4.6 Key Analysis from Quantitative Data 92
4.7. Informal Learning and Team Performance: Use of scatter plots 93
4.8 Chapter Summary and Conclusions 97
CHAPTER 5: QUALITATIVE DATA ANALYSIS 99
5.1 Introduction 99
5.2 Focus Group Teams 99
5.3 Thematic Analysis 102
5.3.1 Identified themes 104
5.5 High Informal Learning High Performance 105
5.5.1 Trust and bond between team members 105
5.5.2 Leadership style 108
5.5.3 Characteristics of the tasks 110
5.5.4 Organisational characteristics 111
5.5.5 Motivation to informal learning 113
5.6 Low Informal Learning-Low Performance 115
5.6.1 Trust and bond between team members 115
5.6.2 Leadership style 117
5.6.3 Characteristics of the tasks 118
5.6.4 Organisational characteristics 120
5.6.5 Motivation to informal learning 121
5.7 Low Informal Learning-High Performance 122
5.7.1 Trust and bond between team members 122
5.7.2 Leadership style 124
5.7.3 Characteristics of the task 125
5.7.4 Organisational characteristics 128
5.7.5 Motivation to informal learning 132
5.8 Low Informal Activity-High Performance 133
5.8.1 Leadership style 133
5.8.2 Characteristics of the task 134
5.8.3 Organisational characteristics 136

5.8.4 Motivation to informal learning 137
5.9 Informal Learning Activities: does one size fit all? 138
5.9.1 Team knowledge Exchange 138
5.9.2 Managerial coaching 139
5.9.3 Self-reflection 140
5.10 Chapter Summary and Conclusion 141
CHAPTER 6. DISCUSSION 142
6.1 Introduction 142
6.2 Frequency of Different Informal Learning Activities and Impact on Team Performance 143
6.3 Facilitating Informal Learning: Influencing Factors 144
6.4 Facilitating Informal Learning: The Need for Holistic View 146
6.5 Conclusion 147
CHAPTER 7: CONCLUSION AND FUTURE WORK 149
7.1 Introduction 149
7.2 Self-Reflection 149
7.3 Research Objectives 153
7.4 Research Contributions 155
7.4.1 Theoretical contribution 155
7.4.2 Practical contribution 155
7.5 Limitations and Future Work 156
REFERENCES 158
APPENDIX 1: Four Pillars of the Qatar Vision 2030 (General Secretariat For Development Planning, 2008) 199
APPENDIX 2: A Map of the Six GCC Countries (Sawe, 2017) 200
APPENDIX 3: The Case-Study Company's Management Team's Invitation to all Employees Supporting the Research 201
APPENDIX 4: Email Invitation Template Sent by the Researcher to all Employees and Supervisors (Source: The Researcher, 2018) 203
APPENDIX 5: Generic Questions for Employees and Supervisors 204
APPENDIX 6: Questions for Employees other than Supervisors 206
APPENDIX 7: The Supervisor Survey 210

APPENDIX 8: The Email Invitation Template that Sent to all Team Supervisors prior the Commencement of the 2nd Phase (Focus Group) 212
APPENDIX 9: Focus Group Questions/Theoretical framework 213

LIST OF FIGURES

Figure 1.1. Spending and outcomes paradox (Source: Cross, 2007:235)
Figure 1.2. Crude oil prices in 2015 (Breul, 2016:1)
Figure 2.1. Dynamic Learning Model. (Source: Patterson et al., 2017, based on Tannenbaum *et al*., 2009)
Figure 2.2. Nomological Dynamic Learning Model. Source: Decius *et al*. (2019)
Figure 2.3. Conceptual framework for the study
Figure 3.1. Research design for this research
Figure 3.2. Flow Diagram of Quantitative Data Collection (Phase one) within the study.
Figure 3.3. Informal learning: Team Performance Matrix.
Figure 4.1. Extent of Informal Learning levels' occurrence per team.
Figure 4.2. Informal learning: Team performance matrix
Figure 4.3. Scatter plot for team performance: Team knowledge exchange
Figure 4.4. Scatter plot for team performance and self-reflection
Figure 4.5. Scatter plot for team performance and managerial coaching
Figure 5.1. Team performance and self-reflection
Figure 5.2. Team performance and managerial coaching
Figure 5.3. Team performance and team knowledge exchange
Figure 5.4: Process followed for the thematic analysis using data collected from the focus groups.
Figure 5.5. Themes (facilitators/barriers) and the resulting factors with relation to team knowledge.
Figure 5.6. Themes (facilitators/barriers) and the resulting factors with relation to managerial coaching
Figure 5.7. Themes (facilitators/barriers) and the resulting factors with relation to self-reflection
Figure 6.1. Developed framework to facilitate informal learning in organisations

LIST OF TABLES

Table 3.1. Measures used in the survey based on Yang & Johnson's (2012) study.
Table 3.2. Items used in self-reflection section (Kember *et al*., 2000; Yang & Johnson, 2012).
Table 3.3. Items used in the managerial coaching section (Mclean *et al*., 2005; Yang & Johnson, 2012).
Table 3.4. Items used in the team learning section (Van den Bossche, 2006; Yang & Johnson, 2012).
Table 3.5. Items used to measure team performance (Yang & Johnson, 2012; Janz *et al*., 1997).
Table 3.6. Summary of the four quadrants.
Table 4.1. Demographic characteristics.
Table 4.2. Constructs for measuring self-reflection.
Table 4.3. Constructs for measuring managerial coaching.
Table 4.4. Constructs under team knowledge exchange.
Table 4.5. Cronbach's Alpha values of the three informal learning activities.
Table 4.6. Informal learning activities statistics.
Table 4.7. Relationship test summary between team performance and informal learning activities.
Table 4.8. ANOVA test results.
Table 4.9. Coefficients output.
Table4.10. Correlation results.
Table 4.10. Regression results.
Table 5.1. Summarised statistics.
Table 5.2. Summary of the four quadrants.
Table 5.3. The process of line-by-line coding.

LIST OF APPENDICES

APPENDIX 1: Four Pillars of the Qatar Vision 2030 (General Secretariat For Development Planning, 2008) 199
APPENDIX 2: A Map of the Six GCC Countries (Sawe, 2017) 200
APPENDIX 3: The Case-Study Company's Management Team's Invitation to all Employees, Supporting the Research 201
APPENDIX 4: Email Invitation Template Sent by the Researcher to all Employees and Supervisors (Source: The Researcher, 2018) 203
APPENDIX 5: Generic Questions for Employees and Supervisors 204
APPENDIX 6: Questions for Employees other than Supervisors 206
APPENDIX 7: The Supervisor Survey 210
APPENDIX 8: The Email Invitation Template Sent to all Team Supervisors prior the Commencement of the second Phase (Focus Group) 212
APPENDIX 9: Focus Group Questions/Theoretical framework 213

CHAPTER 1: INTRODUCTION

Learning not only increases the skills and knowledge of employees but also contributes significantly to the competitiveness of firms in their sector. It assists in the development and sustainability of strategies that enhance organisational competitiveness (CIPD, 2015). It has been posited that learning enhances the stability and consistency of organisations' success (Saadat & Saadat, 2016). One of the main aims of learning is improvement and continual development of performance (Guzzo & Dickson, 1996). It plays a key role in facilitating the flexibility and growth required for the establishment and development of a dynamic organisation.

A variety of new workplace-learning methods has drawn the attention of scholars away from the traditional learning methods of workforce development (Manuti *et al*., 2015; Lavenberg & Caspi, 2010) to being broadly classified under formal or informal learning. In many organisations, learning is through a combination of formal and informal means (Manuti *et al*., 2015; Nfoudi & Shipton, 2020). These terms have been used in diverse contexts to describe the development of the skills and knowledge necessary for organisations' long-term profitability, productivity, and sustainability (Cerasoli *et al*., 2017). To permit a clearer explanation of the concepts of informal and formal learning, a definition of these concepts is proposed. Within this study, formal learning is used to describe knowledge gained as a result of organised learning activities such as attending training, prescribed skill improvement activities or classes. Informal learning refers to activities that takes place at different levels: team, dyadic, and individual (Manuti *et al*., 2015; Armstrong & Taylor, 2014; Cunningham & Hillier, 2013; Eraut, 2004), to support learning development in an organisation.

It is key to understand that informal learning does not occur at a single level because this allows a more-holistic consideration of the different facilitators and barriers that need to be overcome. This is one of the main rationales for this research work. Therefore, informal learning will be referred to here *as an unstructured approach toward learning* which is based on different activities that occur at individual, dyadic and team levels.

It is imperative to note that research on informal learning is not as widely recognised as the research depicting formal learning as a validated form of learning in organisations (Bancheva & Ivanova, 2015). Over the years, researchers and practitioners have continually sought to

conceptualise an inclusive definition for informal learning but the concept remains highly dependent on perspective and subjective viewpoints (Armstrong & Taylor, 2014; Cunningham & Hillier, 2013). Therefore it is difficult to evaluate it. In fact, informal learning practices do not typically involve external assessments which complicates their evaluation and improvement (Rogoff *et al*., 2016).

Understanding the circumstances of workplace learning is crucial, as it cannot be separated from its economic and social context (Cullen *et al*., 2002). The defining characteristics of learning, work, and knowledge, and their influences on individuals as they conceptualise workplace learning, must be included in any comprehensive investigation of the topic. Current research as part of learning and Human Resources Management (HRM) practices has focused on informal learning procedures in organisations (Decius *et al*., 2019; Kyndt & Baert, 2013) within the context of the developed countries (e.g. Western countries); there is less knowledge on informal learning procedures in developing countries such as in the Middle East, especially as compared to studies of formal learning. The present study seeks to bridge this gap in the body of knowledge by exploring the effect of informal learning activities on teams' performance in a case study organisation in Qatar. The study also determines several variables that could act as drivers for informal learning including personal, work environment and task factors (Kwakman, 2003).

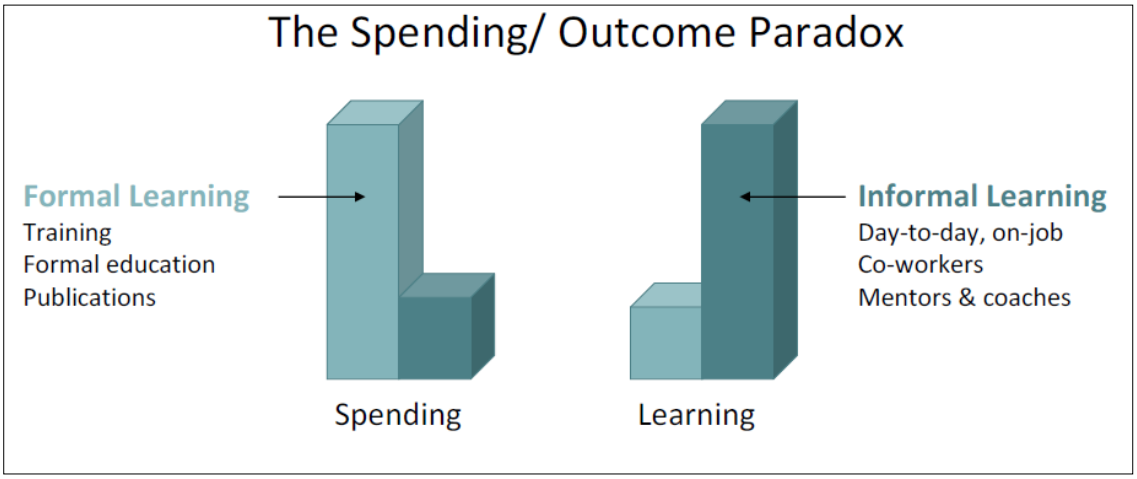
This chapter presents an overview of the research area tackled, commencing with the nature of learning in the workplace and followed by the importance, facilitators and barriers of informal learning. The case study selected for the research is outlined. The chapter then highlights the research gap, the aim and objectives and concludes by providing a structure of the thesis.

1.1 Informal Learning: A New Lens on Workplace Learning

Rafaele & Wojahn (2017) note that in the current business environment, workplace learning (whether formal or informal) is essential for enhancing the innovative capability of organisations and for facilitating the process changes necessary for continuous improvement. Over the years, with the evolvement of workplace learning, expenses associated with organisational training as part of formal learning are continuously increasing with figures from the Training Industry Report (Training Magazine, 2018) reporting an increase in total employee training expenditure in the US from US$55.4 billion in 2013 to US$93.6 billion in 2017.

Conversely, while informal learning is not easily assessed in organisations, it does not have high associated costs when compared with formal learning (Cross, 2007). In fact, a study by Cross (2007) has compared the spending/outcome between informal and formal learning within organisations (Figure 1.1). By reflecting on different organisations, the study, with respect to formal and informal learning, provided speculation on how formal learning may not necessarily aid development and knowledge growth. However, although informal learning is unstructured and does not follow a formal approach compared to formal learning, it can still potentially drive knowledge development and improvement. Although such study utilises slightly outdated data, no further study has been identified by the researcher that has speculatively compared cost-related considerations between formal and informal learning. This draws critical attention that corresponds to the research scope considered in this thesis and the rationale behind holistically investigating informal learning.

Figure 1.1. Spending and outcomes paradox (Source: Cross, 2007:235).



There are some studies in the literature that have attempted to evaluate the value of informal learning when compared to formal learning in organisations. Harp (2012) indicates that when comparing formal and informal learning based on their impact, informal learning contributes more significantly to learning within the work environment. For instance, a model proposed by McCall *et al*. (1980) at the Centre for Creative Leadership in the United States of America showed that formal learning only accounts for 10% of knowledge acquired at work whereas the majority of knowledge and skills are acquired in the work environment as a result of informal learning activities and this knowledge is practical and relevant to effective job performance (Janssens *et al*., 2017, p. 93; Watkins & Marsick, 1992). Many other studies have adopted this model to evidence that formal learning activities only provide between 10% and 20% of the skills that employees require for effective job performance (Cunningham & Hillier, 2013; Watkins & Marsick, 1992; Zemke, 1985). A recent study by Clardy (2018) has argued that the model may not be generalisable as the context of formal and informal learning may differ based on different organisations. Although Clardy (2018) has highlighted that the model proposed by McCall *et al*. (1980) lacked well-evidenced scientific research, this does not discard the vital role that informal learning has within organisations. Another survey conducted in Canada showed a reduction in training costs when employers relied more on informal learning (Hughes, 2009). Similarly, De Grip *et al*. (2016) report that informal learning is a significant driver of declining production costs within the manufacturing sector and of declining costs in service sector industries. Informal learning, beyond cost implications, also contributes to the development of learning and skills within organisations. This can perhaps be reasoned by the nature of informal learning as it takes several forms and practices such as conversation, social interaction, teamwork, and mentoring (Le Clus, 2011). Within the telecommunications sector, the skills required of employees are specialist in nature and comprise both traditional skills and specialist skills (Hendry *et al*., 2000). Critical skills are necessary within this sector because they substantially affect organisational capacity while traditional high-level skills are also required for telecommunications organisations to function and must be gained through established educational sources (Hendry *et al*., 2000).

Recently, the World Health Organisation (WHO) declared Covid-19 a pandemic (WHO, 2020) and many formal training providers, including universities around the world, had to shut down or provide only online training. The pandemic caused huge changes in many systems around the world, including systems for work and learning, and will cause even deeper changes in the

future (Robinson & Curtiss, 2020). This has led companies to rethink their practices to maintain the sustainability of their businesses and develop innovative ways to continue improving the capabilities of their staff in the absence of any formal learning during this period. This can be recognised when looking at many organisations and businesses that were affected and employees were consequently motivated to be more innovative and creative, hence rationalising the value of informal learning. The next section provides a more concise description of current informal learning facilitators and barriers of informal learning at the workplace.

1.2 Informal Learning: Impact in the Workplace

It is important to note that learning is not restricted to the classroom or other formal training environments. The contemporary professional development field is neither static nor composed of predefined entities (Manuti *et al*., 2015). Also, the role of informal training, although effective due to the practices it adopts (e.g. conversations and social interaction) to facilitate learning within organisational learning environments, is not well-incorporated when compared with traditional and/or formal training (Digenti, 2000). Early work by March & Olsen (1975) and Simon (1991) pointed out the traditional (cognitive) perspective of individual learning procedures in organisations. Learning is facilitated by social interaction and informal learning could be accelerated as a result of useful learning from social interactions (*Harris et al*., 2004). Guzzo & Dickson (1996) describe performance as incorporating a wide array of indicators which illustrates either negative or positive outcomes for an organisation or team in terms of productivity and financial growth among other metrics which could be used in judging an organisation's positioning compared to its competitors. Performance is often measured at a team level in organisations which portrays how an organisation continues to evolve and develop over time. The performance of teams, which correlates with the performance of individuals, remains one of the key concerns for every organisation (Sibarani *et al*., 2015), hence research is looking continually into strategies and mechanisms that support team performance. This becomes more challenging when exploring the impact of informal learning specifically on team performance.

The unstructured nature of informal learning poses a major challenge when attempting to assess whether it has an impact on team performance. Clarke (2005) highlighted that the inability to formalise assessment for informal learning can result in difficulty in proving its enhancement

of human resources or even improvement of different functions within organisations. Studies in the literature, although attempting to reflect the significance and value of informal learning in organisations, have not demonstrated how tangibly this can be used to gauge team performance (e.g. Sibarani *et al*., 2015; Choonara *et al*., 2017; Park and Choi, 2016*)*. This shows the need to look further into valid structures and mechanisms that support assessment of informal learning, as well as impact and effectiveness of activities undertaken within an organisation.

1.3 Informal Learning: Drivers in Workplace

There are many techniques that facilitate informal learning. Crouse *et al*. (2011) identified over 30 informal techniques which could be adopted within an organisation and these include, but are not limited to, doing new tasks, observation, reading, researching, vision, action and feedback. One of the most tangible efforts toward informal learning can be recognised in the Dynamic Model developed by Tannenbaum *et al*. (2009) which is designed to highlight the components that determine the effectiveness of informal learning within the institutional framework. An improved and more-overarching version of the dynamic model was developed by Decius *et al*. (2019) which is called Nomological Model. This represents an improved version of the dynamic model for informal learning and holistically measures the impact/effectiveness of informal learning within an organisation. The model identifies elements further to the four main components (experience/action, feedback, intent to learn and reflection) originally presented in the dynamic model. In recent years, and with the evolvement of technology across different sectors, many informal learning studies (Song & Lee, 2014; Wolfe & Cedillos, 2015; Zhao & Kemp, 2012) have discussed the role that Web 2.0-based learning, including electronic communication platforms and electronic learning, plays in supporting informal learning. Some organisations already recognise that knowledge and ideas can be easily shared through social media (Sedej & Justinek, 2013).

The literature also covers the barriers to informal learning in organisations, highlighting that there can be individual, group, and organisational barriers (Panagiotakopoulos, 2016). The individual barriers, including the especially important emotional barrier, are described as hidden barriers to learning. This barrier reflects how employees' fear of embarrassment, doubt, and feelings of inadequacy can compromise the learning process and limit the learning outcomes of an organisation (Nesvig, 2014). Group barriers include situational, institutional,

and dispositional barriers. Dispositional barriers involve employees' attitudes and how they influence learning and performance within the team while situational barriers refer to circumstances beyond the control of the employee (Crouse *et al*., 2011). A key group barrier is the lack of communication and support from co-workers, both of which play a key role in informal learning (Wahab *et al*., 2014). Noble & Hassell (2008) found that organisational barriers can limit informal learning activities in several ways which can be related to access to information, leadership style, and working mechanisms. Therefore, it can be stated that informal learning does not originate from a single particular thread of techniques in organisations but is perhaps an emerging element that occurs based on situations, drivers or even motivations at different levels of analysis from the individual through to the team. To contextualise facilitators and barriers toward informal learning in organisations, in this present study, the focus will be the following techniques: (1) self reflection, (2) managerial coaching, and (3) team knowledge exchange. These three techniques depict informal learning at the individual, dyadic, and group levels respectively (Yang & Johnson, 2012).

Existing research on informal learning is considerably limited in developing countries such as those in the Middle East when compared with developed countries (e.g. Western countries). This can perhaps be reasoned by the fact that learning in the Middle East tends to take formal approaches such as directed training which often is the approach used for learning and development in organisations. Although informal learning may exist at some level in some organisations in the Middle East, research in such area requires further investigation. There are many unique factors that are present within organisations in the Middle East including work culture, availability of information in the native language, hierarchal structure (often top-down) in organisations and, in some cases, religious constraints which do not allow different genders to work together. Informal learning in the Middle East can be beneficial as available expertise tends to rely heavily on international sources offering a sustainable solution. More importantly, expertise in organisations is not transferrable which means that employees, for instance those who work in the same team, can have major differences in skillsets in the long term which can, in turn, affect group dynamics, development, and performance over time. This rationalises the need to focus on developing countries, taking Qatar as the case study in this research.

1.4 The State of Qatar

Qatar aims to enhance its development and status as an international business hub through the launch of the Qatar National Vision 2030 (a government initiative). Qatar believes that it can build an economy that depends on human, as well as natural, resources through development in four main areas: social, economic, environmental, and human (see Appendix 1; General Secretariat for Development Planning, 2008). For human development, Qatar seeks to increase and diversify the contributions of the citizens of Qatar who are part of the labour force in the country by broadening the investment in the institutions mandated to train and certify for the various programs in the private and public corporations (Ministry of Development Planning and Statistics, 2018).

Qatar is a member of the Gulf Cooperation Council (GCC) which was established in 1981 and consists of six countries: the UAE, Oman, Kuwait, Saudi Arabia, Bahrain, and Qatar (see Appendix 2). The GCC was established to foster economic security and social co-operation between member states to allow them to face external threats especially after the Iraq and Iran war in 1980 (John, 2018). All of the member states share economic, political, and social challenges due to their geographic proximity and common economic system (Al-Jazeera, 2017). Moreover, the member states' economic systems rely heavily on oil and gas export revenues (hydrocarbon sources) which contribute significantly to each member state's gross domestic product (GDP; Laleman, 2018). For example, in Qatar, oil and gas revenues account for more than 50% of GDP (John, 2018). Consequently, GCC members, including Qatar, are highly vulnerable to any drop in the price of oil in the global market (John, 2018).

At the beginning of 2015, Brent crude oil prices fell sharply to US$40 per barrel, the lowest in five years (Breul, 2016; see Figure 1.2). The sharp drop in oil prices hurt Qatar by slowing economic growth, significantly decreasing government spending, and increasing public debt.

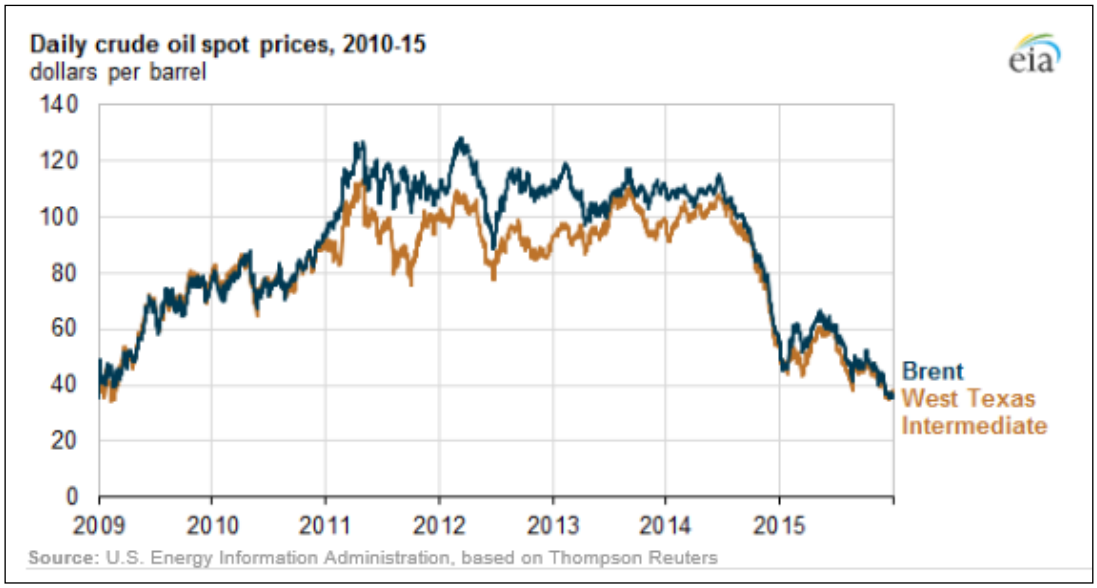


Figure 2.2. Crude oil prices (US$) in 2015 (Breul, 2016:1).

In 2017, a blockade, referred to as the Gulf Crisis (Meliksetian, 2019), was unexpectedly imposed on Qatar by four Arab countries. Recently, reports that Qatar is seriously considering withdrawing from the GCC (referred to in the news media as 'Qatexit') have become increasingly common (Toumi, 2018). This speculation comes after Qatar unexpectedly withdrew from the Organisation of Petroleum Exporting Countries (OPEC) in January 2019 (Koduvayur, 2018). These vast changes in the region's socio-political and economic environment have created numerous challenges for HRM functions (Budhwar *et al*., 2018). Moreover, lower oil prices have made GCC governments, including Qatar's, focus mainly on expenditure reduction (International Monetary Fund, 2017; Butt, 2019).

1.4.1 The status of the telecommunication organisations in Qatar

In recent times, Qatar has increased its investment in digital infrastructure and it has become a regional leader in the telecoms sector. It has some of the highest rates of fixed and mobile penetration in the region (Supreme Council of Information and Communication Technology, 2013). In 2019, Qatar was the first country in the world to launch both 5G commercial roaming services and 5G mobile telephony services (Arab News, 2019). A few months later, a telecoms operator in Qatar launched a virtual 3D retail store which was also the first of its kind to be established by any telecoms operator in the world (Qatar Tribune, 2019). This reflects the Qatari government's desire to back the digital transformation of the country and improve individuals' lifestyles (Kumar, 2019). Additionally, Qatar launched a National Artificial Intelligence Strategy in 2019 which discuses the adoption of the emerging technological

innovations and workplace systems to enhance the quality of telecommunication services for the public (Kumar, 2019).

Based on the 2016 reports by the Communications Regulatory Authority (CRA), the telecommunications sector contributes less than 2% of Qatar's total GDP (Gulf Times, 2017). However, the sector is expected to be worth approximately US$4.4 billion and has an expected growth rate of 3.2% per year (Oxford Business Group, 2019). Therefore, it can be stated that informal learning within the telecommunication sector can play a significant role towards development at organisational and national levels. This research focuses on one of the telecommunications organisations in Qatar with particular emphasis on informal learning. This will further be explained in the next section.

1.4.2 Case-study organisation[1]

This study aims to provide an improved understanding of the facilitation of informal learning from three perspectives (self-reflection, managerial coaching, and team knowledge exchange) across teams in a telecommunication company in Qatar. The case-study organisation is a regional industry leader and the market leader for the telecommunications sector in Qatar. The firm is publicly held with 52% of its shares owned by the government and 48% owned by other stakeholders. The case-study organisation also owns 12 other firms that operate in Asia and various parts of Africa.

According to Sullivan & Frost (2015), the case-study organisation's monopoly ended after another operator entered into Qatar's telecommunications industry in 2009; the new operator set a target of capturing 60% of the industry's market. Currently, the case-study organisation retains a 78.9% market share of the telecommunications sector while competing firms have a collective market share of 21.1% (Oxford Business Group, 2019).

Since 2006, the case study organisation has reported some of the highest growth rates among the telecommunications firms in the world (Oxford Business Group, 2007). However, the company's revenue decreased slightly from 32 million Qatari Riyals to 29 million Qatari Riyals (according to financial statements available on the case organisation's website). The case organisation incorporates the use of advanced technologies to facilitate its strategic plans and

[1] The case study organisation asked the researcher to ensure anonymity.

to gain a competitive advantage which is essential for its long-term sustainability (Gulf Times, 2018). The use of technology is essential for the development of organisational environments that facilitate learning for employees (Foil *et al*., 1985). The development of learning methods to enhance an organisation's capacity to negotiate unique challenges should not be implemented with formal learning techniques alone. Alternatives, a blend of formal and informal learning methods, are necessary for an effective learning process (Misko, 2008).

1.5 Research Gap

According to the reviewed literature, the significance of workplace learning in organisations is inevitable for their continual development and sustained growth (Crouse *et al*., 2011). Jacobs & Park (2009) argue that there is a significant potential relationship between workplace learning and human capital development when organisations consider the sustainability of learning and developmental processes alongside learning outcomes. Compared to formal learning, which often follows a structured and directed approach, informal learning does not have a structure and is often complex therefore making it harder to conceptualise. Although a number of models exist (e.g. Nomological and Dynamic) to aid a more-structured approach in understanding how informal learning can be embedded within organisations, the main shortfall is that the impact of informal learning can potentially be affected by the context. Context in this instance refers to the circumstances of the organisation which range from its nature, ongoing operations, type of tasks, demographics and many other factors. Therefore, it can be argued that applying some of the existing models (e.g. Nomological and Dynamic) for informal learning is complex, hence the researcher took a more-abstract conceptualisation of informal learning which can be classified into three types: (1) individual (self-reflection), (2) dyadic (learning from a supervisor), and (3) team knowledge. Taking this view of informal learning, it can be stated that in a workplace informal learning can be influenced by many factors.

Simultaneously, one of the primary aims of workplace learning in organisations is striving toward improving team performance where this contributes to overall organisational development. In sustaining and growing performance, organisations should continually promote learning and build their competencies by experimenting with innovative approaches, gaining knowledge from their experiences and the best practices of other organisations, and transmitting the knowledge quickly and promptly through the organisation in ways that produce measurable outputs (Toner, 2011). Formal learning can support gauging and

measuring performance as its structured and directed nature allows linking learning activities (e.g. training) with the organisational goals and operations. Within the context of Qatar, although formal certification and training programs are crucial for building knowledge there are two key obstacles: inadequate workforce education and the absence of the concept of informal learning within the organisation (World Economic Database, 2017). Most efforts, however, tend to focus on formal learning within organisations with limited emphasis on practices/approaches/activities that promote informal learning (Amelia *et al*., 2015). This is because informal learning does not have a clear or defined structure which makes it difficult to measure how it impacts or supports organisational development (Misko, 2008). Therefore, in the context of this research, another element that will be investigated is how informal learning supports team performance which will be tested within the context of the case study organisation in Qatar.

1.6 Research Aims

This study aims to provide an improved understanding of facilitating informal learning at three levels (self-reflection, managerial coaching, and team knowledge exchange) in Qatar. The study is contextualised within a telecommunication company used as a case study.

1.7 Research Objectives

The specific issues that this research aims to investigate are addressed through the following research objectives:

- To review the concepts and definitions of informal learning and how it is positioned within organisations.
- To examine the frequency of informal learning at three levels and whether it has an impact on team performance within the Qatari telecommunications sector.
- To synthesise understanding of factors that affect informal learning in teams within the Qatari telecommunications sector.
- To develop an organisational framework that reflects intermediate factors impacting the facilitation of informal learning.

1.8 Significance of the Study

This research on informal learning informs existing work in the literature. First, as well as conceptualising informal learning at three different levels, it explores the relationships between informal learning and team performance. Second, a review of the existing work will support

wider consideration and understanding of the factors that impact informal learning in organisations within the context of developing countries such as Qatar. Third, this research will potentially provide help and guidance for other companies that wish to either understand their informal learning environments or to assess the informal learning impact on teams. In this study, examining the impact of informal learning on team performance will support identifying areas for improvement within organisations in Qatar.

1.9 Research Outline

Chapter 1 identifies the rationale for the study, the significance of it and research areas covered. It also identifies the theoretical and practical contributions made by the study.

In Chapter 2, the discussion focuses on the drivers of informal learning and the barriers to informal learning within organisations. The chapter contextualises the impact of the work environment on informal learning practices and discusses how environmental factors like the availability of support and resources influence informal learning. It also identifies the study's conceptual framework which highlights how the barriers and drivers influencing informal learning relate to team performance. The conceptual framework considers prior findings related to organisational learning and performance.

Chapter 3 describes the study's philosophical perspective, justifies the study's philosophical research position, and describes how the study's philosophy informed its research methods. It also discusses the study's research approach, choice of methods, and the use of a mixed methods research approach. The chapter also discusses the precautions taken in designing the study to ensure the ethical compliance and validity of the study's inquiries.

Chapter 4 details the findings of the quantitative studies and research measures, discusses the criteria for inclusion and exclusion of research participants. and includes other discussions that establish the validity of the findings.

Chapter 5 analyses the findings of the qualitative studies and makes inferences based on the participants' discussions about the factors (themes) influencing the adoption of informal learning activities within the organisation.

Chapter 6 is a discussion of the findings from the qualitative and quantitative research and adds appropriate sources from the literature to confirm the originality of this research.

Chapter 7 concludes the thesis and it describes the theoretical and practical implications of the research, makes recommendations for future studies, and explains the study's value to academics and industry stakeholders.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relating to informal learning in the work environment. It commences by stating the importance of workplace learning, focusing on formal and informal learning. This is followed by a review of concepts and definitions as well as available models for informal learning, then by a discussion of different levels (individual, dyadic and group) of informal learning. Next, facilitators and barriers of informal learning are discussed after which the impact of informal learning on team performance is addressed. The chapter concludes with highlighting the challenges associated with measuring informal learning in organisations and identifying the main gap that will be tackled in this research.

2.2 Workplace Learning

Marsick & Watkins (2003) note that, generally, learning could be achieved at different phases or levels including team, personal and organisational learning stages. At a personal level, informal learning allows for the acquisition of knowledge by individuals that are part of an organisation, thereby enhancing the competencies of employees in the workplace (Carrasco & Silva, 2017). For learning that is implemented at team level, it is noted that this involves collective and new knowledge, facilitating the effectiveness of the teams in the organisation in undertaking collaborative and mutually exclusive group tasks (Marsisk & Watkins, 2003). At organisational level, this entails policies, procedures and systems about informal learning being adopted by an organisation (Marisk & Watkins, 2003).

Lavenberg & Caspi (2010) indicate that sometimes workplace learning is incorporated into organisational strategies, albeit indirectly. Similarly, suggestions by Boud & Garrick (1999) identify workplace learning as being '*concerned not only with immediate work competencies but about future competencies. It is about investment in the general capabilities of employees as well as the specific and technical. And it is about the utilisation of their knowledge and capabilities wherever they might be needed in place and time'.* This is indicative of the significance of workplace learning to an organisation's innovative capacity as well as its competitiveness.

Workplace learning can take the form of both formal and informal learning procedures where the two learning forms do not conflict but can work in supplementing one another (Lee *et al*., 2004). It is suggested that there could be simultaneous incorporation of both informal and formal learning procedures in an organisation (Lee *et al*., 2010). Similarly, arguments by Crouse *et al*. (2011) indicate that while most of the learning done in firms uses the informal format, the use of both approaches to learning is significant to the sustainability of the organisation. Svensson *et al*. (2004) posit that it is essential that informal learning is supported by formal education as this helps in the creation of competency and skills which are desirable and important for the competitiveness of the organisation.

While formal learning is based on structure, planning and courses/modules and is mainly facilitated and led by professionals, informal learning is more practical-based experience which could be unorganised and ad hoc, occurring outside the classroom (Marsick & Watkins, 2003). Informal learning typically takes place outside academic and pedagogical establishments (Manuti *et al*., 2015). It does not follow a defined curriculum and is often not properly managed but instead is carried out periodically on specific occasions as a result of modifying practical criteria. It is not necessarily considered pedagogy, or, test and qualification orientated. Rather, it is either an instinctively fortuitous or even consciously intended instinct, holistically problem-related, and related to actual circumstances (Misfeldt, 2015). It is noted that incidental learning is a style of informal learning which occurs serendipitously through completion of assigned tasks and usually takes the appearance of a side effect following the performance of activities (Marsick & Watkins, 2003). A study conducted by Billett (1996) concluded that formal channels of learning, including training events, are not the only means through which learning could be gained in an organisation. Indeed, it was found that the work environment provides opportunities for the workforce to gain knowledge through informal learning which can be more efficient in the 21st century (Choi *et al*., 2019). In fact, to solidify understanding of the role of learning and informal learning, Becker & Bish (2017) investigated the differences in the experiences and expectations of management development based on whether the organisation relied on informal or formal learning in the acquisition of skills. Based on the study, most organisations were conflicted about whether to use formal or informal learning to equip employees with the necessary training to fit into management roles. The study stated that management development would often require a customised (formal) approach that is tailored to the needs of the organisation (Day *et al*., 2014; Froehlich *et al*., (2014). Furthermore, the

study argued that although formal learning is deeply integrated into the form of the training and development activities, formal training is limited in terms of its capability to draw on needs and implications embedded in the work context. This was pointed out by Rigby & Ryan (2018): many of the qualities within management development rely on informal learning abilities over time within an organisation and this can be, for instance, how an individual can manage a department. This shows that a one-size-fits-all approach does not define whether a type (formal or informal) of learning is the perfect answer which necessitates one of the rationales of this research study.

In summary, workplace learning has gradually been recognised as an integral part of the management processes through which employees gain proficiency in the workplace. Manuti *et al*. (2015) citing the position of Billett (2002) indicated that there needs to be a differentiation between formal and informal learning processes and the focus of the organisation should be on the analysis of the practices and structures that have been put in place in the work environment to guarantee learning opportunities for employees. Therefore, the next sections provide a further insight into formal and informal learning in organisations.

2.3 Formal Learning

Scholars concur that there is a strong alignment between workplace learning and formal learning or training procedures (Antonacopoulou, 2006; Decius *et al*., 2019). Training may be perceived as the primary mean through which one could learn in the work environment although this assumption can be argued to illustrate a poor and narrow perspective (Antonacopoulou, 2007). Manuti *et al*. (2015) highlight that the learning process is a continuum comprising formal and informal elements. The symbiotic and synergistic relationship between the two forms of learning makes it challenging for a distinction to be created (Becker & Bish, 2017).

According to Leslie *et al*. (1998), the use of formal learning allows for enhancement of independent and critical forms of thinking which are skills needed for effective implementation of assigned work functions. Matthews (1999) notes that learning in the workplace is a complex process that involves the use of strategies which are informal while concurrently using formal strategies for learning.

Based on the above studies, it is clear that formal learning and the role it occupies in organisations is invaluable and forms one of the core learning processes. However, whereas formal learning can be mapped within the organisational activities, informal learning does not follow a standardised structure or process but can be conceptualised and recognised in several ways where this forms one of the rationalisations about the research undertaken. The next section explores informal learning in more detail.

2.4 Informal Learning

Decius *et al*. (2019) and Latchem (2014) indicate that 70-90% of the learning within organisations occurs informally. Research by Decius & Schaper (2017) indicates that, as a supplement to formal learning, informal learning is necessary for some categories of employees such as blue-collar workers. Due to the low level of suitability of the skills acquisition processes through formal learning these categories of employees rely heavily on informal learning. Johansson & Abrahamsson (2018), Nerland (2008) and Noe *et al*. (2013) further cite the example of organisations that cannot afford formal training for all categories of skills due to budgetary constraints, lack of resources as well as the lack of capacity to train. Such institutions rely on informal learning to supplement whatever formal learning is carried out. Latchem (2014) and Manuti *et al*. (2015) further recognise the utility of informal learning within small- and medium-sized entities that rely on informal learning strategies as a way of achieving cost-effectiveness in their operations. Essentially, these small- and medium-sized organisations (SMEs) utilise formal learning for specific functions, specifically those mandated by law, then tap into informal learning to supplement the knowledge that is not available under the statutorily mandated skills category.

Mattox (2012) and Rabin (2014) use the 70:20:10 model which depicts the proportional itemisation of how learning and development occurs within any organisation. The model, which was originally developed by Lombardo & Eichinger (1996), assign the proportions of learning and development to the start of the realisation of the need (current or future), followed by feedback and, ultimately, the deliberate search for knowledge-based solutions (Lombardo & Eichinger, 1996*).* Rabin (2014) identified that there are different innovative learning models in the workplace including the 70:20:10 model which was developed in the 1980s. This model incorporates a framework for the allocation of different percentages to the different forms of learning which are adopted within an organisation (Rabin, 2014). According to this model, the

percentage of informal learning implemented in an organisation estimated to be 90% comprises challenging assignments or interaction with individuals that are influential within the organisation. Based on the suggestions, it can be argued that most of the learning which is implemented within the work environment is done through informal channels rather than formal ones. This indicates that organisations do not need to focus only on formal learning procedures but should also consider the value that informal learning activities could bring to the firm and should consequently take actions to facilitate while still ensuring that challenging assignments are taken care of (Rabin, 2014).

Although, later studies have critiqued the 70:20:10 model because of uncertainty of the accuracy of the percentages (Kajewski *et al*., 2012), it provides indications of the integral nature of informal learning in the workplace and the role it plays in the processes through which employees acquire skills.

A significant argument that favours the adoption of informal learning suggests that there is better effectiveness of informal learning in a variety of contexts due to the belief that this form of learning helps facilitate higher motivation of the employees (Wenger, 1999). Informal learning is associated with the organisational strategies because it facilitates the improvement of the capacity of an organisation to be competitive in terms of the staff's competitiveness through enhancement of their competencies and skills. Furthermore, the chances that this form of learning occurs is much higher compared to formal learning due to the costs associated with consistently incorporating formal learning or training programs. As a result of this, there have recently been more empirical studies being implemented specifically addressing informal learning (LeClus, 2011). Chief among these is the study by Illeris (2011) who notes that several academics perceive the implementation or adoption of informal learning as a positive decision even though there are drawbacks to this learning process in terms of the results which are gained by the employees. Arguments opposing the adoption of this as a central form of learning indicate that the results of informal learning include more depth and knowledge being obtained by the employee as time would have been assigned to teaching specific, growth-related technical skills (Illeris, 2011). This differs from informal learning where there is not enough time which results in a lower level of learning for the employees (Illeris, 2011).

2.4.1 Concepts and definitions

Informal learning is conceptualised in a multiplicity of ways. Billet (2002), in his study on workplace learning, states that the description of informal for any learning activity which occurs in the work environment is not correct. Further criticisms cited by Billet (2002) argue against the suggestion that there could be the implementation of workplace activities without structure and intent as the work environment is formalised by the practices and norms implemented there and is also highly structured. Therefore, the practices and goals which are embedded in a workplace impact on the activities that would be engaged in by its employees, in similar ways to academic institutions (Billet, 2002). In fact, some studies view informal learning as a unique and separate dimension of the learning and development processes. Researchers such as Becker & Bish (2017*)* and Rabin (2014) posit that informal learning is an alternative to formal learning. Lee *et al*. (2004) identify that the concept of informal learning is not new but it is a continually developing area of study and, as such, there are different methods through which the concept could be described or defined as informal learning connects with several different facets of the organisation.

Tannenbaum *et al*. (2010) identify four characteristics of informal learning including that it is self-guided by the individual learner, bears elements of the deliberate intention to learn, improve and develop at a personal level, entails the active search for knowledge, and occurs outside the formal learning settings. From another perspective, Decius *et al*. (2019) and Kyndt & Baert, (2013) view informal learning as a supplement to formal learning since it culminates in the acquisition of skills that are integral to the performance of employees' roles. Researchers who perceive informal learning as an alternative to formal learning base their arguments on the fact that most of the learning in the workplace occurs through this avenue. Borghans *et al*. (2007) argue that 94% of the time spent in the workplace culminates to informal learning with the remaining 6% of the learning occurring formally, while Grip (2015) estimates the proportion of informal to formal learning at 96:4%.

Based on the nature of the investigation being conducted in this research, informal learning within the work environment is described as a form of learning that is continuous but integrated and can be supplemented with formal learning techniques. Furthermore, in informal learning, the occurrence could be facilitated by exposure to external and internal environmental conditions.

2.4.3 The Dynamic Model

The Dynamic Model for informal learning, as developed by Tannenbaum *et al*. (2009), is designed to highlight the components that determine the effectiveness of informal learning within the institutional framework. The model comprises input factors which determine the output based on the processes. The input factors are essentially organisational/situational circumstances which also apply to the individual employees. The factors included in the model are not sequentially related; the design indicates the dynamic nature of the relationship between the components due to the constant interaction.

The dynamic model has been widely used in studies with adjustments to the framework to further classify the components. Patterson *et al*. (2017) identified constructs under each of the four variables and operationalised the experience/action as an input at organisational level, the intent to learn as an individual input, reflections as an individual outcome, and feedback as an organisational outcome (Figure 2.1). A different approach is adopted by Cuinen *et al*. (2017), who classify the intent to learn and the experience and action as inputs while feedback and reflections are viewed as output factors.

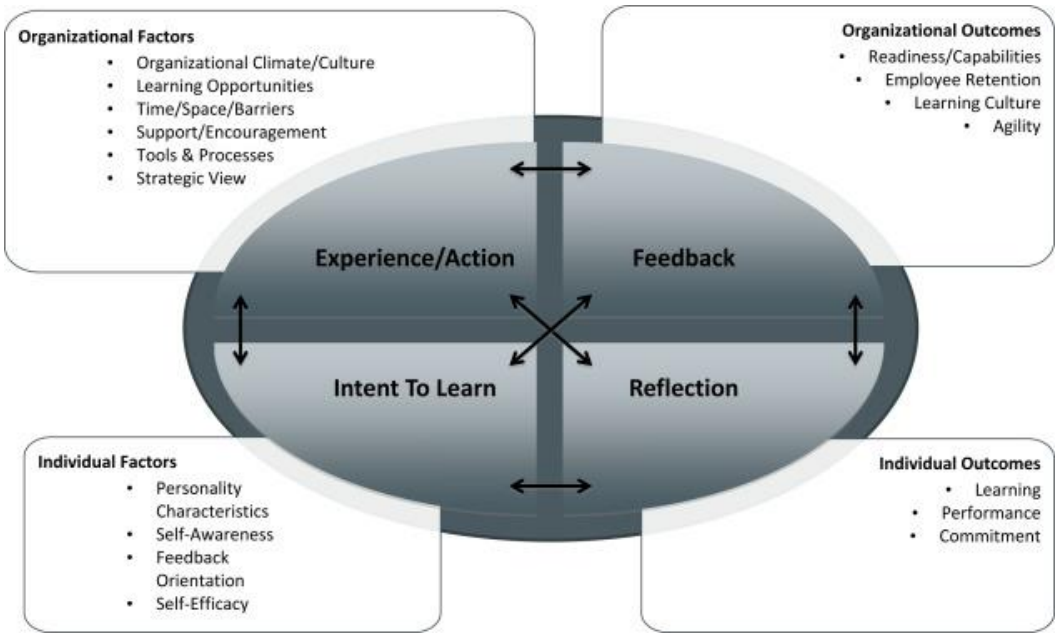


Figure 3.1. Dynamic Learning Model. (Source: Patterson *et al*., 2017, based on Tannenbaum *et al*., 2009).

Experience/Action: Decius *et al*. (2019) define experience as a proxy of past exposure and familiarity with informal learning. Such experience enables the entity to frame ideas based on reflections from past informal learning activities which, in turn, results in learning objectives

and processes that are more refined than before (Lemmetty & Collin, 2019). These experiences enable an employee to direct the informal learning processes towards outcomes that are relevant to the workplace. That can be a skill that is required for their job or acquisition of knowledge that gives them an advantage over their peers. The benefits of experience include avoidance of generic pitfalls and the application of a strategic approach in implementing the informal learning activities within the organisation.

Intent to Learn: The intention to learn is a proxy for motivation (Tannenbaum *et al*., 2009), which has been operationalised as the presence of the need to learn in studies by Preenen *et al*. (2015). Essentially, a higher motivation to learn is associated with higher effectiveness of informal learning. High levels of intention to learn drives employees to actively seek out opportunities for informal learning (Wilson & Hartung, 2015) and to overcome the challenges associated with learning in an unstructured manner (Walker *et al*., 2013). Similarly, the intention to learn is found to motivate employees to seek knowledge through informal ways, even in industries where informal learning is the only option, based on the conclusions by Lemmetty & Collin (2019). According to Colbert *et al*. (2016) and Latchem (2014), although it is the organisation who will benefit from the knowledge and skills resulting from informal learning, the main intention is to drive and motivate employees to invest time and resources to acquire knowledge.

Feedback: Feedback is defined as the responses based on reactions to the performance of a task or exposure to a specific phenomenon (Patterson *et al*., 2017). However, Tannenbaum *et al*. (2009) describe feedback as the direct and indirect responses that stimulate specific control or modification based on the predetermined pathways. Feedback under informal learning processes is judged on its consistency, quality, and degree of accuracy. The presence of feedback loops enables employees to gauge the extent to which they have acquired knowledge under informal learning, especially because the process lacks structure (Bednall & Sanders, 2017). The lack of formalised testing and appraisal mechanisms under some of the informal learning process implies that feedback is the only determinant of whether the skills and/or knowledge was passed on or acquired (Abdul *et al*., 2016). Past studies have found that robust feedback systems drive employees towards effective informal learning whereby the speed with which skills and knowledge is acquired is improved (Carrasco & Silva, 2017). Furthermore, unlike the formal testing mechanisms that are flawed due to lack of customisation, the feedback

systems in informal learning are suitable mechanisms for testing whether the learner acquired the necessary knowledge (Choonara *et al*., 2017).

Reflections: Reflections denote the link between actions and results whereby employees who participate in informal learning look back at the experiences to determine what lessons they have gained from the process. According to Cuinen *et al*. (2017), reflections relate to all elements of informal learning including the content, inputs, process, output, the environment, and the expectations of the participants. The objective of reflections is to provide a conscious review based on the experiences of the individual regardless of whether it is based on self-criticism or the identification of faults in the process. Decius *et al*. (2019) note that reflections enable the employees involved in informal learning to monitor their progress by reviewing the extent to which the knowledge they have acquired meets their expected standards in terms of quality and quantity. In most instances, reflections are designed to enable the employees to determine whether the informal learning processes were effective so that they can make the necessary adjustments. It can be stated that one of the dynamic models focus is on feedback and reflections as part of informal learning in the workplace. Studies that relied on the model (Richter *et al*., 2020; Sockett *et al*., 2012; Anseel & Lievens, 2009) concluded that informal learning through reflections impact the performance of the individual. Therefore, in the present study, some of the activities (e.g. reflections, feedback, intent to learn, and experience) from the dynamic model will be explored in terms of their impact within the case study. Other informal learning activities that are the focus of this study, including team knowledge exchange, were not included in the model, hence the need for the development of the nomological model as discussed by Decius *et al*. (2019).

2.4.4 The Nomological Model

The nomological model developed by Decius *et al*. (2019) introduced second-order variables to the dynamic model. The model provides a more refined tool for investigating the antecedents and outcomes of informal learning within different environments. It provides a deeper context for the activities associated with informal learning in a manner that makes it possible for researchers to operationalise informal learning variables within a team environment. As a result, the nomological model establishes a better foundation for appreciating the literature map and testing the three variables identified as the informal learning activities and how they influence the performance of teams in the company as outlined below

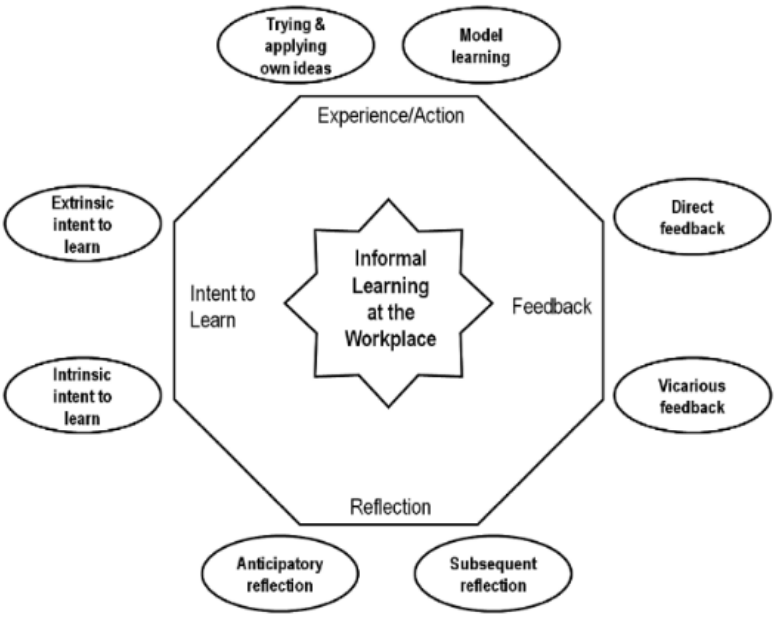


Figure 4.2. Nomological Dynamic Learning Model. Source: Decius *et al*. (2019).

Experience/Action: Decius *et al*. (2019) separate experience/action into trying new ideas and learning based on existing models. Noe *et al*. (2013) referenced the imperativeness of trying new ideas by learning from oneself while guided learning introduces some structure into the informal learning processes. The models of learning refer to approaches such as the social cognitive model whereby informal learning can be managed by observing others then adapting the content or the process of learning based on the observations.

Intent to learn: The model developed by Decius *et al*. (2019) recognises the value of intrinsic and extrinsic intent to learn. Intrinsic intent originates from within the individuals who are involved in informal learning relating to the rationale for improvement whereas extrinsic intent is modelled around the purpose for which the skills and knowledge will be applied which is often progression in their career. In line with the self-determination theory, individuals are geared towards achieving better. The relationship between the intent to learn and the motivation for work is operationalised as part of the ways through which informal learning influences performance. As a result, based on the precursor study by Cerasoli *et al*. (2014), it is possible to identify how informal learning affects performance at an individual level and, ultimately, at a team and organisational level.

Reflections: Decius et al.'s (2019) model recognises the role of thoughtful considerations about past, present, and future learning activities on the informal learning process. Tannenbaum *et al*. (2009) reference reflections as a way of enabling the employees to anticipate novel challenges or opportunities in the learning process. Reflections introduce some form of structure to the informal learning process. The anticipatory reflections entail the thought processes that are taken into consideration before participating in work-related activities that culminate in learning. Subsequent reflections relate to the considerations that occur following the completion of the task.

Feedback: The acknowledgements from the learning process can either relate to the improvement in the proficiency of the employees or the responses from the individual who is involved in the informal learning process (Decius *et al*., 2019). The dynamic model for informal learning recognises the fact that an employee can receive feedback that is specific to their job or informal learning activities or generally relating to them. Based on the literature by Tannenbaum *et al*. (2009), vicarious feedback has the potential to open the eyes of the employees to opportunities for incidental learning since they are based on aspects of learning, the job, and the employees that have not been taken into consideration before.

2.4.5. Other informal learning measures

In addition to dynamic and nomological models of informal learning, research has also attempted to tackle the complexity of facilitating informal learning through conceptualising informal learning at different levels. Informal learning, in its abstract essence, can be recognised as non-institutionally/organisationally driven but more rationalised by the thrive to learn and develop by employees/individuals (Lohman, 2005). To provide a more structured approach towards informal learning, many research efforts (e.g. Kember *et al*., 2000; Van *et al*., 2013; Nyfoudi, 2015) have attempted to look at informal learning from specific levels: reflection, learning from supervisor, and team learning. A study by Yang & Johnson (2012) has looked into informal learning using the aforementioned informal learning levels in order to present a holistic understanding of how informal learning is present in an organisation. Reflection has been recognised as one of the main elements of the learning process at an individual level in an organisation (Van, Woerkom & Croon, 2008). Learning from a supervisor, which also referred to as managerial coaching, is also recognised as an essential learning source for employees. The significance of learning from a supervisor can be

recognised in terms of cascading expertise, efficiency, and effectiveness of employees within a team (Van *et al*., 2013). Team learning refers to the collaborative process between team members in terms of sharing information and collectively achieving the team's objective (Argote & Miron-Spektor, 2011; Edmondson *et al*., 2007). Furthermore, team learning plays a vital role in building team work and, more importantly, constituing a successful learning organisation. It is anticipated that understanding informal learning through different levels will provide, beyond a structured approach towards informal learning, a means to understand the nature of informal learning in an organisation and the factors that mediate informal learning (Yang & Johnson, 2012; Nyfoudi, 2015; Van *et al*., 2013). Based on the aforementioned studies, using the three levels has provided a more flexible and holistic means to enquire into informal learning in a more traceable manner. In other words, the unstructured nature of informal learning poses a major challenge when tracing how informal learning occurs in organisations; hence using the three levels of informal learning can provide a more traceable and holistic mechanism when compared with many of the methods/techniques used for informal learning.

2.4.6. Challenges facing informal learning in organisations

The above models (Dynamic and Nomological) portray informal learning in an abstract way. This presents challenges in operationalising the concept. A study by Lavenberg & Caspi (2010) attempted to ascertain the effectiveness of informal learning by proposing six criteria to determine the impact of informal learning on a learner. However, based on the nature of informal learning, conceptualising it is highly influenced by scope of the definition of the processes associated with the acquisition of the knowledge, the location where the informal learning occurs, and the existence or absence of a predetermined purpose for informal learning.

One of the reasons for the difficulty in measuring the effectiveness of informal learning is its lack of structure (De Grip, 2015). Unlike formal learning, which often relies on quantitative measures, informal learning may use quantitative and qualitative measures (Decius *et al.*, 2019). To reflect the occurrence and mechanisms of informal learning, the Organisation for Economic Co-operation and Development (OECD, 2005) conducted research that covered employees from 21 countries. The results showed that there are significant variations in the extent to which informal learning occurs where it was 12% among Korean employees to 53% among Spanish workers. In terms of the mechanism, informal learning stimulated by the

activities proposed by supervisors was 10% within Korean organisations and 36% in Spanish organisations.

Recognition of the skill acquisition is another challenge that causes difficulty in measuring the effectiveness of informal learning (Carrasco & Silva, 2017). Cameron (2004) indicated that recognition of skills is a complex process and, because of the costs associated with collection of evidence needed, there is difficulty in evidencing its impact on skill acquisition through different approaches (Froehlich *et al*., 2014; Froehlich, 2017*)*. Cameron (2004) further stated that, in many instances, informal learning activities can lose their informality status as organisations tend to set indicators to gauge the effectivity of a particular activity towards the learning process (Clarke, 2005). This was explained by Misko (2008) who argued that there is always an overlap between formal and informal learning since the objectives of the skills acquired under the two learning processes are the same. Manuti *et al*. (2015) solidified this by indicating that learning does not rely on a single process (e.g. formal or informal) but that it is more of a continuum of activities and the context within which the process occurs. For instance, looking at the development of management capabilities in an organisation, informal learning is highly influenced by management processes in place (Becker & Bish, 2017) in addition to other management factors (e.g. motivation, job satisfaction) where they are contextualised differently depending on the set up being investigated (Froehlich *et al*., 2014; Liezelot *et al*., 2017). In other words, such an example can illustrate the complexity of identifying a standardised process with activities and determine the outcomes that result from this process.

The complexity of assessing informal learning in organisations poses another challenge when measuring its impact and effectivity. According to Froehlich *et al*. (2014), skills that are obtained through different informal learning methods do not need or require any formal certifications that recognise such skills. This, however, is noted to only be effective in work environments with less regulatory requirements as some technical organisations require formal certifications relating to the skills an employee claims to have for them to be employed or progress to advanced levels such as management. Clarke (2005) highlighted that the inability to formalise assessment for informal learning can result in difficulty to prove/evidence the capacity of human resource or even improvement of different functions within organisations. This can be explained by the complexity of connecting the impact of informal learning on improvements in organisations. According to Hillier (2009), Virtual Learning Environments

(VLEs) can be used as one of the mediums to access resources related to informal learning and supports documenting of the learning impact. In addition, it allows for ease of evaluating informal learning. However, many organisations, especially small and medium enterprises (SMEs) recognise VLEs as an expensive method despite
the benefits they offer to document informal learning (Jay & Connors, 2005). Considering the above perspectives on assessing informal learning, one of the ultimate aims for an organisation is assessing its effectiveness and impact on employee performance (Smith & Clayton, 2009). More importantly, with the difficulty of determining the impact of informal learning, it is evident that it has an impact on the type of skills and competencies that can be gained, hence its value is still recognisable (Liezelot *et al*., 2017).

Many recent studies have therefore focused on providing reliable measures for informal learning. For instance, Park & Lee (2018), using the 3-P Model developed Biggs in 1999, revealed that effectiveness and impact of informal learning should be based on the input (presage), the processes, and the product (outcome). Cerasoli *et al*. (2017) highlighted the need for a unified instrument for testing the antecedents and outcome of informal learning. In response to this, Decius *et al*. (2019) have recently developed an instrument based on the Dynamic Model for informal learning. The model entailed eight factors tested under 24 constructs that relate to the four dimensions under the Dynamic Model for informal learning by Tannenbaum *et al*., (2009). It is important to note that the model by Decius *et al*. (2019) offers a unified approach with specific scale items that can be applied to any institutions. Due to the challenges in identifying the actual impact of informal learning on the organisation the viability of the scale is dependent on how the instrument is framed within a research project.

2.4.7 Summary on informal learning concepts and measures

In conclusion, informal learning can be viewed as an unstructured approach as it occurs through processes that cannot be officially accounted for when compared to formal learning activities in organisations. Hence, although many organisations found that informal learning can influence the overall outcome of learning within the workplace, this differs between organisations and identifying standardised measures remains one of the major challenges to justify and understand the necessity of informal learning. Therefore, there is a need to further investigate valid structures and mechanisms that support assessing informal learning as well as the impact and effectiveness of activities undertaken within an organisation. It was also

highlighted that evidence of skill acquisition using informal learning is complex and often embedded as part of overall learning. On the one hand, unlike formal learning, assessing the impact and effectiveness of informal learning remains a continual challenge despite different models and approaches that are available. On the other hand, looking into informal learning at different levels can support a more structured approach towards understanding the nature of informal learning in an organisation and, more importantly, exploring factors that support mediating it.

It is important to note that one of the highlights recognised within the Dynamic and Nomological Models is that the intent to learn, as well as the ability to learn, originates from the personal characteristics of the employees that ultimately influence the willingness and ability to learn informally. However, there is no conclusive evidence that such a link exists at team level. Beyond dynamic and nomological informal learning models, as mentioned in section 2.4.3 and 2.4.4., some researchers (Decius *et al*. ,2019; Tannenbaum *et al*., 2009) have explored informal learning in organisations focusing on one of the three levels: reflection, learning from supervisors, and team learning. This approach towards informal learning provides a more structured means to understand informal learning in organisations and more narratively explore factors that mediate informal learning. In the context of this research, and as it seeks to provide an improved understanding of facilitating informal learning in an organisation, the three levels will be used as lenses to explore informal learning within the targeted organisation.

2.5 Levels of Informal Learning Activities

The informal nature of organisational learning implies that it is challenging to map all levels and types of activities. Several distinct constructs are investigated herein to distinguish between the various activities that are associated with informal learning. Informal learning in the workplace could be described in terms of activities, however, it cannot be classified as the existence of one type of activity that won't exclude the presence of the others (Anselmann, 2016). Crouse *et al*. (2011) identified over 30 informal techniques of learning which could be adopted within an organisation and these include, but are not limited to, doing new tasks, observation, reading, researching, vision, action, and feedback. Another study on 131 respondents by Kortsch *et al*. (2019) was used to determine the most suitable techniques (activities) for informal learning based on four processes. These processes were learning from

oneself, learning from others (peers), learning from existing official sources, and learning from unofficial sources (e.g. media). The study concluded that rather than relying on individuals' learning techniques, employees used three patterns: balanced high (whereby learning from all the techniques occurred but in a balanced manner), person-orientated (there were differences in the techniques adopted based on the individual), and balanced low (there were preferences in the techniques adopted primarily because some techniques served the interests of the employee more than others).

In the present study, the focus will be the following techniques: (1) self-reflection, (2) managerial coaching, and (3) team knowledge exchange. These three techniques depict informal learning at the individual, dyadic, and group levels respectively (Yang & Johnson, 2012).

2.5.1 Individual level activities

At the individual level, it is noted that the activities include reflections relating to actions which are performed daily, sharing of knowledge with colleagues at work, and incorporating behaviours which could be described as innovative (Bendall & Sanders, 2014). Reflection is a personal level of informal learning that depends on gaining experience to do things in a better way and on self-action to improve performance. Therefore, reflection helps to re-appraise self-experience so one can learn from it and improve performance. Moreover, learning at this level involves individuals following their desires and without any convictions pursue knowledge through searching for resources on the web among other sources/channels to facilitate their personal upskilling (Bednall *et al.*, 2014).

2.5.2 Dyadic level activities

Dyadic level activities involve a one-to-one form of relationship where conversations, talks, advice, coaching, and guidance is provided for workers in the organisation (Garrick, 1998). Supervisors and managers in the workplace play an integral role in the informal learning process. Wallo (2008) stated that direct managers play one of the key drivers for informal learning as a supporter, educator, and confronter. They play a critical role in easing informal learning, enhancing informal relationships, supporting learning culture, and easing open communications. Managerial coaching depends on both the supervisor and employees. A direct supervisor needs to provide constructive feedback, appreciate employee opinions, build

trusting relationships, and encourage employees to learn. On the other hand, in a work environment employees need to listen carefully, ask questions, and be open-minded. Thus, it can be stated that informal learning at a dyadic level is a two-way process: active listening to supervisors/managers and willingness of supervisors/managers to share and provide feedback.

2.5.3 Group level activities

At a group level, informal learning involves activities such as discussions, presentations, and social forms of networking to facilitate the exchange and sharing of information between employees (Williams *et al*., 2001; Anselmann, 2016; Argote & Miron-Spektor, 2011). Presentations, discussions, social networking, and membership in professional unions where information is exchanged are examples of informal learning at group level (Hart, 2014). Team learning also depends on open communications to be able to share knowledge. Through this experience, individuals come to know that other viewpoints can exist, accept their existence, and perhaps even consider them in their viewpoints (Engeström *et al*., 1995). Wilson & Hartung (2015) indicated that one of the unique forms of informal learning at team level is social learning which supports facilitating group-level through listening and sharing of different perspectives, beliefs, and experiences provided by individuals. In social learning, the discussion and engagement activities are the key learning sources and there could be differences in learning outcomes based on the extent of stimulation associated with individuals present within the social learning discussion activities (Wilson & Hartung, 2015). While some teams share relevant information and ideas, listen carefully, handle differences of opinions sensitively, and ask each other critical questions to verify opinions and ideas, other teams do not.

Simultaneously, regardless of the level in which informal learning takes place at, there are a number of factors that influence informal learning. Tusting (2003) identifies that while it may be difficult in recognising learning processes at work, the interaction between co-workers is suggested to be important factor in the development of knowledge and the skills which are attained as a result of the learning process. Tillaart *et al*. (1998) noted that learning could be facilitated by engaging in informal conversation procedures, social interaction, or engagement in the work environment. Team/group learning can be influenced by organisational culture which may tend to encourage or discourage teamwork and collaboration. For example, Marsick & Watkins (2003) identified the cultural artefacts that encourage informal learning at the

workplace which ensure opportunities for dialogue and inquiry, emphasise team learning and collaboration, and create systems to capture and share this learning. Many factors can affect the contributions and effectiveness of team learning, including the level of conflicts in the manner in which conflicts are managed. Thus, it can be recognised that informal learning can be impacted by a number of facilitating and barriers at the workplace.

2.6 Informal Learning and Team Performance

Guzzo & Dickson (1996) describe the performance as incorporating a wide array of indicators which illustrates either negative or positive outcomes for an organisation or team in terms of productivity and financial growth, among other forms of metrics, which could be used in judging an organisation's positioning compared to its competitors. However, Cohen & Bailey (1997), using a car assembly as an example, identified that performance incorporates pieces of evidence concerning productivity, quality associated with a product, customer satisfaction levels within a firm, and employee motivations. It is further stated that performance indicators are so complex that they could be identified within several levels (individual, team or bureaucratic) within an organisation, i.e. departmental level metrics could be instituted to identify positive and negative performance indicators by incorporating a standard for performance excellence or outcomes/expectations of the organisation (Mueller *et al*., 2010). In fact, Raffaele *et al*. (2019) identified that the performance outcomes that are obtained by a team are as a result of the composition of the team and the behaviours shown by members of the team as well as shared beliefs. In the context of this research, performance is examined from a team perspective in the following sections where existing studies on team performance and its related elements/aspects are illustrated.

The performance of teams, which correlates with the performance of individuals, remains one of the key concerns for every organisation (Sibarani *et al*., 2015), hence research is continually looking into strategies and mechanisms that support team performance. This becomes more challenging when exploring the impact of informal learning specifically on team performance. It is argued by De Grip (2015) that informal learning contributes to the performance of workers in ways that differ from formal training because informal learning contributes to firm productivity as knowledge spreads between peers and team members in the workplace. For instance, a study by Choonara *et al*. (2017) relied on qualitative methods to analyse data from 18 participants to determine how significant informal learning was on the development of

leadership in the department. The study found that informal learning enabled the team members to benefit from fostering the readiness for learning within the team framework, as well as learning from others regarding certain non-technical and soft skills such as delegation and communication. However, the study also revealed that informal learning is complicated by the fact that the procedures are not calibrated for some of the technical skills in the workplace such as those required in the finance department. Although, in addition to this study, there exist other studies that looked into the impact of informal learning on individual performance (e.g. job or characteristics) within a workplace, empirical research that evidences this is considerably limited (Park & Choi, 2016). Hence, research continues to further understand how informal learning can impact individual performance and how this can be extended to understand team performance. Another study by Choi *et al*. (2019) that used data from 221 employees revealed that informal learning can play a key role in improving the performance of organisations with a poor employee-job fit and poor employee-organisation fit. Although most organisations recruit employees who are qualified for a particular job, the study provided a perspective on the use of informal learning as mechanism to overcome challenges and complexities that may result of having employees who do not fit the job or the organisation. However, it is apparent that informal training plays an important role in enabling organisations to overcome the challenge with a skill shortage in a cost-effective manner. This can perhaps be explained by the learning processes used for informal learning which enables the organisations to reduce the unit cost and, indeed, the overall cost of upskilling employees (Kortsch *et al*., 2019) The cost-efficiency arises from the fact that informal learning lays the foundation for identification of gaps in the skills of employees (Preenen *et al*., 2015).

One of the most important outcomes of learning in organisations is an improved professional practice amongst different teams which makes the work easier and supports the relay of up-to-date information in related industry practices (Crouse *et al*., 2011). The utility of teams as the basic unit that performs and is responsible for the strategic objectives of an organisation is widely discussed in management theory (Johansson & Abrahamsson, 2018; Dotcenko *et al*., 2016). Moreover, teams help to solve problems more effectively since they collectively generate and synthesise ideas on how to solve the problem (Lucas, 2010). According to Lau & Murnighan (1998), teams are important because they improve the quality of output, increase learning, increase accountability, and enhance morals. More importantly, teams promote a sense of achievement and create a synergy which will support a more efficient way of working

(Gresguard, 2011). Teams help to solve problems more effectively, since they collectively generate and synthesise ideas on how to solve the problem (Lucas, 2010). In modern practice it is becoming necessary to be proficient across functions whereby each individual in the workplace is accomplished in multiple roles (Sibarani *et al*., 2015). This highlights the importance of teams and team performance. Furthermore, good activity often relies upon the ability of a cross-functional team to create a shared understanding of the task, the process, and the respective roles of its members (Tohidi, 2011).

According to Becker *et al*. (2015), teamwork and informal learning are both interworking agents which drive organisational performance. In a workplace environment there are contextual factors (e.g. organisational structure, culture, procedures of work) which interrelate within the context of performance improvement and this impacts the effectiveness of informal learning in terms of improving performance (Hackman & Oldham, 1980; Mueller *et al*., 2000). Beyond the context of the organisation, individual discretions play an important factor in motivating the team which, in essence, can influence the efficiency and effectiveness of informal learning for team performance (Mueller *et al*., 2000; Simz & Mazn, 1996).

Based on the above studies, it can be summarised that informal learning and improved performance (whether at individual or team level) within an organisation are indirectly related. At an individual level, it was illustrated that informal learning played a role in improving several skills but the studies that correlated how this can improve team performance are considerably limited. At a team level, with the importance of improving team performance and the role this plays in organisations, the role of informal learning remains ambiguous and, according to many scholars (e.g. Hackman & Oldham, 1980; Simz & Mazn, 1996; Mueller *et al*., 2000), is perceived differently. One of the main underlying reasons is the uniqueness of every organisation and the intervening factors (e.g. organisational structure, culture, procedures of work) which can accommodate or prevent the environment for informal learning to contribute to team performance. Therefore, as part of this research, the correlation of informal learning to team performance is investigated in the present study.

2.7 Facilitators/Barriers for Informal Learning

There are variations in the views of past researchers concerning the factors that facilitate informal learning. The disparity in knowledge can be explained or compensated only through informal learning which occurs through experience and activities associated with the work

(Grip, 2015). A study by Jeong *et al*. (2018) that involved 18 small- and medium-sized enterprises (SMEs) discussed some of the factors that influence informal learning such as reliance on informal learning, rapid/immediate learning and application, relationship/client needs-based learning, and extensive trial and error. Several factors are identified from past research as the main facilitators for informal learning. According to the contributions of early researchers such as Becker (1962) and Rosen (1976), individual employees possess a set of abilities and skills that they accumulate or improve through education, training, and development (Ndinguri *et al*., 2012). According to Pasban & Nojedeh (2016), organisational development is based on the knowledge accumulated by employees over time. In addition, these employees should be informed about how that knowledge can be applied within the organisation. More importantly, all employees should be encouraged and motivated to apply the knowledge in developing new processes, products, and methods for the benefit of the organisation (Cornacchione &d Daugherty, 2013). Therefore, it can be stated that knowledge development in an organisation is crucial and that informal learning plays an important role in that development. To gain a better perspective, the following sections provide insights into many of the main facilitators that enable informal learning in organisations. They explain and discuss facilitators and barriers for informal learning by elaborating on the following elements: characteristics of the job, characteristics of the employees, organisational characteristics, and management support.

2.7.1 Characteristics of the task

In an organisation, the characteristics of the task forms one of the variables that facilitate informal learning (Becker & Bish, 2017; Decius *et al*., 2019). Although for many jobs organisations prefer formal education, the case study by Becker & Bish (2017), which focused on 250 employees, found that most of the managers acquired their managerial skills and competencies through informal learning. To elaborate further, Dong-Yeol *et al*. (2018) concur that some dimensions of informal learning are best suited for certain jobs. In fact, the study by Decius *et al*. (2019) claimed that informal learning is best suited for blue-collar jobs while Dong-Yeol *et al*., (2018) cites the fact that informal learning occurs through interactions and observations. Although informal learning occurs through a multiplicity of ways *(*Kortsch *et al*., 2019), it is not well evidenced how skills can effectively be passed from one individual to another. Schurmann & Beausaert (2016) highlighted that the characteristics of the jobs and tasks act as drivers for informal learning. Susomrith & Coetzer (2019) used the job-demand

theory in testing the link between informal learning practices and the type of tasks that the employees are involved in. In support, Soila & Collins (2010) investigated informal learning in the Information Communication Technology (ICT) sector where the dynamic nature of the needs of the customers and the type of work calls for self-directed and autonomous learning. Furthermore, the multiplicity of challenges associated with the body of knowledge on ICT implies that it is not possible for the acquisition of all the skills through formal means. Based on interviews from 23 ICT staff, self-learning was both an obligatory activity that was integral for proficiency and success in the creativity-orientated and fast-paced profession. Another study by Abdul *et al*. (2016) investigated the situation inhibitors for informal learning by focusing on professional accountants. The study is premised by the idea that the characteristics of the job limit the potential for informal learning due to the prevailing circumstances facing the employees. The study found that lack of time, absence of support from peers, the distance between peers, and other structural inhibitions to learning were the main obstacles.

De Grip (2015) highlighted that, in high-performance workplaces, relevance of skills acts as one of the facilitators for informal learning to improve the performance of employees. The ability of employees to acquire skills and capabilities that are relevant to their particular job is an antecedent to improvement in performance (Carrasco & Silva, 2017). Ndinguri *et al*., (2012) and Kyndt *et al*. (2016) indicated that relevance of skills improves informal learning by sharing knowledge between workmates and peers which is a benefit to the organisation. In fact, improving the relevance of skills reduces the need for delivery of training and development programs to all employees and, instead, supports building and developing other skills through informal learning. De Grip (2015) explained that by filling a position with someone who has the relevant skills allows for knowledge crossover which can bridge the skills gaps among employees. Froehlich (2017) highlighted that relevance of the skills can facilitate more channels toward informal learning which supports establishing a better strategy in the long term in a workplace. A similar conclusion can be drawn from Becker & Bish (2017), who indicated that the realisation by managers that most of the managerial development processes relied on informal learning mechanisms contributed to their personal development. From another perspective, the relevance of the skills can motivate individuals to seek out knowledge through informal means (Carrasco & Silva, 2017). In the study by Lemmetty & Collin (2018) in a dynamic industry such as ICT, there is evidence that most professionals in this industry rely on informal learning to acquire knowledge and overcome challenges.

Based on the above studies, it can be stated that characteristics of a job play an important role in facilitating informal learning but can also be an inhibitor. This can be influenced by the nature of the job which may present major challenges such as time limits or additional pressure on an individual to inquire and seek knowledge. In terms of relevance of the skills, it is important that individuals fulfil their main job as this will form the primary foundation that enables informal learning channels.

2.7.2 Characteristics of the employees and demographics

The characteristics of the individual employees have been widely studied as one of the elements that impact informal learning *(*Kyndt & Baert, 2013; Patterson *et al*., 2017; Schurmann & Beausaert, 2016). These studies stated that informal learning can be perceived as a self-driven approach where employees should work toward gaining knowledge and skills. However, the specific set of characteristics that drives employees towards informal learning differ from one individual to another. For instance, the study by Lohman (2005), which targeted teachers, identified seven characteristics that can impact their willingness to engage in informal learning including 'initiative, self-efficacy, love of learning, interest in the profession, commitment to professional development, a nurturing personality, and an outgoing personality'. Another study by Susomrith & Coetzer (2019) indicated that informal learning can be driven by the extent to which employees proactively engage in the learning processes. This goes hand in hand with motivation of employees. A study by Lemmetty & Collin (2018) showed that motivation enhances the self-directed learning process. The study illustrated that motivation played an important function in highlighting the importance of learning to the individual and this supported enabling the individuals and other employees to participate in the process.

Demographics (e.g. age, gender, and ethnicity) can perhaps be recognised as the characteristics of employees which impact informal learning in an organisation (Khiat, 2017; Kusaila, 2019). Patterson *et al*. (2017) and Susomrith & Coetzer (2019) pointed out the role of demographics as one of the factors that impact informal learning in organisations. In the study by Kusaila (2019), it was concluded that men and women have different conceptualisations of the resources necessary for informal learning including time and technology. The study also revealed that older employees can adapt more to informal learning when compared to younger employees who rely on a more formal approach to learning. Another study by Arora-Jonsson

& Agren (2019) highlighted the potential disparity in learning when looking at gender within organisations. As another demographic character, age can be recognised as one of the important factors to consider when looking into informal learning within organisations. Many studies (e.g. Nilsson & Rubenson, 2014; Froehlich, 2017) showed that age influences the adoption of informal learning whereas younger generations have more tendency to accept and adopt formal learning when compared to older generations. Although Kusaila (2019) identified that older age groups had a greater tendency to adapt to informal learning, findings from another study (Preenen *et al*., 2015) found that older employees may potentially become reluctant to undertake informal learning. The study by Preenen *et al*. (2015) revealed that, over time, older employees have developed a set of skills and knowledge that support them in their daily tasks and overcome issues/complexities that they face based on their experience. In addition, the study highlighted that new employees would often rely on older employees to gain knowledge, develop experience, and understand the organisational orientation. It can be argued that the difference in findings between Preenen *et al*. (2015) and Kusaila (2019) can be reasoned by the fact that Preenen *et al*. (2015) focused on willingness to seek informal learning while Kusaila (2019) investigated the abilities to engage in informal learning. Other studies also elaborated on the role of length of service as one of the factors to be considered when looking into informal learning in organisations. Some studies (e.g. Anselmann, 2016; Caruso, 2017) asserted the direct influence on the tendency of individuals to gain and acquire a new set of skills depending on the nature of the job and the organisation that they are in. Educational attainment, in addition to the previous demographics, is also viewed as an important factor when considered as part of informal learning. Several studies highlighted the influence of educational level or attainment on informal learning. For instance, studies by De Grip (2015) and Kyndt *et al*. (2016) indicated that impact of qualifications acquired through formal training also influence the extent to which an employee engages in the transmission of knowledge through informal means.

It can be summarised that, based on the above studies, characteristics of the employees play an important role in facilitating informal learning but, in some instances, can also act as a barrier towards informal learning. It was found that willingness to learn and proactive engagement acts as major facilitators for informal learning. Although demographics can facilitate informal learning, their impact can also form a major barrier towards informal learning.

2.7.3 Organisational characteristics

Organisational characteristics refer to the organisational culture and the factors that determine the day-to-day activities (Milligan *et al*., 2015) where they can influence the willingness of employees to engage in informal learning (Schurmann & Beausaert, 2016). Caruso (2017) highlighted the link between the organisational culture and informal learning as the two contribute to the performance of the organisation as well as the management of knowledge. Referring to organisational culture, one of the most widely reviewed aspects is knowledge creation and formal learning in terms how they affect informal learning. To explain this, Bednall & Sanders (2017) investigated the extent to which formal learning affected informal learning based on data from 430 respondents drawn from 52 teams in the Netherlands. The findings revealed that formal learning was positively associated with informal learning, both in the short- and long-term.

The culture of an organisation can also impact the learning process which, in turn, impacts informal learning. A study by Field (2017) indicated that a variety of factors could affect the learning process such as delaying the commencement of the learning, interrupting the learning progression or terminating the learning process. For example, in the automobile sector, poor commitment from the firm's management, lack of transparency, and incorporating policies can impact motivations for learning and this could influence the learning process (Anlesinya, 2018). In addition to organisational culture, another organisational characteristic is the practices of Human Resources Management (HRM) and its implications in motivating informal learning. This was explored by Shariful & Pangil (2019) who collected data from 381 employees to determine whether the human resources practices in the organisations influenced informal learning. The results found a positive relationship between informal learning and HRM practices such as selective hiring, extensive training, performance appraisal, compensation practices, empowerment, and information-sharing. HRM practices, in fact, play an integral part of the organisational characteristics in the process of informal learning (Decius *et al*., 2019*)*. Another study by Johansson & Abrahamsson (2018) highlighted another situation inhibitor in a working environment where the culture can favour gender for some jobs, hence this can impact informal learning among employees within an organisation. From another perspective, culture is seen as one of the influencers on characteristics of employees in organisations. To elaborate, Kim & Mclean (2013) used the five dimensions of national culture by Hofstede (2001) in investigating the effects on informal learning. The study posits that the

dimensions of the culture determine the actions, choices and practices of the individual, thus making it possible to map the willingness of individuals toward informal learning in the workplace.

Informal learning in organisations relies highly on the opportunities created which help employees in their jobs and personal development where this is associated with the culture embedded within the organisation (De Grip, 2015). This was acknowledged by Lindbeck & Snower (2000) who stated that informal learning can be rationalised in organisations by moving towards multi-task learning because it supports creating multi-skilled employees who are capable of utilising hard and soft skills in the workplace. It is important to indicate that there exists a harmony between all the characteristics (job, individual, and organisational) discussed which often is the case in most (if not all) organisations where this will ultimately impact informal learning. For instance, a study by Froehlich *et al*. (2014) investigated the influence of the approaches to informal learning among bank officials, focusing on the recognition of the lack of conclusive research on the impact of informal learning on employees and how contextual factors influence informal learning in the workplace. The study included 143 respondents and found that there is a relationship between the key factors influencing informal learning including the learning approach leadership styles, organisational culture, and learning outcomes.

In summary, and based on the reviewed studies, organisational culture and HRM practices play a significant role in facilitating informal learning. Although recruiting employees who are not fit for the job or organisation can be problematic, informal learning can be practiced as one of the mechanisms to overcome potential gaps and improve the employee skill set. It was concluded that, even in organisations where employees fit the job/organisation, moving towards multi-skilling through informal learning is recommended to cope with current and future challenges. The next section focuses on aspects related to top management support as it plays a major role in the workplace and this will support capturing its effect towards informal learning.

2.7.4 Top management support

It can be stated that top management support is an embedded element within organisational characteristics but its significance to promote informal learning in workplace is major, hence

it is important to acknowledge its role holistically (Crouse *et al*., 2011). Existing studies (e.g. Clarke, 2005; Eraut, 2004) elaborated on the necessity of top management support in facilitating informal learning in the workplace. For instance, Clarke (2005) identified four elements that define a favourable learning environment: support through availability of infrastructures for training and development, opportunities for job challenge and reflection, opportunities for formal learning, and empowerment and effective communication frameworks. However, these elements do not necessarily contribute to the informality of learning since they are bound to formalise the process of learning.

The challenge lies in how top management supports informal learning without allowing formalisation of the process to drive the activities associated with informal learning. Hence, it is important that top management drive many of the activities that support employees' skills and development in their job through informal learning. For instance, Susomrith & Coetzer (2019) highlighted that, based on a study of 203 employees, the presence of task-based learning opportunities driven by the supervisors is a key component in informal learning. The study concluded that with task-based learning employees have the tendency to learn from what they participate in and practice daily. More specifically, the study by Froehlich *et al*. (2014) indicated that leadership style has a direct effect on informal learning and it was highlighted that transformational leadership style has a significant impact on the development of careers. This was argued that the reason for this was transformational leadership whereby employees are empowered (Nongard, 2014; Shelton, 2012). On the other hand, they indicate that transactional leadership styles were associated with core skills and job performance. This is because transactional leaders drive employees towards acquiring the skills which are necessary for the jobs that they are particularly involved in to enhance efficiency (Masa'deh *et al*., 2016). In another study of 390 respondents by Liezelot *et al*. (2017), it was found that, as part of informal learning, feedback (managerial coaching) and reflections play an important part in determining the acquisition of generic and work-related outcomes. Based on the findings, the acquisition of generic skills was dependent on the learning conditions including the information available, the type of feedback, the ability to reflect on what is learned, and the availability of managerial coaching. This illustrates the importance of top management support role within informal learning. The study concluded that, for job-specific learning outcomes, coaching plays an integral role in the acquisition of generic and specific learning outcomes.

As a result, top management support can impact informal learning through several strategies and factors. Strategies include recruitment of employees that display high levels of proactivity in the workplace, encouraging experimentation, promoting favourable relationships between employees, and creating a culture of reflections in the organisation. It was also shown that several factors such as leadership styles, type of informal learning techniques (e.g. managerial coaching and reflection), and availability of information can also impact informal learning.

2.7.5 Summary of facilitators and barriers

The literature showed that informal learning in organisations depends on the circumstances. With relation to job characteristics, the nature of the job plays the ultimate role in facilitating informal learning but can also be an inhibitor where employee characteristics rely on more factors, including willingness to learn and proactive engagement to facilitate informal learning. Other factors, such as demographics, can either be facilitator or a barrier. With relation to organisational characteristics, organisational culture and HRM practices play significant role in facilitating informal learning. Top management support can facilitate informal learning through several strategies including recruitment of employees that display high levels of proactivity in the workplace, encouraging experimentation, promoting favourable relationships between the employees and creating a culture of reflection in the organisations' management teams. In contrast, other factors related to top management support, such as leadership style and informal learning techniques, can facilitate or act as barriers toward informal learning. Although there are many factors, which change from an organisation to another, they have illustrated that informal learning could act as both and barriers where this is context and organisation dependent.

2.8 Conceptual Framework

The literature showed that informal learning can be recognised as an efficient learning process that has many benefits for individuals and organisations. Broadly, informal learning does not have a unique definition or common understanding but, for the purpose of this research, it is defined as an unstructured approach to learning that can occur at different levels including individual, dyadic and team (Yang & Johnson, 2012). Although some models (e.g. Nomological and Dynamic) that support the understanding of informal learning processes in organisations exist, these models acknowledge informal learning at a generic level which can be complex to understand how informal learning is facilitated in organisations. The

significance in acknowledging informal learning at three different levels is providing a structured and holistic lens into informal learning and how it is facilitated in organisations.

The unstructured nature of informal learning poses a major challenge when measuring the impact of informal learning, hence looking into how informal learning at different levels can impact team performance is one of the initial steps that this research will examine. This will also answer the first research question. The literature also showed that there are a number of facilitators and barriers toward informal learning where common factors such as characteristics of the task (Dong-Yeol *et al*., (2018), employees, and demographics (Schurmann & Beausaert, 2016), type of organisation (Schurmann & Beausaert, 2016), support from senior management (Susomrith & Coetzer (2019). It can be stated that research on facilitators and barriers toward informal learning is extensive but their impact is circumstantial and organisationally-dependent (Ellinger, 2005; Nyfoudi, 2015). For instance, Yang & Johnson (2012) concluded that top management support can facilitate informal learning at dyadic and team levels by recommending social interaction to create an appropriate medium for informal learning. Another study by Kusaila (2019) highlighted that informal learning differs based on gender in terms of learning aptitude. Therefore, it is complex to assert the definitive impact of facilitators towards informal learning within the context of this study as there can be a variety of different facilitators that can impact informal learning.

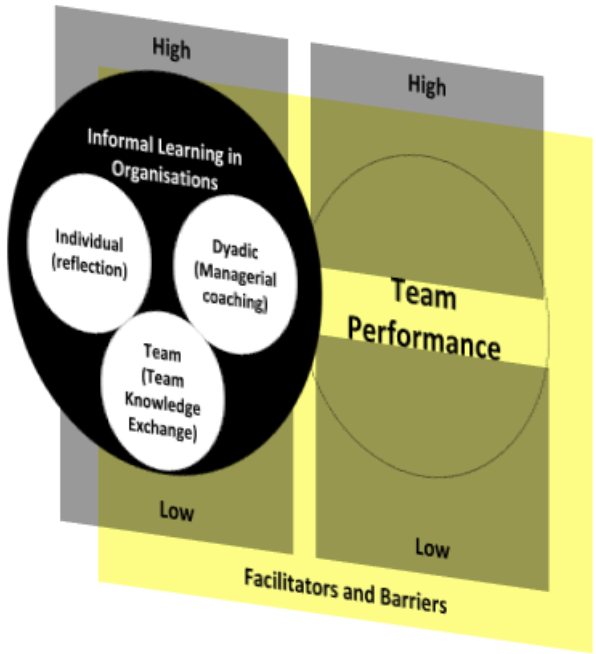


Figure 2.3. Conceptual framework for the study.

Based on the outcomes derived from the literature, it can be stated that there is an interrelationship between informal learning at three levels and team performance and this is influenced by informal learning's facilitators and barriers in organisations. Studies from the literature have continually attempted to examine the impact of informal learning on team performance but this was seen as complex and very difficult to assert within the merits of informal learning (Choonara *et al*., 2017; Sibarani *et al*., 2015; Yang & Johnson, 2012). This was attributed to many factors including the unstructured nature of informal learning, complexity to assert indicators for informal learning and team performance, and the variety of circumstances that can exist within different organisations. The organisational circumstances, in return, can include a variety of factors that facilitate informal learning within organisations. The above association defines the conceptual framework (Figure 2.3) that this study is bounded within and, more importantly, corresponds to the objectives incepted earlier in Chapter 1. This association will be examined within the merit of informal learning at the three levels as this will support a more structured and holistic understanding within the case study investigated in this research.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter draws an overview of the methodology followed for the research project. The chapter commences with identifying the research philosophy adopted for the research and justifying how it fits the phenomenon investigated. A view of the methodological approach for the research is then explained and discussed, highlighting the appropriateness to the research gap identified in the previous chapter. This also includes explaining the research design, which rationalises the methods that will be used to collect the data, and how it will be analysed. The chapter concludes with highlighting ethical considerations and alignment of the research project to the appropriate codes of conduct.

3.2 Research Philosophy

3.2.1 Introduction

The philosophy of research is to examine how information about a subject of investigation is gathered, analysed, and adopted (Saunders *et al*., 2016). Research also investigates how people see the reality and truth that they purport to analyse and how these beliefs underlie the assumptions upon which researchers' perspective and knowledge are based (Burrell & Morgan, 1979). Therefore views of reality cannot be directly compared since each is considered as equally good (Hughes & Sharrock, 1997).

There exist many research philosophies and the choice relies on nature of the study and complexity of the research phenomenon being investigated (Saunders *et al*., 2016). According to Hirschheim (1985), positivism has been tailored to match society's expectations about validity which implies that some scientific studies could be considered invalid even though positivism is useful for eliminating the influence of researchers on their study's outcomes. Critics of positivism argue that the paradigm tends to ignore the human aspect of studies (Rubin & Rubin, 1995). Gill & Johnson (2002) observe that humans are not stationary but are subject to a variety of forces including attitude, behaviour, feelings, and perception which the positivist philosophical framework usually discounts. On the other hand, the objectivity of interpretivist research is questionable due to the subjective nature of this approach (Saunders *et al*., 2016). Combining both approaches, as is suggested by pragmatism, allows for a more holistic and comprehensive study while mitigating potential issues with the validity of the research findings. Morgan (2014) suggests that pragmatism allows studies to focus on the nature of

experiences rather than the nature of reality and so examine the deep contextual differences of the issue being investigated.

3.2.2 Epistemology and ontology

Philosophical assumptions determine the epistemological framework of a study and influence a study's goals and purpose (Knight & Cross, 2012). Norris (2005) indicated that research epistemology focuses on how research can determine what is true and acceptable knowledge within its area of examination and especially how this process is facilitated by rigorous test methods that determine what observations may be depicted as facts. The perspective of research epistemology is most relevant to scientific studies or studies where facts or information can be proven through rigorous test techniques (Norris, 2005).

Research ontology is a component of the research paradigm that relates to the study of being and the nature of reality (Saunders *et al*., 2016). Ontological perspectives on research are often concerned with the capacity of a study to question perceptions regarding the existence of social entities. Consequently, objectivism and subjectivism are key issues which need to be considered as part of a study's ontological perspective (Norris, 2005). The objective position is that social actors exist independently of social phenomena and their interpretations while subjectivism entails interpretivism which argues that the development of social phenomena is based on the perceptions and actions of social actors who are, in turn, affected by those social phenomena (Saunders *et al*., 2016).

For this research objectivity is anticipated because it allows for analytical reasoning and logical deductions and strengthens the validity of the research outcomes. The case study chosen for this research is appropriate as it represents one of the leading telecommunication organisations in the Middle East and, as a result, continually aims to develop and improve their performance. Despite the importance it occupies in Qatar and the Middle East, learning within that company takes several forms, which can be formal and informal, hence the decision to explore how informal learning occurs in such an organisation was made as the phenomenon investigated in this research. Additionally, the researcher does not have any affiliation with the case study organisation as a past or current employee which allows for objectivity through a balanced positional relationship with the study participants. The study also uses subjective aspects to promote the enrichment of the contexts and deeper meanings necessary to understand

participants' diverse experiences of informal learning in the workplace (Saunders *et al*., 2016). Consequently, this study combines subjectivist and objectivist epistemological perspectives to enhance its capacity to produce deep insights while ensuring the validity of the results.

3.2.3 The chosen research paradigm

This study aims to provide an improved understanding of facilitating informal learning at three levels across teams (self-reflection, managerial coaching, and team knowledge exchange) in Qatar (Yang & Johnson, 2012). Based on the reviewed literature, informal learning is understood to be complex as it does not have a well-defined structure when compared to formal learning. Although this does not discard its value and importance it poses the difficulty of objectifying its value and how it influences the learning process in organisations. With reference to some of the existing studies on informal learning, the methodological stance adopted by different researchers have varied. For instance, Jeon & Kim (2012) adopted a positivist paradigm in their study which identified several factors that affect informal learning. This approach allowed researchers to analyse observed task activities and enhanced studies' validity associated with subjective approaches. However, the objective approach may have limited the context necessary to elucidate research findings in terms of understanding complex meanings that often are subjective. A study by Nachmias *et al*. (2021) used an interpretivist-led approach using semi-structured interviews with 51 line managers exploring the perceptions of diversity management in organisations. The study highlighted the role that line managers play in relation to leadership and diversity management and how this supports a more accommodating environment for workplace learning. An objective-based approach would allow a more structured approach to achieve outcomes whereas subjective-based approaches provide more in-depth understanding into some of the complexities that are associated with complex phenomenon. Considering the nature of this study, the use of subjective and objectives stances allows a logical and critical research enquiry hence a pragmatism research paradigm was adopted.

In the context of informal learning several studies have adopted pragmatism, for instance, a study by Eraut & Hirsh (2010) looked into the importance of learning at the workplace for individuals, groups, and organisations. A later study by Wilson & Hartung (2015) adopted the use of mixed-methods research to investigate the types of learning by looking into 79 leaders from 22 organisations. The study identified five learning outcomes: informational, conceptual,

operational, reflective, and social learning and described the overall distribution of these types of learning in the community. Although the study used mixed methods, it did not elaborate on the link between quantitative and qualitative findings, it engaged only leaders, and did not consider learning at team level. The use of mixed methods in the context of human resource management studies (Anderson, 2015), to which this research aligns, is seen as a major value-adding methodological approach as it supports gaining richer insights and allowing more-informed decision-making based on the findings. A recent study by Anderson (2017) portrayed the importance of linking the appropriate methodological approach to the research question and how it plays an important role in maintaining the rigorousness of research studies in the context of human resource-based research. She added that there are often issues associated with sampling and how to ensure the generalisability of the findings, thus suggesting the use of triangulation which engages multiple methods to achieve more significant and logical research outcomes.

The adoption of a pragmatist stance allows this study to holistically gain critical insights (Morgan, 2014) relating to informal learning at different levels of the case organisation studied allowing for detailed and rich insights into the research question. The use of pragmatism allows a logical synergy between positivism and interpretivism in a single study (Galliers, 1991; Collis & Hussey, 2009). According to Creswell (2003), pragmatism allows an overarching approach toward the problem statement and allows the flexibility of applying different methods to understand the problem (Hanson *et al*., 2005). One of the major advantages of adopting a pragmatism stance in this study is to allow the integration of various issues identified in the research while ensuring the validity of the findings (Collis & Hussey, 2014). This is because the pragmatist philosophy allows acknowledging different individuals' perspectives in a particular context. This aspect of pragmatism is particularly important for this study because it enhances the study's capacity to understand the extent of informal learning in the organisation being investigated in this study. Another important aspect of using pragmatism is that it would link both quantitative and qualitative findings to produce consensus research outcome which would address more significant and robust contributions (Larsen, 2017). The results of this study can form a valuable practical insight that reinforces the commitment of the researcher to deploy knowledge earned into their practice.

3.3 Methodological Approach

3.3.1 Introduction

Creswell *et al*. (2003) define mixed-methods research as 'the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research'. This is the approach used in this study. There are two fundamental methodological choices available for researchers: qualitative and quantitative research methodologies. Qualitative methodological choices are suited for investigations into novel subjects whereby there is limited background information (Creswell *et al*., 2003). Due to the lack of sufficient background information such phenomena characteristically lack specific and explicit variables, models, and hypotheses to predict the relationship between those variables. Therefore, for this research, in-depth analysis approaches are utilised to explore the subject in the second stage of this study (as outlined below). Quantitative methodological choices are utilised in investigations about research phenomena that have been widely studied in the past. According to Tashakkori & Teddlie (2003), this methodology is applied to confirm whether the existing models and hypotheses explain the relationships between the explicit variables. For studies that investigate complex phenomenon such as informal learning, the exclusive use of quantitative techniques would not allow for exploratory and adaptive insight into the subject of investigation and would, therefore, diminish the study's capacity to achieve its aims. Moreover, using only qualitative research techniques would not allow the researcher or others to replicate the study's results due to variability in researcher bias (Bryman, 2006) and would entail other shortcomings such as the subjective nature of the collected data (Saunders *et al*., 2016). Consequently, relying only on a qualitative approach would not lead to robust research outcomes even though it offers an in-depth investigation into the subject. Therefore, the mixed-methods approach is employed to produce novel insights that have not been reviewed previously into the study while measuring the impact of the variables that have been explicitly studied in the past (Sekaran & Bougie, 2015).

There is much reliable research that uses the mixed-method approach in the field of informal learning. A study by Janssens *et al*. (2017), adopted a mixed-method approach to explore the relationship between the conditions of learning and informal learning outcomes. In their study, a survey of 390 police officers was conducted alongside interviews with nine inspectors. The study's survey focused on informal learning outcomes as adapted to policing and law

enforcement while the interviews focused on evaluating the workplace learning conditions that influenced informal learning outcomes (Janssens *et al*., 2017). The survey's results aligned with the outcomes of the interview analysis allowing the study to identify the relationship between workplace learning conditions and the outcomes of informal learning. Similarly, Imants *et al*. (2009) used a mixed-method approach to explore the link between teachers' informal workplace learning and their perceptions of workplace conditions. Based on data from 32 schoolteachers, purposeful sampling was adopted in the selection of two cases (Imants *et al*., 2009). Quantitative techniques were incorporated to locate the two cases within the context of the other participants while qualitative methods were used to describe the cases in detail (Imants *et al*., 2009). This helped the researchers draw conclusions that fulfilled their aim of identifying the divergent ways in which workplace conditions can affect learning outcomes (Imants *et al*., 2009). Another recent study, conducted by Leicher & Mulder (2016), explored the contextual variables that affect engagement in workplace learning activities in retail banking and used the mixed-methods approach to design a better questionnaire based on concrete experiences provided in the focus group phase. In this study, questionnaires were completed by 178 research participants while interviews were carried out with four professionals within the retail banking sector. The results obtained from the qualitative data analysis provided insights into both the indirect impacts of error strain in banking and engagement in social learning. Conversely, quantitative analysis of the survey identified the significance of estimation errors and their impact on positive learning and engagement by bankers (Leicher & Mulder, 2016).

3.4 Research Design

The sequential explanatory mixed-methodology design was selected for this project since, among the many mixed-methods designs, it best fits the study's questions and purposes. According to Morse (1991), the sequential explanatory design is used to explain and infer the results from the quantitative study by collecting additional data for qualitative analysis in case the results from the quantitative study are as unexpected (see Figure 3.1).

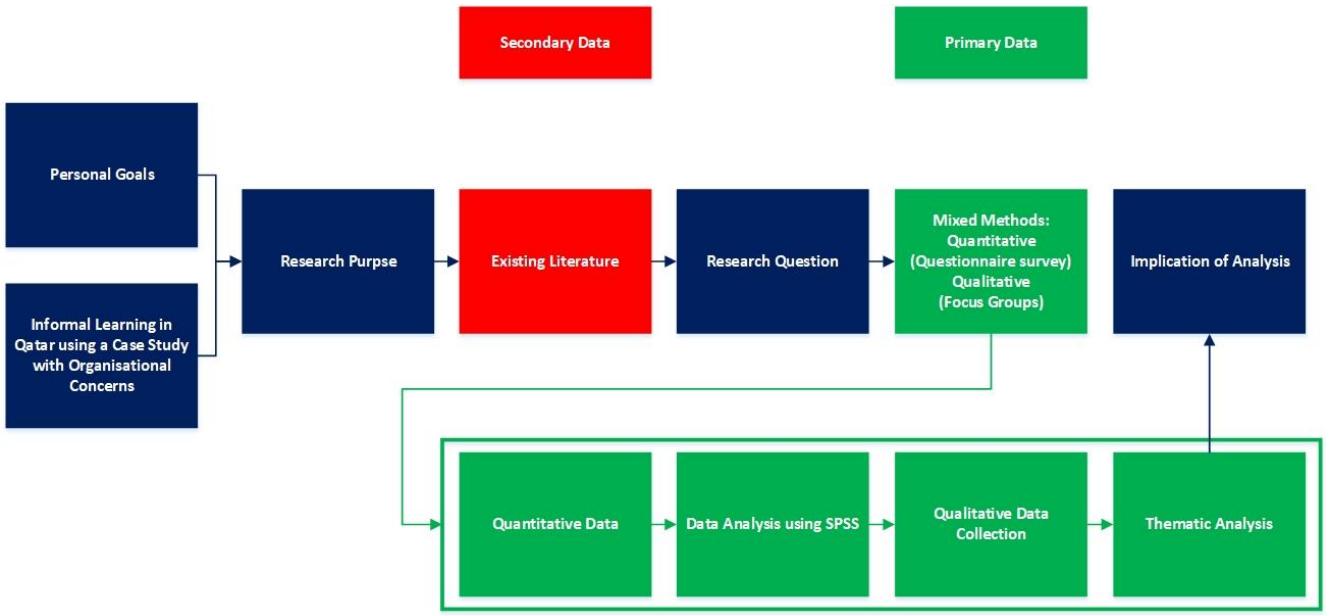


Figure 3.1. Research design for this research.

The sequential explanatory design is a popular approach to mixed-methods research that has several advantages including the ability to test emergent theories and the integrated interpretation of quantitative and qualitative data during data collection (Creswell, 2009). Furthermore, this design appeals to researchers due to its straightforward nature. Consequently, one advantage of adopting this approach is that a sequential explanatory study can be completed in clear and easy steps which makes the data easy to describe and present (Creswell, 2009). Van Dellen & Heidekamp (2015) used the sequential explanatory design in their study of how employees from a company in the Netherlands experience the freedom to learn at work. In implementing this approach they suggest that its rationale is that quantitative data collection allows for the identification of the general issue under investigation while in-depth qualitative data allows researchers to refine the details observed quantitatively. In the sequential explanatory design, the research collects and analyses the quantitative data which is followed by qualitative data to provide more details about the results which are obtained via the quantitative phase. Therefore, and in line with the research aim, this research adopts a sequential exploratory design approach. This commences by reviewing the existing knowledge available in the literature to draw out the concepts that underline the framework of the study (Objective 1). The quantitative data will support examining to what extent informal learning is being applied and how it impacts team performance (Objective 2) whereas the qualitative data will provide a more in-depth enquiry on factors that impact informal learning how they are positioned within organisations (Objective 3). Using the analysis derived from both the

quantitative and qualitative data, the research will develop a revised framework (Objective 4) that addresses the research aim.

Due to nature of this research, a case-study approach was used as this supports capturing the investigated phenomenon and its dynamics in a natural setting (Eisenhardt, 1989; Yin *et al*., 2014). The use of case-study research has widely been adopted in mixed-method based studies (Markocy, 2000; Yin *et al*., 2014). In addition, the case-study approach in mixed-methods research allows the researcher to acquire deeper understanding of the subject in a contextualised manner which supports drawing meaningful conclusions (Hammersley, 2008). The case study is a telecommunication company located in Qatar. As the study included over 40 teams from the company, a questionnaire was initially used in the collection of data from the teams within a short time frame in a cost-effective way (Saunders *et al*., 2016). Furthermore, the results obtained through questionnaires were analysed through the use of software tools which provided objective analysis. However, due to the focus of the research it was also essential to justify and explain differences in the way informal learning is practised by the teams. Therefore, this required collecting in-depth data using focus groups by engaging in discussions with research participants to identify key patterns and themes which would help elucidate the focus area of the research (Creswell, 2009).

3.5 Data Collection

This section aims to explain and justify the data collected to support answering the research questions in this thesis. As shown in Figure 3.1, the data collection process followed two phases: quantitative and qualitative. In this research, the initial data collection was performed through surveys, after which the data was analysed with SPSS (Statistical Package for the Social Sciences) tool as it supports a more structured and logical approach towards quantitative data analysis. The qualitative data was then collected using focus group interviews; the questions from the qualitative research were designed to expand and provide more insights on the initial findings obtained through quantitative approaches.

3.5.1 Phase 1: Quantitative data

In this phase, the activities associated with the survey study were included. The process focused on indicating the mechanisms through which quantitative data is collected, synthesised, analysed, and presented. In developing the questionnaire, the aim was to identify teams who

scored high or low on the informal learning measures by considering the performance of each team. It is important to indicate that, in collecting the quantitative data, two samples were targeted: employees and supervisor. As a result, the questionnaire design for each group has differed. Figure 3.2 shows the sequence of the quantitative data collection phase.

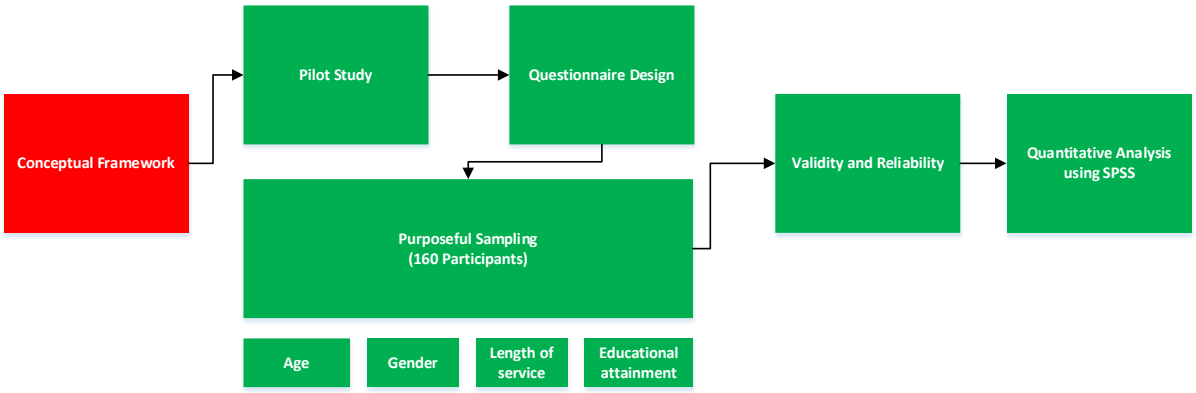


Figure 3.2. Flow Diagram of quantitative data collection (Phase 1) in the study.

3.5.1.1 Pilot survey

For this research, it was important to conduct a pilot study for the first phase to ensure that the questionnaire design included the right level of questions, appropriate use of relevant terminologies, and ensured that participants were able understand the intention of the questionnaire survey. Respondents' understanding of survey items plays a major function in the quality of questionnaire data (Passmore *et al*., 2002). Therefore, a pilot questionnaire was carried out before the full-scale study. This involved the researcher test-running the survey to get feedback on clarity and evaluate respondents' understanding of the concept being investigated. After the pilot questionnaire, amendments were made where necessary.

For the pilot, a team that was part of the corporate services department from the case-study organisation was selected and the questionnaire was issued to two employees and their supervisor. As result of the pilot study, several questions were rephrased to provide more linguistic clarity. Another important outcome of the questionnaire was changing the link where participants can access the survey because there were potential access restrictions by the selected case study organisation. Based on the feedback received, the researcher met the research supervisors to enhance the design of the questionnaire.

3.5.1.2 Sampling

Due to nature of this research, purposeful sampling was adopted in selecting the participants for the questionnaire survey. According to Saunders *et al*. (2016), purposeful sampling is a subjective approach where the researcher's judgment is used to select study participants; the selection of the sample is based on participants' relevance which is determined by the extent to which they have characteristics of interest to the study. Also, the decision to use this sampling technique considered the nature of the case organisation as an international firm with high standards. This consideration allowed for the examination of practices within the context of Qatar and the comparison of these practices with those of other environments. Additionally, purposeful sampling was based on the perception of the researchers that the participants selected would make useful contributions to the research based on insights from their experiences (Yin *et al*., 2014). Saunders *et al*. (2016) suggested that purposeful sampling allows researchers to select their research sample based on their assessment of whether they would be able to provide valuable insight into the research process. Consequently, this approach allows the study to target individuals expected to be valuable to the study. Determining the acceptable sample size is a critical element that can affect the quality and accuracy of a study (Bartlett *et al*., 2001; Creswell, 2011). Moreover, a high non-response rate can lead to misleading results as samples represent only those who reply (Kelley *et al*., 2003). The higher the response rate for a questionnaire, the less significant the impact of sample bias and error will be on the study (Zikmund *et al*., 2012). Generally, questionnaire surveys report low response rates, usually not exceeding 35%, when compared to response rates for focus groups and other qualitative tools like interviews (Blumberg *et al*., 2005; Saunders *et al*., 2007).

In the context of the selected case-study organisation, with over 800 employees and more than 100 supervisors working in many teams, the researcher decided to distribute the survey to 65 teams to ensure the validity and reliability of the study. For this study, it was important to maintain a minimum number of team members (two or more) to include the team in the research data. Following the distribution of the questionnaire, 47 of the 65 supervisors invited to participate completed the questionnaire, representing a response rate of approximately 65% whereas of the 492 employees invited to participate in this research, 160 employees completed the survey. However, of the 160 that participated in the questionnaire only 146 were accepted and this is due to two reasons: the participant did not fully complete the questionnaire survey or the link to the questionnaire survey was not accessible. In fact, this response rate may reflect

various factors including the ability of the employee company's IT system to access the online survey web page. Virus protection incorporated in the company's system was implemented to prevent viruses and phishing (false/hacking) emails being received by the employees. This is among the largest sample sizes of any informal learning case study in the field. Other prior case studies (Chong *et al*., 2015; Imants *et al*., 2009; Saleem & Perveen, 2017) reviewed by the researcher had smaller sample sizes. In summary, The selection of the teams followed the below criteria:

(1) When questionnaires were not returned by the team supervisor the data by the subordinate officers were excluded from the database.
(2) When a team had only a single respondent all the team's data, including that of the supervisor, were excluded from the database.
(3) When the main survey questions were not completed the responses were excluded.

Understanding the demographics of the participants is important to this study because it facilitates a deeper appreciation of the respondents' influences. Additionally, knowledge of the participants' demographics is important to exclude the influence of superfluous variables by controlling factors that could affect the relationship between outcomes and antecedents at a team level. The literature review highlighted the role of variables that relate to the effects of the characteristics of teams on informal learning activities. Based on findings from the literature, for this study the impact of four demographic characteristics will be examined as part of the quantitative phase. The four demographic characteristics are: age (e.g. Froehlich, 2017), gender (e.g. Arora-Jonsson & Agren, 2019), length of service (e.g. Caruso, 2017), and educational level (e.g. Kyndt *et al*., 2016).

Questionnaires were distributed to potential participants by email. The researcher met with the main management team in the company's head office several times to co-ordinate this process. A list of all the employees' names and emails, in all units surveyed, were provided by the company. The company management team sent an email to all employees to support the research (see Appendix 3). Invitations to the study were sent by email and the employees were provided with a link to the Qualtrics survey website and instructions to access the questionnaire survey. The employees and their supervisors were provided with unique personal codes to link each supervisor's data with their team's data. A uniform email template was used in all the

emails sent to the employees and supervisors (see Appendix 4). Before sending the survey invitations, the researcher discussed the survey's objectives and distribution approach with the HR manager and senior managers. The distribution method had some defects related to misunderstandings and vague questions. To mitigate these defects, the researcher made herself available to answer questions and visited the branches and the main offices. The researcher collected the quantitative data over four months.

3.5.1.3 Survey design

To design the survey for this study, a critical literature review was performed to identify surveys that were similar and reliable, for example dimensions of the Learning Organisation Questionnaire by Marsick & Watkins (2003), who classified the learning organisation into two components: the first represents people who comprise an organisation and the second represents structures and culture created by the social institution of the organisation. Within their model, there are four levels: individual, team/group, organisational and global where each of these levels belong to one or both of the components specified earlier. A later study by Felfe (2006) used a Multifactor Leadership Questionnaire to collect data about the leadership styles, which focused primarily on transformational and transactional leadership. Although useful, the study is more focused on a particular informal learning level (managerial coaching) and therefore cannot be extended to individual or team knowledge level. Another questionnaire by Kyndt *et al*. (2013) was used with the focus on assessing perceptions on available learning conditions and learning motivation. Although the study provided useful insights into informal learning, the questionnaire was very context specific and could not be extended to other contexts. More importantly, the focus within the questionnaire is more concerned with the characteristics of the job and environment which can be limiting.

Therefore, looking at the above questionnaires from several studies, it can be stated that to answer the research question in this thesis a more-inclusive questionnaire was required. In other words, the above questionnaire, although benefitting research studies on learning and some on informal learning, are considerably limited in the scope and do not provide flexibility to identify the activities (e.g. reflection and learning from supervisor) of informal learning at multiple levels (individual, dyadic and team) with relation to informal learning in organisations. A study by Yang & Johnson (2012) developed a collective survey that attempted to encompass multiple questionnaires available from the literature to identify measures for

informal learning at three levels. The study provided classification that responded to different levels and team performance which align with the focus of this research study. Therefore it was used to derive the questionnaire.

The initial survey questions used in this study were drawn from validated measures (Yang & Johnson, 2012) that are identified in the literature and based on the measures (see tables 3.1, 3.2 and 3.3) that will be explained in the next section. The type of questions included in the questionnaire survey were:

- Closed-ended questions: respondents were asked demographic questions and yes/no questions about their belief in the importance of informal learning in the workplace.

- Rating scale questions with Likert-type scales: informal learning activities and informal learning variables were both measured through a set of five-point Likert-scale questions (Strongly Disagree (1), Disagree (2), Neither Disagree nor Agree (3), Agree (4), and Strongly Agree (5)).

Two surveys were developed: the employee survey and the supervisor survey. The reason for developing two separate questionnaires was to allow the survey to measure unique variables, such as the performance of the employees concerning informal learning, as the required performance data could only be obtained from supervisors. Turner *et al*. (2017) suggest that to ensure that the research design triangulates the research data a strategy that allows for measuring unique variables from multiple inputs facilitates the development of comprehensive insight into specific issues being investigated by the research. This strategy allowed this study to specifically examine variables that align with the research question regarding the relationship between informal learning within the case-study organisation and team performance.

3.5.1.4 The employee survey

The survey divided informal learning items into various levels following prior studies (Bednall et al., 2014; Berg & Chyung, 2008; Ivaniva, 2002). In other studies (Bakkenes *et al*., 2010; Kwakman, 2003) a distinction is often made between groups of activities associated with informal learning such as reflection on daily activities, knowledge sharing, and innovative

behaviour (Bednall *et al*., 2014). Table 3.1 presents a summary of the various measures used in this research. The primary aims of the employee survey were to determine what informal learning activities were happening in a team and at which level they occurred. Following the classification of Yang & Johnson (2012), three main levels formed the focus of this study: reflection, learning from a supervisor, and team learning.

Variable	**Measurement**	**Source of Measurement**
1.Informal learning	1.1 Reflection	Kember, D. *et al*. (2000). Development of a questionnaire to measure the level of reflective thinking. *Assessment and evaluation in higher education*, 25(4), 381–395.
	1.2 Learning from supervisors	Mclean, G.N., Yang, B., Kuo, M.H.C., Tolbert, A. S. & Larkin, C. (2005). Development and initial validation of an instrument measuring managerial coaching skill. *Human Resource Development Quarterly*, 16,157–178.
	1.3 Team learning	Van den Bossche, P., Gijselaers, W.H., Segers, M. & Kirschner, P.A. (2006). Social and cognitive factors driving teamwork in collaborative learning environments. *Small-Group Research*, 37(5), 490–521.
2.Team performance	3.2. Overall team performance	Janz, B. D., Colquitt, J.A. & Noe, R.A. (1997). Knowledge worker team effectiveness: The role of autonomy, interdependence, team development, and contextual support variables. *Personnel Psychology*, 50(4), 877–905.

Table 3.1. Measures used in the survey based on Yang & Johnson's (2012) study.

For reflection, the survey developed by Kember *et al*. (2000) and used by Yang & Johnson (2012) was used in the current project because this instrument is internally consistent, reliable, and relevant to the subject of investigation (Lucas & Tan, 2006). Additionally, the reliability coefficient of the instrument is high (Cronbach's Alpha = 0.85) (Yang & Johnson, 2012). The instrument includes various statements related to reflection (see Table 3.2).

Measure (constructs)	**Items: survey questions**
Self-reflection	I always question the way others do things and try to think of a better way.
	I like to think over what I have been doing and consider alternative ways of doing it

	I often reflect on my actions to see whether I could have improved on what I did.
	I re-appraise my experience so I can learn from it and improve for my next performance.

Table 3.2. Items used in self-reflection section (Kember *et al*., 2000; Yang & Johnson, 2012).

For learning from supervisors (Table 3.3), the instrument for measuring managerial coaching skill developed by McLean *et al*. (2005) was used in the current study. This instrument has been used by many researchers in diverse settings (Agarwal *et al*., 2009; Baron & Morin, 2009; Ellinger, 2013) and it has a high-reliability coefficient (0.92) (Yang & Johnson, 2012).

Measure (constructs)	**Item: survey question**
Managerial Coaching	Encouragement from my supervisor, especially about taking risks on my career decisions, is important to me.
	To help me think through issues, I like it when my supervisor asks questions rather than providing solutions.
	I always try to seek constructive feedback from my supervisor.
	I know that my opinions/suggestions are appreciated by my supervisor even when they conflict with his/hers.
	I like that my supervisor uses real-world cases, scenarios, and examples to help me learn.
	I often tell my supervisor whether and how their feedback and interactions with him/her are helpful to me.
	I trust that my supervisor always shares his/her feelings openly in conversations with me.
	I trust that my supervisor focuses on my needs in discussions with him/her.
	My supervisor and I leave time for relationship building when interacting with each other.
	I look for connections with my supervisor when being coached in the workplace.
	I am open and candid with my opinion with my supervisor in difficult work situations.
	I openly share my values with my supervisor when being coached.

Table 3.3. Items used in the managerial coaching section (Mclean *et al*., 2005; Yang & Johnson, 2012).

For team learning (Table 3.4), an instrument developed by Van den Bossche *et al*. (2006) was used. This instrument has been adopted by several similar studies due to its characteristic uniqueness and high-reliability coefficient of 0.92. (Bell, 2012; Decuyper *et al*., 2010; Stagl *et al*., 2008; Yang & Johnson, 2012).

Measure (constructs)	**Items: survey questions**
Team Knowledge Exchange	Members of my team share all relevant information and ideas.
	Members of my team listen carefully to each other.
	If something is unclear, we ask each other questions.
	Members of my team elaborate on each other's information and ideas.
	In my team, information from one member is often complemented with information from another.
	My team concludes the ideas that are discussed in the team.
	My team tends to handle differences of opinion by addressing them directly.
	In my team, comments on ideas are acted upon.
	Members of my team often ask each other critical questions to verify different opinions and ideas.

Table 3.4. Items used in the team learning section (Van den Bossche, 2006; Yang and Johnson, 2012).

In addition to the measures indicated in Tables 3.2, 3.3 and 3.4, the survey included the following sections (see Appendices 5 and 6):

- ***Welcome page*:** This is the introductory part of the survey intended to clarify the objectives of the study and to assure that participation is voluntary. This section also assures the participants that their names and individual results will stay confidential and that only aggregate results will be used for the study (Rowley, 2014). This is important because it ensures that the participants are given the correct information before they start the survey.
- ***Main statements*:** As they measure different types of data, the main statements of the employee survey and the supervisor survey differ as follows:

Employee survey main statements:

A. ***Informal learning activities:*** This section is divided into three subsections containing items related to the three levels of informal learning activities. Respondents were asked whether they agreed or disagreed with each statement, each option was assigned a score, and the total scores were used to analyse results.

B. ***Respondent's demographics:*** The final part of the survey contains generic questions such as gender, work experience, and educational level to explore whether respondents' demographics influence their attitudes toward informal learning processes.

3.5.1.5 The supervisors' survey

Using Yang & Johnson's (2012) study, the supervisor survey (See Appendix 6) focused on five items capturing the supervisor's rating of their team's performance **(**see Table 3.5). The main goal of this survey was to measure team performance.

Measure (constructs)	**Item: survey questions**
Team Performance	My team performs well.
	My team achieves its goals.
	My team meets the expectations of others.
	My team does what it should do.
	My team has satisfied (internal or external) clients.

Table 3.5. Items used to measure team performance (Yang & Johnson, 2012; Janz *et al*., 1997).

3.5.1.6 Validity and reliability

In research, there are several possible sources of errors during the process of collecting data and the way the data is interpreted and analysed can lead to incorrect conclusions about study populations (Curtis & Jackson, 1962). The researcher's responsibility is to reduce uncertainty and mitigate errors. Most of the literature considers two general components of study quality: validity and reliability. As stated by Messick (1995: pp.747), 'validation is empirical evaluation of the meaning and consequences of measurement' whereas reliability is linked to accuracy, the extent to which a measure is free from random errors, and the replicability of the measurement (Cheliotis *et al*., 2015; Kämmerer, 2015). In social sciences, the main concerns are related to internal and external validity (Alshenqeeti, 2014). Internal validity describes the extent to which a study's results are representative of the truth within the study population

rather than methodological errors (Berg, 2014). External validity describes the extent to which the result of a study can be generalised (Berg, 2014).

To increase the internal validity of this study, appropriate mechanisms were employed during the recruitment and data collection (Saunders *et al*., 2016). In this respect, only 146 of the 160 participants were selected for analysis due to two factors: incomplete responses and inaccessibility to questionnaire. The researcher carefully considered these factors so that once processed into SPSS the outcomes did not present potentially biased results which could have had an impact on the following phase (Phase 2: qualitative data) of the research. More importantly, as this study investigates informal learning at different levels, it is important that participants are linked to the right team so that correct correlation between informal learning activities and team performance can be examined. The external validity of the study was strengthened by its inclusion criteria which led to a study population representative of employees within corporations in the context of the Qatari business environment (Berg, 2014). The collection of data using online surveys has avoided the transfer of data from paper documents to an electronic database which helped to avoid any missing data or data entry errors (Harms *et al*., 2017). It is important to indicate that, as a result of technical restrictions and IT issues caused by the high security of the firm's IT system, 26 participants (8 supervisors and 18 employees) were initially unable to open the survey links so the researcher had to contact the IT department to resolve the issue and this influenced the speed of data collection as copies of the survey were distributed by email to be completed manually. Third-party software (e.g. Qualtrics) was used to automate data collection and facilitate the transfer of data to another software tool (SPSS) instead of the conventional use of Excel which might have been subject to random errors (Cheliotis *et al*., 2015). In addition, this risk was mitigated by random spot checks and continual reviews. Content validity, another potential source of problems, is linked to how well respondents understand the questions they are asked (Zohrabi, 2013). This could be affected by many factors such as reading level, cultural perspectives, and English language skills (Passmore *et al*., 2002). Most of the participants' first language was Arabic so the researcher used simple and easily understood words and avoided any complex terminologies.

3.5.1.7 Data analysis

The SPSS software tool was used to perform the tests on the data collected using the questionnaire survey. Data purification helps to produce data that is reliable and valid and can

be tested with any statistical analysis process (Sekaran & Bougie, 2013). Consequently, statistical tools including tests for internal consistency through Cronbach's Alpha were used in this study (Pallant, 2010). Cronbach's Alpha tests the internal consistency and dependability of the measures used in a study (Bryman & Bell, 2015). This test helps to facilitate the correlation of the measures which are part of the scale and also to ensure that these measures hang together (Pallant, 2010: 97). El-Gohary (2009) indicates that the Alpha tests must calculate the mean reliability coefficient for all the ways that a study might divide a set of items into two categories. Cortina (1993) observes that there is no convergent view among researchers regarding an acceptable Cronbach's Alpha value to indicate significant correlation. Pallant (2010) indicates, for instance, that an acceptable Cronbach's Alpha coefficient is 0.7, while Magal *et al*. (1988) claim that any value equal to or higher than 0.6 is acceptable. This study used Cronbach's Alpha value of 0.7 or higher due to the different measures incorporated into the study. Moreover, Nunnally & Bernstein (1994) support the use of a 0.7 Cronbach's Alpha value and therefore measures with a value lower than 0.7 would be excluded from this study's analysis. To present the outputs from SPSS, descriptive statistical tools such as graphs and charts allowed for the presentation of the associations and interrelationships between variables while multiple regression techniques were applied to test the effects of the dependent variable on the independent variables. Incorporating multiple regression allowed this study to determine the overall fit of the model.

Use of Scatter Plots for Data Presentation

Referring back to the conceptual framework of the study, and in response to Objective 2, the quantitative data aimed at examining the frequency of informal learning and its impact on team performance. It is important that outcomes from this phase will be the base for the second phase of this study which is responding to Objective 3. To do so, the use of scatter plots were utilised as a mechanism to provide judgemental sampling to select the teams that will be further investigated subjectively in phase two. Therefore, for each team, the average of informal learning activity occurrence as well as the average of team performance will be taken and positioned within a scatter plot. The use of scatter plot in statistics is very common and is used to identify the linear associate between two variables (Yadav, 2018). In this study, the linear association was between each informal learning activity and team performance. The scatter plots for the means for the team performance are provided to indicate the relationship between the dependent and independent variables. The quadrants (see Figure 3.3) indicate the presence

of outliers which include the teams that do not conform to the norms of most of the other team members based on where they lie.

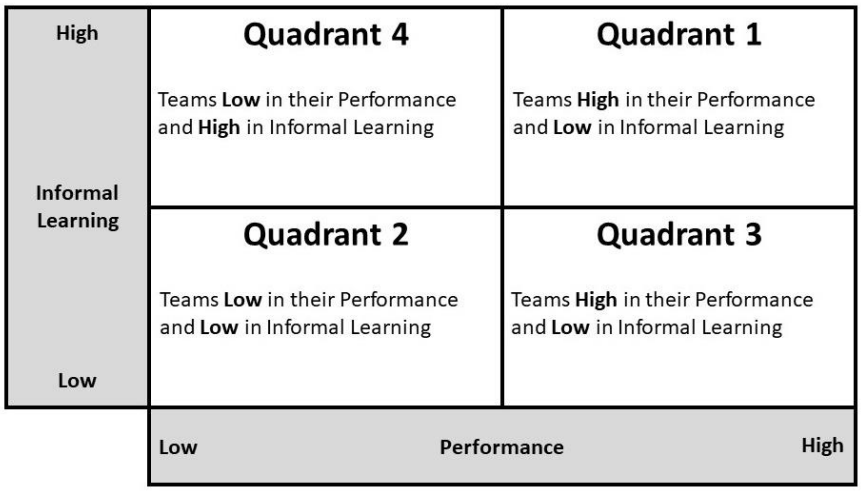


Figure 3.3. Informal learning: team performance matrix.

The teams selected will be clustered into four categories: teams with high performance and a high level of informal activities, teams with low performance but a high level of informal learning activities, teams with high performance but with a low level of informal learning activities, and teams with low performance and a low level of informal learning activities. These four categories (scatter plots) will be referred to as quadrants which will be used accordingly to provide judgemental sampling in Chapter 4. Table 3.6 shows a summary of the four quadrants.

Quadrant	**Description**
High informal learning-high team performance	The first quadrant is the high-high quadrant comprising teams that exhibit both high performance and high use of informal learning activities. The main significance of this quadrant relates to the hypothesis that thoroughly adopting forms of informal learning significantly improves employee performance. This quadrant explores participants known to incorporate high levels of informal learning into their learning development and examines the impact of this incorporation on performance (Khandakar & Pangil, 2019).

Low informal learning-low team performance	This quadrant represents teams with low performance and low use of informal learning activities. The teams are distributed under the three informal learning activities including self-reflection, managerial coaching, and team knowledge exchange. In this context the quadrant would allow the study to examine how various factors, including the lack of management support for informal learning and poor adoption of informal learning activities, could influence performance (Kusaila, 2019).
High informal learning-low team performance	For this category, the teams reported high levels of informal learning but still experienced low performance. High performance within a firm is reliant on a variety of factors including the nature of the work environment, constraints on the employee, and the employee's knowledge of how to implement their duties effectively (Eraut *et al*., 2000). The classification is premised on the fact that this approach to informal learning results in the extensive acquisition of knowledge among the team members but the skills acquired through the process are not integral in the performance of the jobs that the teams which are selected are involved in.
Low informal learning-high team performance	The low-high quadrant represents teams with high performance despite their low use of informal learning activities. The type of informal learning activities varies from self-reflection, managerial coaching, and team knowledge exchange. The performance of the team was considered high when its score was greater than or equal to four. This quadrant thus explores the underlying factors which influence the team's performance despite the presence of low informal learning within teams that are part of this quadrant (Jiang & Liu, 2015).

Table 3.6. Summary of the four quadrants.

3.5.2 Phase 2: Qualitative data

In qualitative research a variety of research tools exist including interviews, observational techniques, and focus groups and the selection of an appropriate tool is essential for achieving

research aims (Bryman & Bell, 2015). Furthermore, focus groups made it possible to identify patterns in the participants' thoughts about the subject of investigation (Saunders *et al*., 2016). Patton (2002) observed that focus groups allow studies to collect high-quality data which creates insights into the social context or phenomenon being investigated. Focus groups were used to facilitate the collection of substantial information and insights into the research subject as well as details such as the participants' perception of informal learning activities (Patton, 2002). Focus groups were also necessary to understand the opinions obtained from the surveys related to how informal learning practices within the work environment affected performance outcomes. This is critical to promoting the general appreciation of how informal learning is reinforced or discouraged in specific contexts (Ivaniva, 2002). The focus group is a valuable research tool when there are differences between members of the group of interest which is the case in this study (Morgan, 1997).

Based on the literature, it can be recognised that many of the studies on informal learning use quantitative data to derive measurable indicators rather than using qualitative data which is rarely utilised. For instance, an Australian non-profit entity was selected as a case study where qualitative methods were selected for the study. From a population of 250 employees 21 were selected With six from top management, four at executive management level and 11 team leaders. The analysis was performed through thematic analysis with elements of content analysis to determine the similarity and difference in the views among the individuals. Four factors were identified from the analysis whereby management development occurred through learning from work, learning from others, learning with others, and formal learning. Another study by Touré *et al*. (2017) used focus groups to examine the promotion of informal learning in the company. In adopting this tool the participants were depending on their experience and position thus allowing the study to select samples comprising individuals that would contribute value to the study (Touré *et al*., 2017). In a 2012 study of the learning process in mail sorting careers, Berglund & Karltun adopted focus groups as the ideal tool for data collection. They noted that focus groups enhanced the study's outcomes by validating the shared experiences investigated in the study. Therefore, following the outputs indicated by qualitative-based studies on informal learning, this study uses focus group to collect the qualitative data.

3.5.2.1 Sampling

A judgmental sampling was adopted for the focus group phase where certain teams were deliberately selected to provide insights on the data analysed from Phase 1 (quantitative data) of this research. The selection of the teams was based on the four quadrants (high-high, high-low, low-high and low-low). According to Maxwell (2013), a judgmental data sampling is one in which the researcher obtains data from information-rich cases or participants who they believe warrant inclusion. In this way, focus groups supplemented the quantitative survey data in providing further insights about the teams that were identified based on the statistical data (Saunders *et al*., 2016).

In selecting the focus group participants, the strategies employed by prior studies on informal learning, including the study of Janssens *et al*. (2017) on the link between the conditions and outcomes of informal learning within the work environment, were considered. The initial data was collected through surveys that employed a purposive sampling technique via online platforms while the qualitative data instrument was focus groups (Janssens *et al*., 2017). Another reason why the present study selected focus groups is that investigating informal and formal learning as it influences performance in Qatar (thus filling a gap in the literature) requires insights based on individual and group experiences of both formal and informal learning at work.

The sample for the focus group was drawn from the sample used in the quantitative approach which followed purposive sampling. The teams that were selected were those that had unusual results compared to majority of the teams where a total of 13 teams were invited to the focus group. Within each of the selected teams the selection criteria included the choice of participants through purposeful random sampling based on the results obtained from the quantitative data. Prior studies (Crouse *et al*., 2011; Ellinger, 2005) used a similar number of teams in the focus groups conducted in their investigations. Within the context of the case study in this research, and taking into account team sizes in the company, the average number of participants per team varied between 4 – 6 participants. Moreover, this study's focus groups offered several advantages, as identified by Bryman & Bell (2015), including enhancing the researcher's understanding of how individuals felt about the concept of informal learning and its applicability within the Qatari business environment. Furthermore, the use of the technique enabled the research participants to identify issues that were not initially considered concerning

informal learning thus enhancing the deep context of the investigation (Bryman & Bell, 2015). Additionally, the use of focus groups offered the study unique insight by allowing for the participants' data to be put into context collectively. This allowed for deeper meaning and understanding relating to the findings based on shared experiences of informal learning in the workplace. The next section explains the design and setup of the focus group.

3.5.2.2 Focus group: design and setup

The researcher collected the data for Phase 2 (Qualitative Phase) over six weeks after which the data collection commenced. The focus group were conducted only during regular working periods. Following the implementation of the focus groups, the transcripts were prepared and analysed and this step was completed in mid-August 2019. A list of topics was defined before the focus group meetings to help the researcher gain insights into the patterns and possible themes in each category. An email was sent by the researcher to the team supervisor (See Appendix 6) before team meetings to ensure that the procedures were simplified. Ahmed *et al*. (2016) suggest that contacting top-level management officials builds legitimacy and can facilitate a researcher's efforts to conduct meetings with individuals that are part of their team.

Focus groups for each team met separately and without their supervisors to ensure that they answered the questions without any fears or pressure. Each meeting started with an introduction in which the researcher introduced herself, set the scene for the focus groups, provided information about the background of the research, defined key terms, and explained the aims of the study. As the focus group convener, the researcher explained the participants' roles and provided information to the participants about how confidentiality would be maintained throughout the whole research process. Additionally, the researcher ensured that the participants were aware of the informed consent guidelines.

The focus group comprised participants employed within the case-study organisation with various levels of experience. Having discussions with these individuals was essential for gaining insights based on their shared experiences within the context of their environment. Focus groups were then conducted to examine shared experiences relating to informal learning based on whether teams exhibited (a) high informal learning and low team performance, (b) low informal learning and high team performance, or (c) low or high values for both metrics.

The focus groups were intended to cast light on the factors underlying the measured metrics as detailed in the next chapter. During the focus groups, the researcher sought to understand team members' perspectives on what factors enabled or held back team performance and informal learning. Finally, team members' perspectives were compared according to the criteria established during the quantitative phase. The focus group questions sought to reveal the facilitators, barriers, and other factors that affect the informal learning process. The literature includes discussions of several factors that affect the procedures for informal learning in the work environment (Bancheva & Ivanova, 2015; Eraut, 2004; Jeong & Lee, 2012; Kyndt *et al*., 2018; Lohman, 2005; Wallo, 2008). In the focus groups, these factors were compared with participants' answers to identify the following key themes:

- *Individual reflection about factors relating to employee tasks and how they affect informal learning.* For example, the researcher asked questions like *"*Could you tell me the frequency with which the function in your role differs from time to time?" and "Within your role, have there been any instances of learning activities which you believe may have positively affected you in terms of impacts on your career, job function, or the performance of other employees?"

- *Factors at dyadic level that influenced employee engagement such as the leadership style of the team supervisor.* For example, the researcher asked questions like *"*Could you give an insight relating to your current experience in terms of working with your current supervisor?" and "When is the last time you sought assistance from a manager for work-related tasks which were peculiar or unresolved?"

- *Factors that affect group and organisational knowledge sharing.* Questions were formulated to explore the factors related to knowledge sharing within the team and how environmental factors impact on sharing of knowledge in the organisation. For example, "Have there been any tools and support at the organisational level which have helped facilitate the development of your knowledge?" and, if the respondent answers affirmatively, the researcher explored those tools and would ask questions like "Do you believe the tools have impacted on your learning development in any way? What other ways do you believe the organisation could help in promoting the development and improvement of technical skills used in the workplace?"

- *Other factors that influence informal learning adoption.* For example, the researcher asked questions like "Are there any factors that may influence (positively or negatively) your team learning and development?"

At the end of each focus group meeting, the researcher asked the participants if they wanted to add or share any other information. Most of the teams' participants did share more stories and information at this stage. For example, some participants showed the researcher the platforms they used to exchange information internally. Finally, the researcher always asked the team to have a look around their offices for any additional observations which allowed the researcher to note the offices' physical layouts.

The focus group was recorded using a digital recording device. After every focus group, all audio files were uploaded to a secure computer using a password as required by the ethical guidelines applicable to this study. Following the preparation of the transcripts for all focus groups, all recorded data was deleted from the secure computer to prevent unauthorised access. Additionally, all focus groups except one were conducted in English. The exception was conducted in Arabic as the two team members participating in the focus group preferred speaking in Arabic. The transcripts were translated by the researcher.

3.5.2.3. Validity and reliability

The concepts of research reliability and validity are viewed differently in the context of qualitative research. In the qualitative research, these factors are conceptualised as trustworthiness, consistency, and quality (Golafshani, 2003). To ensure the reliability and validity of this study's focus groups, a qualitative research guide was developed to ensure that the research conformed with replicability requirements (Kidd & Parshall, 2000). Replicability in qualitative studies is enhanced by manuals or guides designed to guarantee replicability. Furthermore, consistency in the research questions is a unique factor that influences focus group outcomes because a lack of consistency can affect a focus group's internal validity (Saunders *et al*., 2016). Consequently, this study made sure that all research questions were clear and repeatable. Furthermore, an essential aspect of validity is the procedure for identifying and recruiting study participants (Greenbaum, 2000). To ensure the reliability of the focus group data, the first process performed was the recruitment of teams for the survey

which was based on selecting the teams that had different outputs compared to majority of the teams included in the survey (Phase 1).

To ensure the validity and reliability of the focus group outcomes, the researcher prevented some issues such as the group polarisation and passivity of some research participants. These phenomena had the potential to affect research outcomes as the study based its validity on the idea of the unanimity and consistency of the information patterns revealed by the research participants (Johnson & Johnson, 2000; Saunders *et al*., 2016). Furthermore, in their role as the focus group moderator, the researcher ensured that all aspects of the research questions were covered by participants, provided clarifications where necessary, and proactively facilitated without inhibiting the flow of discussions, as recommended by Leung (2015). Lastly, the study documented the focus group process by digitally recording each focus group session with each team, thus ensuring the descriptive and interpretative validity of the focus groups. This allowed for a clear understanding of the language used by the participants relating to the themes of discussion and insights provided.

3.5.2.4 Data analysis

This study's quantitative analysis provides insight into the degree to which team members rate informal learning as high, low, or medium. De Grip (2015) observes that when the organisational learning culture encourages knowledge sharing and facilitates skill development, this sends positive signals to employees and drives up productivity and performance. This makes it important to consider teams that practice informal learning activities often and to examine the impact of this activity on performance. De Grip (2015) further notes that when an organisation's strategy for human capital development emphasises formal learning techniques, there is less potential for improved knowledge development when compared to informal learning activities (which account for 96% of the activities that employees spend time on). Marshall & Rossman (1995) described qualitative data analysis as a procedure that gives the order, meaning, and structure to the data that is collected in a study. Saunders *et al*., (2016) identified various data analysis techniques including thematic analysis which allows for the identification of patterns, relationships, and themes in the data to identify patterns and relationships easily and quickly. Thematic analysis, according to Bryman (2016), is considered to be a feasible technique that is utilised within various fields including social and science. Moreover, it allows codification of the data which allows correlations to be

established between different perspectives (Creswell & Poth, 2017). In determining the appropriate data analysis process for this study, line-by-line coding was used to determine the main themes that will be used to analyse the data collected. The coding process follows the approach suggested by Braun & Clarke (2006) toward thematic analysis which will be outlined more clearly in Chapter 5.

3.6 Ethical Considerations

As any research has potential risks for participants' and researchers' lives, autonomy, and integrity, the research community has created a strict code of ethics, rules, and procedures to mitigate those risks (Kjellstrom *et al*., 2010). This study adhered to the general guidelines and ethical principles that apply for doctorate students as follows:

- **Ethics approval (procedural ethics):** This study conforms with the ethical standards that apply to all doctorate research around the world including principles that apply for Nottingham Trent University (NTU) professional doctorate students. The researcher discussed the ethical guidelines and this study's ethical plan with the project supervisors to obtain feedback and recommendations. The researcher signed and completed the consent form for ethical approval before commencing the study.
- **The ethical aspect of the methods (practical ethics):** The researcher obtained the company's formal permission to execute the study and to solicit the employees' responses. Participation in the study was voluntary for employees and supervisors. All the respondents were informed that they were free to withdraw from the study at any time within two weeks after completing their surveys without having to give any explanation. The researcher's contact information and the withdrawal mechanism were provided to the research participants so that they could contact the researcher at any time. The purpose of the research was explained at the beginning of the survey and in the focus groups. The research data were stored electronically in locked and safe files. All participant recorded files were deleted and the transcripts and notes were shredded upon completion. Assurances were provided to all participants the analysis of the data and the reporting of the findings would not allow for the identification of the participants either by the company or by a third party.
- **Confidentiality and Anonymity:** The research protected the privacy of the data collected and prevented any invasion of privacy throughout the study. The data,

including employee names, emails, and contact numbers, were not shared or disclosed to third parties during or after the study under any circumstances. Each participant was provided with a personal code number assigned by the researcher and these codes were stored in a secure location. In accordance with ethical requirements, the codes and results for individual participants were not shared with the contact officer from the organisation and were used only for the aggregation of the results. Once the participants agreed to participate in the online survey, they were required to click on a link to take the survey using their code numbers. The data obtained was stored in the Qualtrics (software system) database with access restricted to research team members only. To ensure that research ethics were followed, the researcher presented the participants with consent forms for both surveys and focus groups; for the focus groups, these were presented to the participants before commencing the activity. For the surveys, informed consent was obtained through the Qualtrics platform; once participants clicked the survey link as received in their email, they were provided with information about how to participate in the survey if they chose. Saunders *et al*. (2016) observed that obtaining informed consent is essential for research in alignment with the ethical requirements of the institution for which the research is being conducted. Consequently, the ethical requirements of Nottingham Business School were followed in this study. It is important to indicate that data will be destroyed following completion of the research project.

3.7 Summary and Conclusion

This chapter reviewed the philosophy, design, and methods used in this study and explained the feasibility and suitability of the choices made to facilitate the fulfilment of the research aims and objectives. The study incorporates a pragmatist paradigm as the fundamental philosophy of the research. Furthermore, the study adopts a mixed-methods approach for data collection because this technique is appropriate for facilitating the collection of relevant information about informal learning and performance outcomes in a more holistic manner as compared to single-method approaches such as solely qualitative or quantitative techniques. The combination of the qualitative and quantitative data enables the researcher to explore the previously overlooked aspects of the research phenomenon and to confirm whether the rest of the findings confirm the expectations. It was indicated that the collection of data was sequential, consisting of two phases: Phase 1 using questionnaires and Phase 2 using focus

groups. For each of the phases, the justification, sampling, and design was reviewed in order to provide clarity and avoid potential bias. The chapter concluded with the ethical considerations required for this study.

CHAPTER 4: QUANTITATIVE DATA ANALYSIS

4.1 Introduction

This chapter presents the findings from the first phase of primary data collection. The quantitative primary data corresponds to the second research objective (examining the frequency of informal learning at three levels) and partially the third research objective looking at potential factors that impact informal learning in organisations. The main rationale for the use of quantitative data is to gain measurable indication (Creswell, 2017) of the impact of informal learning in the organisation. In doing so, this will solidify the understanding of its role and how this differs for different teams at different levels. The outcomes from this will provide an improved foundation that allow a more in-depth insight into informal learning which will be presented in the next chapter. In this chapter, the performance of the team, as well as participation in the informal learning activities, are measured on a five-point Likert scale.

Although the prominence of informal learning and team performance has been discussed in past studies (e.g. Choonara *et al*., 2017; Dotcenko *et al*., 2016; Sibarani *et al*., 2015), this did not exemplify the extent to which informal learning occur and at what level. As a result, in the first part of the analysis, the extent of informal learning occurrence will be examined and this will be followed by an overview of the potential impact of informal learning activities on team performance. A total of 47 teams are identified from the survey data provided by the case-study respondents.

4.2 Targeted Sample

As explained previously, 146 employees, drawn from 47 teams, participated in the survey. In total, four demographic characteristics were identified for this phase: gender, age, length of service and highest educational attainment. The gender range of the teams were redefined into five categories including teams comprising purely males or females, teams that are male or female-dominated, and balanced teams. For the rest of the characteristics, including age, education level and length of service, the average was identified to ensure equal distribution of the demographics within the targeted sample.

The characteristics of the teams is noted to be as follows: the largest proportion of teams (48.9%) are male-only teams while male-dominated teams form 19.1% of the sampled teams. Only 4.3% of the teams are female-only, with 10.6% being female-dominated. Of the 47 teams,

51.1 % comprise employees whose age range between 30-39 years. Only 6.4% have members aged between 50 and 59 years. The largest number of teams (42.6%) comprises members who have served in the company for between 5 and 10 years while only 2.1% of the teams have members who have worked there for less than a year. Based on these demographics, it is expected that the team members are well-versed with the operations within the company, specifically within the job they are attached to. Finally, the largest proportion of teams comprise individuals who hold a bachelor's degree (74.5%) while only 2.1% of the teams have a team member who holds qualifications classified as less than secondary education. However, only 8.5% of the teams comprise individuals holding qualifications at PhD level or another advanced degree.

Gender					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Gender	Female-only teams	2	4.3	4.3	4.3
	Male-only teams	23	48.9	48.9	53.2
	Female-dominated teams	5	10.6	10.6	63.8
	Male-dominated teams	9	19.1	19.1	83.0
	Gender-balanced teams	8	17.0	17.0	100.0
	Total	47	100.0	100.0	
Age					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	20- 29 years	8	17.0	17.0	17.0
	30- 39 years	24	51.1	51.1	68.1
	40- 49 years	12	25.5	25.5	93.6
	50- 59 years	3	6.4	6.4	100.0
	Total	47	100.0	100.0	
Length of Service					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	1	2.1	2.1	2.1
	1- 4 years	17	36.2	36.2	38.3
	5 - 10 years	20	42.6	42.6	80.9

	More than 10 years	9	19.1	19.1	100.0
	Total	47	100.0	100.0	
Highest education attainment					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Less than Secondary	1	2.1	2.1	2.1
	Received Secondary certificate	7	14.9	14.9	17.0
	Received Bachelor's degree	35	74.5	74.5	91.5
	Received Master's degree	4	8.5	8.5	100.0
	Total	47	100.0	100.0	

Table 4.1. Demographic characteristics.

4.3 Internal Reliability Calculation

The reliability of the constructs and variables is tested in this section. A brief description of the variables is provided, followed by identification of the constructs and the codes for each construct.

4.3.1 Self-reflection

Self-reflection has been studied widely as an activity associated with informal learning. Kim & Keyhani, (2019) indicated that self-reflection prompts team members to think about the suitability of the informal learning mode based on the situation. It entails an assessment of the learning preferences through a review of the strengths and weaknesses of the mode of learning, vis-à-vis the goals that they want to achieve. Similarly, self-reflection enables employees to tap into their emotional and intellectual capabilities to fully determine the meaning and purpose of the learning processes, be it for academic or professional outcomes (Choi *et al*., 2017). Paige (2007) posits that self-reflection propagates the development of the character for informal learning. It occurs in a predictable five-phase approach which follows modelled phases including suggestion or identification of a problem or scenario, identification of intellectual options for solutions, development of hypotheses, reasoning to elaborate the idea, and testing the hypothesis to determine the potential solutions. Although it might not necessarily occur evenly across the team members, it enables team members to focus on the lessons and elements of knowledge from the real-life environment, specifically the type of work they are involved in. As a result, team members can culminate in convergent learning even though they are different (Choi *et al*., 2017) and they have different experiences (Zimmerman *et al*., 2011).

Despite the individualism in self-reflection, teams can harmonise the process by using worksheets and reliable feedback loops (Kim & Keyhani, 2019; May & Etkina, 2002). These mechanisms direct a portion of the self-reflections activities and help team members to focus on similar or specific dimensions of learning (Paige, 2007). Other teams have, however, argued that unless the directed self-reflection targets assessment any measures to influence the process introduces structure to the learning thereby formalising it. In this study, self-reflection is conceptualised and tested through the constructs represented by the following statements.

Code	Construct
SR1	I always question the way others do things and try to think of a better way.
SR2	I like to think about what I have been doing and consider alternative ways of doing it.
SR3	I often reflect on my actions to see whether I could have improved on what I did.
SR4	I re-appraise my experience so I can learn from it and improve for my next performance.

Table 4.2. Constructs for measuring self-reflection.

4.3.2 Managerial coaching

Coaching involves a one-on-one interaction between professionals and team members within the learning environment. According to Grover & Furnham (2016), coaching facilitates learning through an objective approach whereby the skills that are passed on are determined on a needs basis. As a result, a coach tailors the training, content and assessment approach to the needs of the learners. Lui-Yin (2015) indicated that the student-orientated approach to informal learning through coaching differs from the coaching under formal learning processes in that the acquisition of knowledge occurs through an unstructured process. Similarly, since the selection of the coach and the learner occurs within the institutional-workplace environment, the selection of the coach and the student occurs in unique ways for each learning scenario (Griffiths, 2005). As a result, a case for case comparison in the effectiveness of coaching is challenging (Grover & Furnham, 2016).

Learning through coaching entails the development of a coach-learner scenario whereby the coach holds superiority while the learner is viewed as a subordinate (Devine *et al.*, 2012). The relationship influences the learning process, whereby knowledge transfer is primarily

unidirectional. However, Rosha & Lace (2016) and Utrilla *et al*. (2015) concluded that this unidirectional transfer of knowledge during the learning process enhances organisational performance since it facilitates the establishment of relationships within the organisation. Such relationships, which can ultimately be utilised in the creation of teams, enable employees to learn at the workplace. Rosha & Lace (2016) further stated that due to the close link between proficiency in the workplace and responsibilities, supervisors tend to be involved in the coaching process. This further explains the reason why the age and experience of the individual in the workplace influences managerial coaching as an informal learning activity. The constructs for testing the variable are included hereunder.

Code	**Construct**
C1	Encouragement from my supervisor, especially about taking risks on my career decisions, is important to me.
C2	To help me think through issues, I like it when my supervisor asks questions, rather than providing solutions.
C3	I always try to seek constructive feedback from my supervisor.
C4	I know that my opinions/suggestions are appreciated by my supervisor, even when they conflict with his/hers.
C5	I like that my supervisor uses real-world cases, scenarios, and examples to help me learn.
C6	I often tell my supervisor whether and how their feedback and interactions with him/her are helpful to me.
C7	I trust that my supervisor always shares his/her feelings openly in conversations with me.
C8	I trust that my supervisor focuses on my needs in discussions with him/her.
C9	My supervisor and I leave time for relationship building when interacting with each other.
C10	I look for connections with my supervisor when being coached in the workplace.
C11	I am open and candid with my opinion with my supervisor in difficult work situations.
C12	I openly share my values with my supervisor when being coached.

Table 4.3. Constructs for measuring managerial coaching.

4.3.3 Team knowledge exchange

Wang & Noe (2010) indicated that team knowledge exchange facilitates informal learning through the sharing of knowledge among members. Furthermore, unlike other forms of informal learning, team knowledge exchange entails the synthesis of information and informal learning that is fuelled by the synergistic and symbiotic relationships within the team. Jiang & Chen (2018) indicated that the effects of team dynamics, team co-operation, and behaviours of the team members are relevant to the effects of informal learning through team knowledge exchange. These processes, generally discussed as team member exchange (TMX) processes, have been examined by Chun *et al*. (2014) and Kamdar & van Dyne (2007). TMX refers to the quality of relationships and the presence of reciprocity whereby each team member contributes as much knowledge as they receive from their fellow team members. The robustness of TMX influences informal learning within teams and ultimately the performance of the teams.

Past studies (Burmeister *et al*.,2011; Wilson & Hartung , 2015) suggest that team knowledge exchange is dependent on other team processes such as team knowledge goal generation, team knowledge goal striving, and co-operation within the team. Burmeister *et al*. (2011) indicated that team knowledge exchange is not an automatic process since it relies on the collective motivation of team members and individual employees to collect knowledge and exchange ideas. The process also relies on time and effort in the sharing of knowledge and utilisation of the knowledge from different individuals to create a single body of knowledge that can be utilised for tangible results (Burmeister *et al*., 2011). However, these processes occur during the operations associated with the production of goods and services in the institution. This explains why Akgun *et al*. (2006) indicate that teams must apportion their time between sharing, discussing, and integrating the available knowledge and utilising the established procedure and routines to execute their responsibilities. The dichotomy of these processes represents how, although team knowledge exchange results in an improvement in performance due to increased competence of the employees, it can adversely affect performance. This binary view is, however, challenged by Dong *et al*. (2017) and Dreu *et al*. (2008) indicate that the time spent exchanging information can result in improved performance if the team members achieve better outcomes due to the novel capabilities arising from the knowledge exchanged during informal learning. The following constructs were used in testing the variable.

Code	Construct
TE1	Members in my team share all relevant information and ideas.
TE2	Members in my team listen carefully to each other.
TE3	If something is unclear, we ask each other questions.
TE4	Members in my team elaborate on each other's information and ideas.
TE5	In my team, information from one member is often complemented with information from another.
TE6	My team draw conclusions from the ideas that are discussed in the team.
TE7	My team tends to handle differences of opinions by addressing them directly.
TE8	In my team comments on ideas are acted upon.
TE9	Members of my team often ask each other critical questions to verify different opinions and idea.

Table 4.4. Constructs under team knowledge exchange.

4.3.4 Reliability test: Cronbach's Alpha

Team level constructs were derived from individual level data where data for each response was aggregated into a single value for the corresponding team. Since the survey was mainly based on questions collected from the members of the teams, a verification step was necessary to check if the data collected was sufficient for team level aggregation.

Reliability refers to the extent to which a scale produces consistent results. It is the degree to which the measure of a construct is consistent or dependable. The use of reliability testing is most common in situations where multiple Likert questions are adopted in a survey/questionnaire forming a scale. For this purpose, Cronbach's Alpha was used which is a model of internal consistency based on average inter-item correlation. The closer Cronbach's Alpha values are to one, the more reliable a measure is. In this study, the Cronbach's Alpha value for the measurement of average organisational informal learning activities. Table 4.5 highlights the composite variable for the entire data set.

Scale	Cronbach's α	Number of Variables
Self-reflection	.725	4
Managerial coaching	.830	12
Team knowledge exchange	.866	9

Table 4.5. Cronbach's Alpha values of the three informal learning activities.

Additional tests are performed to test the item level Cronbach's Alpha as included in Appendix 7. A value higher than 0.7 was obtained which indicates that the association is based on high-reliability analysis; the scale yields consistent results and is, therefore, reliable for the variables associated with informal learning activities. The variables for managerial coaching, team knowledge exchange, and self-reflection showed very high internal reliability scores which suggests there is solid empirical evidence to support the idea that these three sub-scales should be used as separate constructs.

4.4 Data Analysis (part 1): Extent of informal learning

The frequency of informal learning activities was calculated for each team (Figure 4.1), showing that some teams prefer certain forms of informal learning activities to others. This directly corresponds to the second objective in this research which is examining the frequency of informal learning at three levels. The frequencies provide a different insight into the type of informal learning activities carried out by each group. Taking into account the frequency of informal learning activities for different teams will support judgemental sampling. The average score for each form of informal learning was obtained by computing the mean of each activity for all teams allowing for the identification of each team's informal learning preferences. As illustrated below, all the teams had a value of three or higher for each informal learning activity. This indicates an overall high level of informal learning adoption in the organisation.

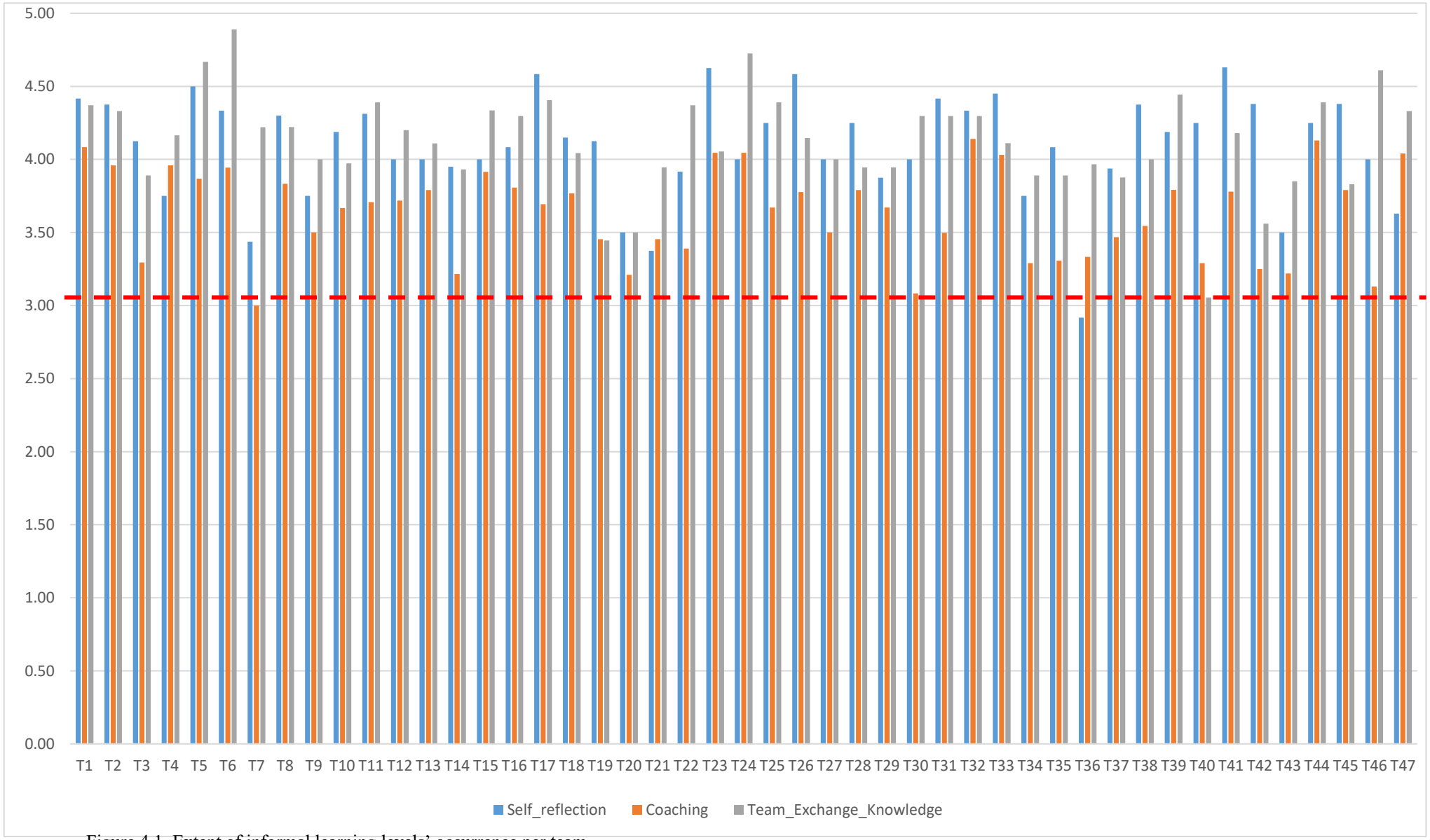


Figure 4.1. Extent of informal learning levels' occurrence per team.

The definition of informal learning suggests that informal learning activities in the workplace can either be performed individually or can be socially shared learning activities (Yang & Johnson, 2012). To determine which informal learning activity was most practised in the workplace, descriptive analysis was implemented for the three activities and the net mean for each activity was calculated (Table 4.6).

Table 4.6. Informal learning activities statistics.

Variables	M	SD	Min	Max	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
1. Self-reflection	4.11	0.58	1.0	5.0	-1.677	0.201	6.139	0.399
2. Managerial coaching	3.64	0.47	1.67	4.58	-0.679	0.201	1.819	0.399
3. Team knowledge exchange	4.14	0.49	2.67	5.0	-0.058	0.201	-0.093	0.400

Table 4.6. Informal learning activities statistics.

The mean of self-reflection and team knowledge exchange were almost identical and have the highest values among the informal learning activities. This suggests coaching is practised less and highlights the extent to which a variety of informal learning activities are dominantly practised by the 47 teams within the organisation in focus.

The research instrument is designed to test the type of informal learning activities relating to these general categorisations. Based on the frequency tests, it was found that team knowledge exchange (M (Mean) = 4.14, SD (Standard Deviation) = 0.49) is the most common form of the informal learning process in the case study organisation. Managerial coaching (M = 3.64, SD = 0.47) typically occurs in collaborative settings distinguishing this form of activity from self-reflection (M = 4.11, SD = 0.58). Hence, it is realised that self-reflection and team knowledge exchange are the most adopted forms of informal learning within the organisation.

4.5 Data Analysis (part 2): Informal Learning and Team Performance

Regression analysis was utilised in the process of determining the relationship between the activities associated with informal learning and the performance of teams in the company. Multiple regression analysis assessments are applied when the objective of the analysis is to

determine the relationship between one dependent variable (in this study, team performance) and another (informal learning activities). Additionally, in each of the regression tests that are applied within this chapter, demographics will be incorporated as constant variables and will be added as a separate model within each test. The importance of using multiple regression tests within the context of this research is to understand whether the same result/conclusion can be achieved on the impact of each team by each different learning activity (Mooi, 2014). The significance of this is to gain richer insight into which (if any) learning activity has the most impact on team performance which would provide solid grounds to further look into that activity as part of the correlation tests, which is examined later in this chapter.

4.5.1 R-test: team performance and informal learning activities

In this phase of the analysis the relationship between informal learning and team performance was examined. The outcome of the analysis reflects the correlation between the two variables. The R=0.320 (see table 4.7 below) reveals that the correlation between informal learning activities and team performance is low. The R^2=0.102 indicates that informal learning activities predict 10.2% of the variability in the performance of the teams. Despite the low level of predictive abilities of the dependent variable by the independent variables, Pallant (2010) indicates that the nature of human behaviour can lead to such low predictive abilities. The unexplained variability can be attributed to the fact that the independent variables are part of a broader collection of activities associated with informal learning.

Following the strength test between team performance and informal learning activity, the effects of the control variables were tested. Control variables provide context to the impact of the independent variables on the dependent variable. However, they affect the impact of the independent variables on the dependent variable thereby explaining some of the constant effects. In this case, the researcher decided to investigate the potential impact of demographics and other factors (e.g. length of service) since the organisation comprises of diverse individuals in terms of age, gender, educational level, and experience within the organisation. Based on the results, it is apparent that the inclusion of the control variables increases the correlation between the dependent and independent variables to R=0.429. Similarly, the extent to which the independent variable predicts the dependent variable increased by 8.2% (from 10.2% to 18.4%).The results indicate that the inclusion of the control variables increases the predictive abilities of the independent variables regarding the dependent variables. In conclusion, the

regression analysis show that none of the informal learning activities are related to team performance based on the results derived from R-test (see table 4.7).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.320[a]	.102	.039	.55873	.102	1.630	3	43	.197
2	.429[b]	.184	.012	.56664	.082	.761	5	38	.583

a. Predictors: (Constant), Team_Exchange_Knowledge_mean_1, Self_reflection_mean_1, Managerial coaching_mean_1

b. Predictors: (Constant), Team_Exchange_Knowledge_mean_1, Self_reflection_mean_1, Managerial coaching_mean_1, Highest education attainment, Gender, Length of Service, Age

Table 4.7. Relationship test summary between team performance and informal learning activities.

Within this study, control variables included age, gender, educational level, length of experience, and the length of service at the organisation. The effects of the control variables on the dependent variable will be assessed based on the relationship test summary in terms of their effects on the statistical significance where this is done using correlation tests.

4.5.2 ANOVA results

In the second phase, the ANOVA output indicates whether the model is statistically significant or not based on the p-value. The statistical significance of the model indicates that the relationship identified in the model summary above between the dependent and independent variables occurs by change or due to the intrinsic characteristics of the variables. Statistical significance, in this case, is measured at the 95% confidence level. Based on the results of the analysis, none of the models (see Model 1 and 2 in table 4.8) are statistically significant. Under Model 1, where the F (3, 43) = 1.630, p=0.197), and Model 2, where the F (8, 38) = 1.07, p=0.404, it is apparent that both models are not viable predictors of the relationship between the three informal learning activities and performance of teams.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.526	3	.509	1.630	.197[b]
	Residual	13.424	43	.312		
	Total	14.950	46			
2	Regression	2.749	8	.344	1.070	.404[c]
	Residual	12.201	38	.321		
	Total	14.950	46			

a. Dependent Variable: Team_Performance_mean

b. Predictors: (Constant), Team_Exchange_Knowledge_mean_1, Self_reflection_mean_1, Managerial coaching_mean_1

c. Predictors: (Constant), Team_Exchange_Knowledge_mean_1, Self_reflection_mean_1, Managerial coaching_mean_1, Highest education attainment, Gender, Length of Service, Age

Table 4.8. ANOVA test results.

Therefore, the ANOVA analysis for both models revealed that the relationship between the dependent and independent variables was not statistically significant. The result was similar when the control variable was included. This implies that the relationship between the two categories of a variable could be explained by chance.

4.5.3 Coefficient test

The test is performed to determine the direction of the relationship, whether it is positive or negative, and whether the relationship is statistically significant. According to Tashakkori & Teddlie (2003), this analysis seeks to test the effects of the individual independent variables on the dependent variable. It is important to highlight that statistical significance is measured at the 95% confidence level. In the results shown hereunder, the relationship between the independent and dependent variables are provided in addition to the constant effects. Pallant (2010) defines the constant effects as the associated factors with informal learning that influence the dependent variable, in this case the team performance..

Based on the coefficients output, the effects of the individual independent variables on the dependent variable are shown below. Among the independent variables, In the first model,

neither self-reflection (B= -.392, p=0.138), managerial coaching, (B= .337, p=0.319) nor team knowledge exchange (B=.326, p=0.247) has shown a positive effect on team performance.
Under the second model, after examining the effects of the demographics and other factors (e.g. length of service and level of education) of the team members, the same results was found: neither self-reflection (B= -.371, p=0.204) managerial coaching (B=.265, p=0.469), nor team knowledge exchange (B=.418, p=0.162) have a statistically significant impact on team performance. In addition, it was also found that the control variables did not have a major impact when added to the second model (see table 4.9). The complete results are shown below.

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.339	1.279		2.612	.012
	Self_reflection_mean_1	-.392	.260	-.248	-1.510	.138
	Managerial coaching_mean_1	.337	.334	.184	1.008	.319
	Team_Exchange_Knowledge_mean_1	.326	.278	.192	1.173	.247
2	(Constant)	2.790	1.408		1.981	.055
	Self_reflection_mean_1	-.371	.287	-.235	-1.293	.204
	Managerial coaching_mean_1	.265	.363	.144	.731	.469
	Team_Exchange_Knowledge_mean_1	.418	.293	.247	1.427	.162
	Gender	.036	.071	.079	.506	.616
	Age	.204	.167	.288	1.222	.229
	Length of Service	-.074	.146	-.101	-.507	.615
	Highest education attainment	-.059	.162	-.058	-.364	.718
	Type of work	.115	.225	.100	.509	.614

a. Dependent Variable: Team_Performance_mean

Table 4.9. Coefficients output.

4.5.4 Correlation results

In this section, Pearson's correlation tests are utilised to indicate the extent to which the dependent, independent, and control variables are associated with one another. Moreover, the researcher tested how demographic variables are related to the three learning activities by conducting correlational analyses. The correlation will be assessed based on the strength where strong correlation is when r >.50, middle range when .30 < r < 0.50 and weak when r < 0.30. The correlation can also be negative, indicating that the change in one variable results to the change in the other variable but in the opposite direction. Finally, the correlation results also test for the statistical significance at 95% confidence level to indicate whether the relationship between the pairs of the variables occurs by chance or by the inherent characteristics of the variables.

The demographic characteristics have varying correlations with the independent variables. Age has a statistically significant relationship with managerial coaching (R=0.163) with positively strong correlation (p=0.049). Similarly, statistically significant relationship between education level and self-reflection (R=0.194) with positively strong correlation (p=0.019). These results indicate that informal learning activities differ across age groups and educational levels. The older employees are more likely to engage in managerial coaching; the higher education they receive, the more self-reflection they engage in.

Interestingly, the average length of service in the team has a statistically significant relationship with team performance (R=0.195) with positively strong correlation (p=0.019) indicating that seniority is one of the factors that impact team performance. However, although the above indicator may draw an interesting finding, it does not feed into the scope of the study in this research. Self-reflection was found to be statistically significant (R=-0.210) with negatively strong correlation with team performance (R=-0.210, p=0.011). The results also show that neither managerial coaching (R= 0.073, p=0.380) nor team knowledge exchange (R= 0.150, p=0.071) are significantly correlated to team performance.

Correlations

		Gender	Age	Length of service	Education qualification	Team Performance mean	Self-reflection mean	Managerial coaching mean	Team knowledge exchange mean
1.Gender									
2.Age	Pearson Correlation	.104							
	Sig. (2-tailed)	.214							
	N	146	146						
3. Length of service	Pearson Correlation	-.047	.770**						
	Sig. (2-tailed)	.578	.000						
	N	144	144	144					
Education qualification	Pearson Correlation	.051	.256**	.209*					
	Sig. (2-tailed)	.543	.002	.012					
	N	146	146	144	146				
Team Performance mean	Pearson Correlation	.113	.124	.195*	.055				
	Sig. (2-tailed)	.173	.135	.019	.512				
	N	146	146	144	146	146			
Self-reflection mean	Pearson Correlation	.030	-.021	-.068	.194*	-.210*			
	Sig. (2-tailed)	.717	.802	.420	.019	.011			

	N	146	146	144	146	146	146		
Managerial Coaching mean	Pearson Correlation	.153	.163*	.092	.135	.073	.533**		
	Sig. (2-tailed)	.066	.049	.272	.105	.380	.000		
	N	146	146	144	146	146	146	146	
Team knowledge exchange mean	Pearson Correlation	-.032	.063	.151	-.111	.150	.270**	.460**	
	Sig. (2-tailed)	.700	.452	.071	.182	.071	.001	.000	
	N	146	146	144	146	146	146	146	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

N = number.

Table 4.10. Correlation results.

4.6 Key Analysis from Quantitative Data

The analysis was motivated by the second and third research objective which aimed to examine the frequency of informal learning at three levels and whether it has an impact on team performance within the investigated organisation. This also incorporated the impact of demographics where this was examined against the three informal learning levels and also team performance.

From the analysis, it was found that the mean of self-reflection and team knowledge exchange were almost identical and have the highest values among the informal learning activities where this indirectly implicated that managerial coaching is less practiced. It was also found that team knowledge sharing (M = 4.14, SD = 0.49) is the most common form of the informal learning process in the case study organisation. Managerial coaching (M = 3.64, SD = 0.47) typically occurs in collaborative settings distinguishing this form of activity from self-reflection (M = 4.11, SD = 0.58). Hence, it is realised that self-reflection and team knowledge sharing are the most adopted forms of informal learning within the organisation.

To examine the relationship between informal learning and team performance multiple regression and correlation tests were used. This commenced with regression tests (R-test, ANOVA and coefficient) to identify the relationship between the three informal learning activities and team performance. For each of regression tests, additional testing was performed with a control variables (demographic characteristics including the age, gender, education level, and experience within the organisation) to explore their impact on the three informal learning activities and team performance.

The R-test showed that none of the informal learning activities are related to team performance in this research context. Furthermore, the independent variables explained 10.2% of the variability in the dependent variable which increased to 18.4% when the control variable was included in the analysis. As for the ANOVA and coefficient tests, it was found that the relationship between the dependent and independent variables was not statistically significant. The result was similar when the control variables (demographic characteristics) was included. This implies that the relationship between the two categories of a variable could be explained by chance.

The correlation test, when compared to regression tests, found a number of statistically significant results. For instance, statistically significant correlations were found between age and managerial coaching as well as educational level and self-reflection. The demographic characteristics have varying correlations with the independent variables. Age has a statistically and positive significant correlation with managerial coaching ($R=0.163$, $p=0.049$) and similar correlation was also found between education level and self-reflection ($R=0.194$, $p=0.019$). These results indicates that informal learning activities differ across age groups and educational levels. The older employees are, the more likely they engage in managerial coaching; the higher education they receive, the more self-reflection they engage in. Self-reflection was found to be negatively correlated with team performance. Additionally, the results showed that neither managerial coaching nor team knowledge exchange were significantly correlated to team performance.

4.7. Informal Learning and Team Performance: Use of scatter plots

From the quantitative analysis, it was concluded that informal learning at three levels occur across the different teams that were examined within the case study organisation. As indicated in Chapter 3, the use of scatter plots will be used to provide judgemental sampling on the results obtained from each team. Judgemental sampling will provide a more focused approach to gain richer understanding of informal learning activities per team than can be captured in a survey to better identify barriers and enablers for informal learning. The use of scatter plots will cluster teams into four quadrants: high informal learning-high team performance, high informal learning-low team performance, low informal learning-high team performance, and low informal learning-low team performance. It is important to highlight that the use of the four quadrants will be done for each informal learning activity level as this feeds into the main scope of this study.

The team level, which is based on an aggregation of the individuals' responses classified into the 47 teams, reveal that team knowledge exchange activities are most practised form of informal learning activities. Managerial coaching is the least practised informal learning activity. Based on the scatter plot analysis, the largest proportion of teams that practice self-reflection and team knowledge exchange are classified under Quadrant 1 because they experience high performance from engaging in high informal learning activity. On the other hand, most of the teams that practise

managerial coaching lie in Quadrant 4, in which high informal learning activities is linked to low team performance. This indicates that there are differences in the impact of the specific informal learning activity in team performance. The presence of outliers in other quadrants for all the informal learning activities highlights the need for further exploration to investigate the relationship between informal learning activities and team performance.

The frequency of informal learning activities was calculated for each team, showing that some teams prefer certain forms of informal learning activities to others. The frequencies provide a different insight into the type of informal learning activities carried out by each group. This provides further insights into the type of informal learning activities that were found to have varying levels of impact on team learning in the scatter plot analysis in the previous section. The average score for each form of informal learning was obtained by computing the mean of each activity for all teams allowing for the identification of each team's informal learning preferences. As illustrated below, all the teams had a value of three or higher for each informal learning activity. This indicates an overall high level of informal learning adoption in the organisation.

In the analysis involving informal learning through the exchange of knowledge within the team, most of the teams lie in Quadrant 1. As a result, this reveals that the exchange of knowledge among teams results in high performance among most of the teams. Several outliers, including Team 20 and Team 2, where high informal learning results in low team performance and vice versa.

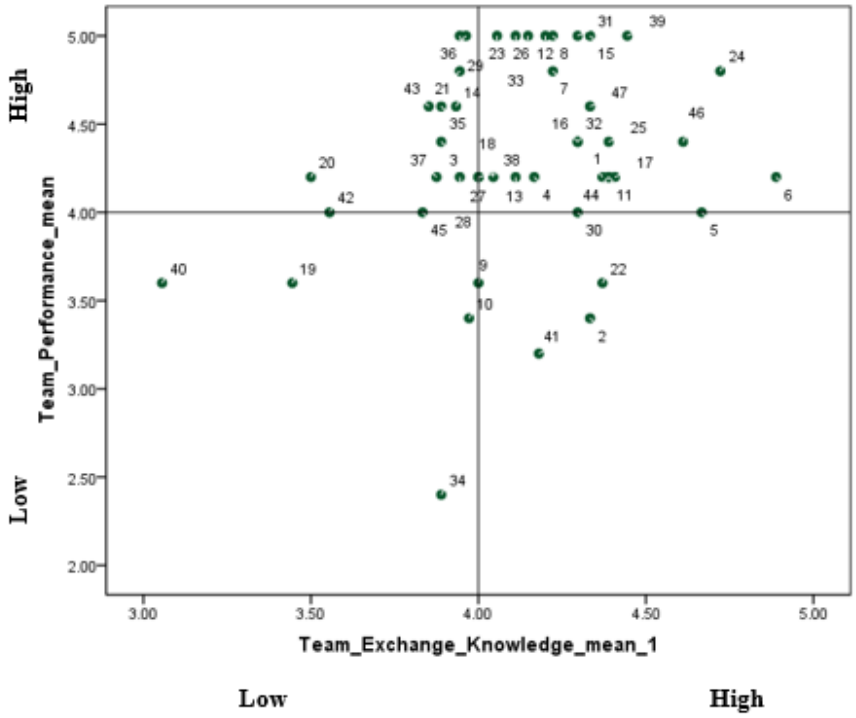


Figure 4.3. Scatter plot for team performance: team knowledge exchange.

In the scatter plot relating to the effects of self-reflection as an informal learning activity on team performance, most of the teams are classified in Quadrant 1 in which high performance is associated with high informal learning. This implies that self-reflection as the informal learning activity results in high team performance. Some outliers are reported, including Teams 36 and Team 41.

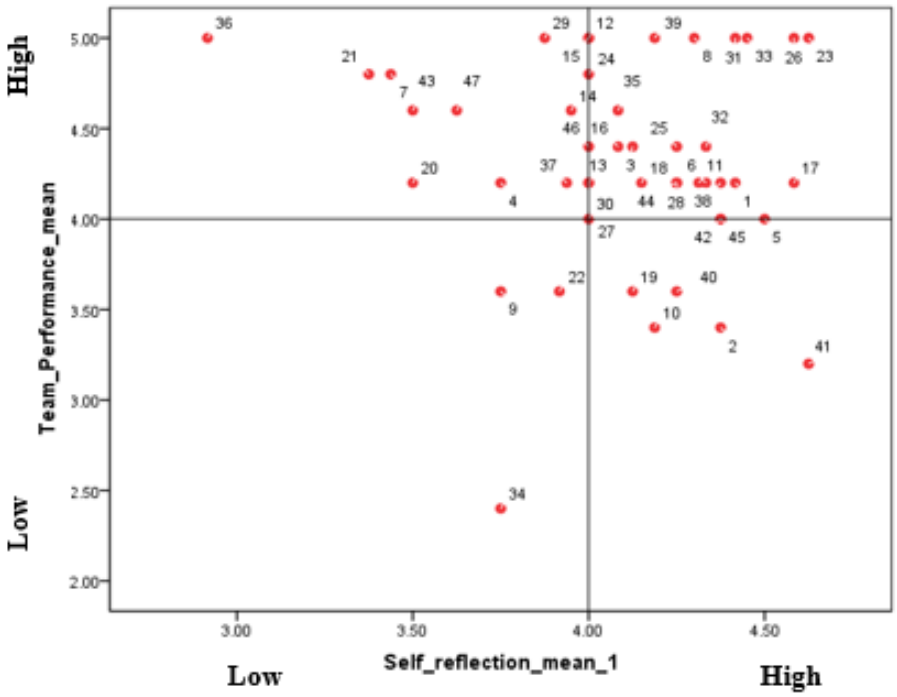


Figure 4.4. Scatter plot for team performance and self-reflection. The numbers are the numerical identifiers for each team.

In the final informal learning activity, most of the teams are found to lie in Quadrant 3 which represents low learning and high performance. In this quadrant, teams are noted to exude characteristics of low informal learning but high performance in the team. The outliers from the scatter plot include Team 7. The results are shown below.

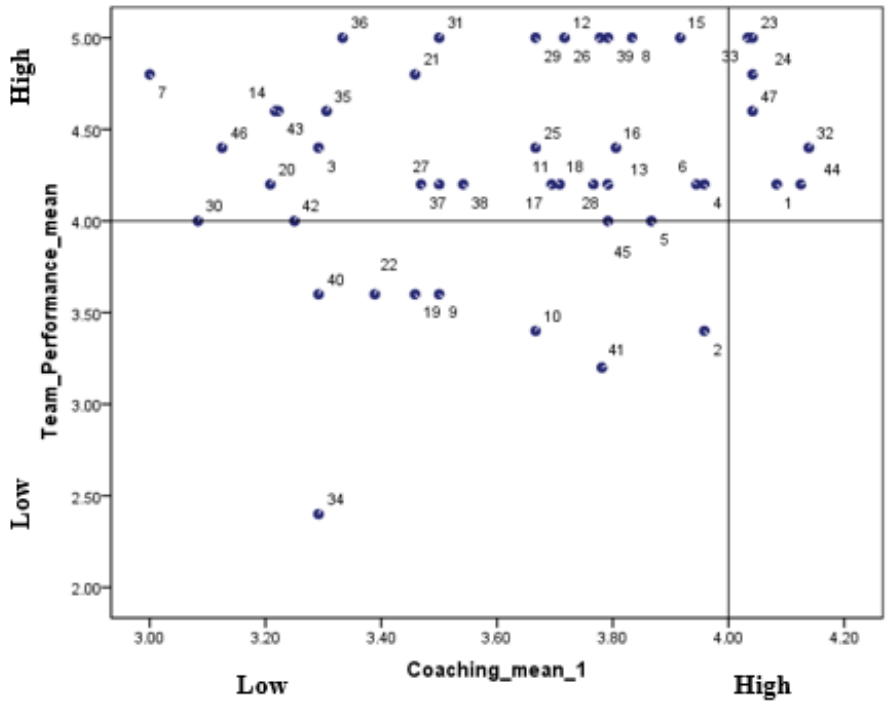


Figure 4.5. Scatter plot for team performance and managerial coaching. The numbers are the numerical identifiers for each team.

4.8 Chapter Summary and Conclusions

The chapter examined the frequency of informal learning at three levels and their impact on team performance as well as incorporating some of the demographic factors and their association with informal learning and team performance. To do so, questionnaires were used with 47 teams and their supervisors within the selected organisation in Qatar. From the analysis it was found that the mean of self-reflection and team knowledge exchange were almost identical and have the highest values among the informal learning activities. It was also found that team knowledge sharing is the most common form of the informal learning process in the case study organisation. To examine the impact of informal learning activities on team performance multiple regression tests (R-test, ANOVA, coefficient and correlation) were performed. On the one hand, the results derived from the regression tests showed that there is no strong association between informal learning and team performance. On the other hand, correlation tests pointed out a number of statistically significant associations between informal learning and team performance. For instance, it was found that self-reflection is negatively correlated with team performance. The results also showed that neither

managerial coaching nor team knowledge exchange were significantly correlated to team performance. Correlation tests also revealed relationships between demographics and informal learning activities. For instance, statistically significant correlations were found between age and managerial coaching, as well as educational level and self-reflection.

The chapter concluded with use of scatter plots as a judgemental sampling mechanism to select the teams that will be further investigated for the second phase of this study. To do so, scatter plots were used to cluster the teams into four categories. The selected teams will be further explored in the next chapter in terms of facilitators and barriers towards informal learning.

CHAPTER 5: QUALITATIVE DATA ANALYSIS

5.1 Introduction

This chapter presents the results obtained by analysing the qualitative data from the focus groups. These findings represent the second phase of the study (Phase 1 being the surveys which informed the focus groups). This chapter corresponds to the third research objective which is to synthesise an understanding of factors that affect informal learning within teams in Qatar. The importance of the qualitative enquiry in this chapter is that it allows gathering perceptions and creating richer synthesis through subjective evidence from different teams to gain an understanding of how informal learning activities are motivated/demotivated in organisations. The qualitative analysis will be based on the four-quadrant scatter plot which provided a basis to divide teams per quadrant so that the analysis can be structured with respect to each of the quadrant.

5.2 Focus Group Teams

Based on the results from the quantitative data analysis phase, the first step to recruit teams for focus groups was to classify them according to their informal learning level (high or low) and performance scores (high or low) which are shown in Table 5.1 below. To distinguish different teams, the researcher identified each team by its supervisor code.

	Self-Ref	Managerial Coaching	Team-Exchange	Team Performance
High Equal and > 4 *	34 teams	7 teams	31 teams	39 teams
Low <4*	13 teams	40 team	16 teams	8 team

Notes: Five-point scale; N = 47 teams coded from 1 to 47.

Table 5.1. Summarised statistics.

Second, teams were reallocated into four scoring patterns based on their informal learning and team performance scores. In total, of the 47 teams, 13 teams were invited for the focus group sessions. The selection of these teams was based on their location in a quadrant which depended on their score for performance and informal learning activity (self-reflection, managerial coaching

and team knowledge). For instance, team 36 (see Figure 5.1) maintained high performance (average = 5) and low informal learning activity (average = 3) for self-reflection, whereas teams 4 and 20, for instance, were not selected as their average for performance was slightly higher than the borderline between high and low performance. Hence, selection of the team in each quadrant depended on whether they sit on the outer layer performance, informal activity level or both. As mentioned in the Chapter 3, each of the selected teams needed to be within a criteria.

Therefore, of the 13 teams, only 11 were included in the focus group study because two other teams did not accept the invitation from the researcher. This followed Janssen *et al*'s. (2017) study that investigated the link between the conditions and outcomes of informal learning within the work environment which also aligns with focus of this research. On average, each focus group took between 45-60 minutes which included and identified a set of questions focusing on different factors that impacted informal learning within the organisation and, in particular, the team itself. In some instances during the focus group the researcher prompted some follow-up queries in order to gain further understanding of a particular instance or gain richer knowledge on certain experiences.

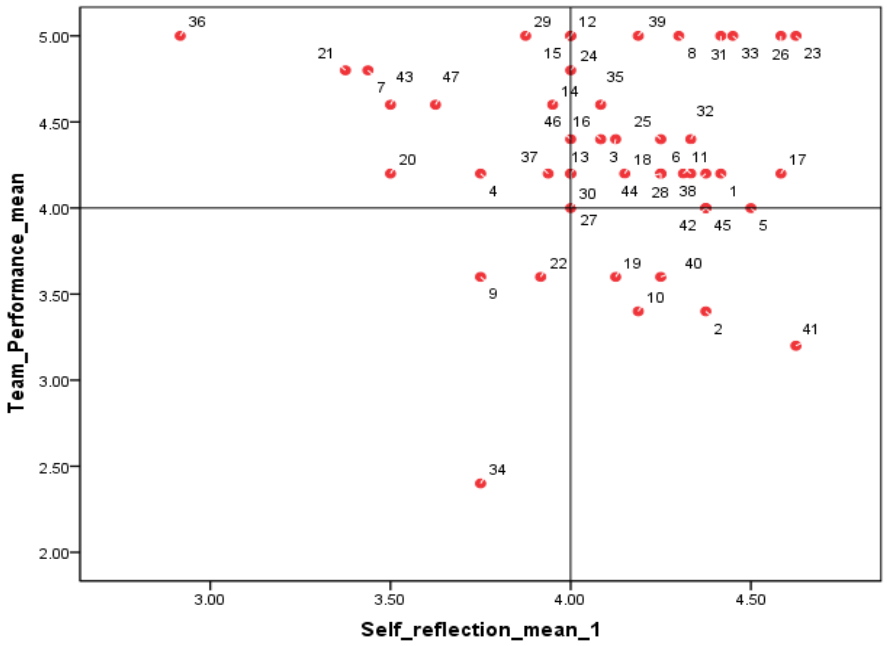


Figure 5.1. Team performance and self-reflection. The reference numbers of the teams are indicated.

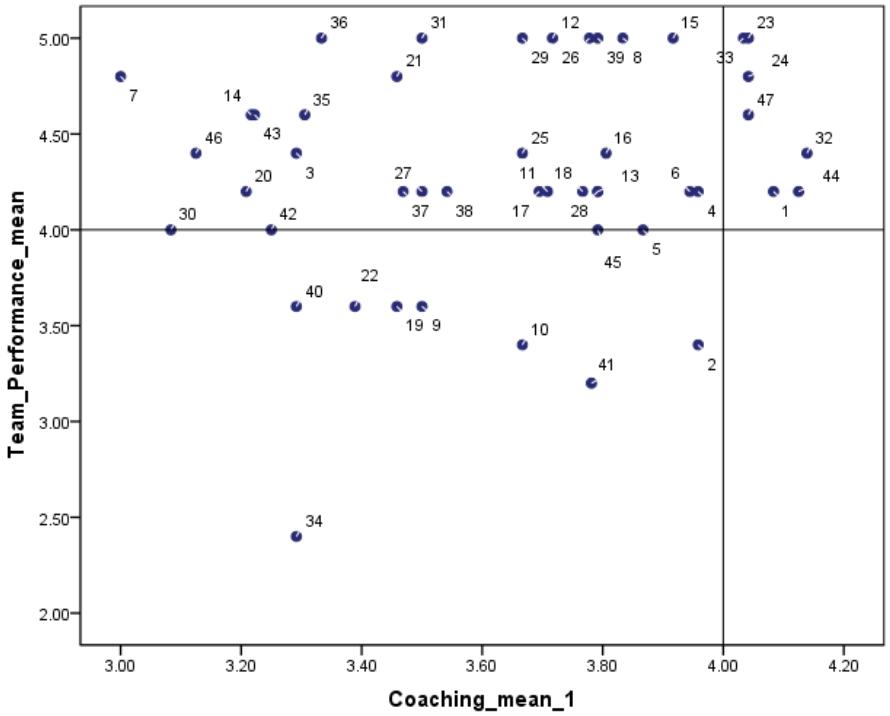


Figure 5.2. Team performance and managerial coaching. The reference numbers of the teams are indicated.

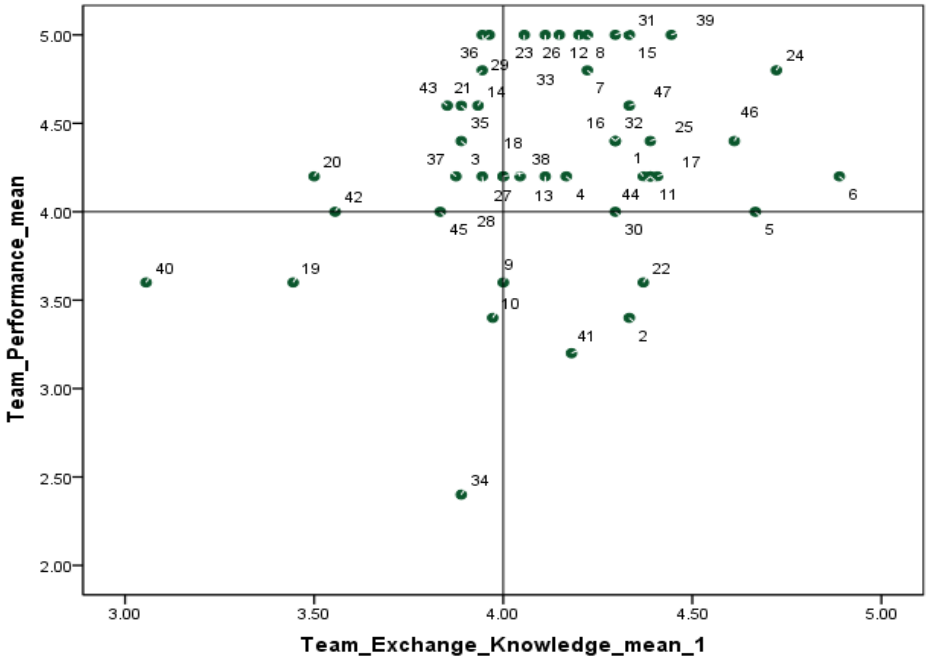


Figure 5.3 Team performance and team knowledge exchange. The reference numbers of the teams are indicated.

5.3 Thematic Analysis

To understand the results obtained from the focus group, it is useful to recall that the research focuses on informal learning within organisations in Qatar. Furthermore, the research focuses on how different informal learning activities influence performance. As outlined in Chapter 3, thematic analysis is used for the qualitative data collected. The approach toward identifying the themes is based on Braun & Clarke (2006) who abstractly use line-by-line coding. According to Braun & Clarke (2006) there are essentially multiple phases to conduct the thematic analysis which are outlined within the context of this research in Figure 5.4 below.

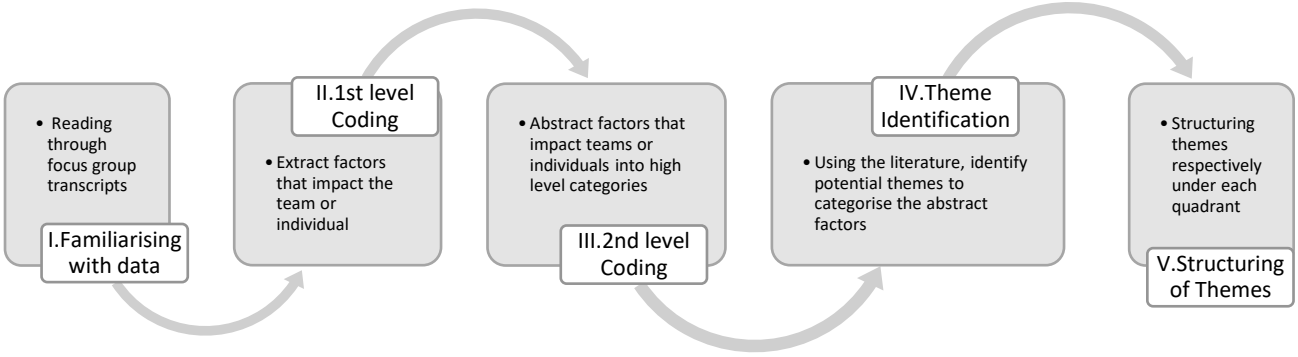


Figure 5.4. Process followed for the thematic analysis using data collected from the focus groups.

Familiarising with the data step was indeed critical to identify the generated discussions with each group and also ensuring that the scope of discussion aligns with the research aim hence, in some instances where an idea, point of interest or an instance is unclear, the transcript was communicated back to the team for clarification. The next step (1st level coding) investigated transcripts within teams in each quadrant as this provided more structure into the analysis and, more importantly, simplified identifying the first level codes. As one of the significant steps, it was important explain the process of line-by-line coding:

1st level coding (factors that impact the team or individuals)	2nd level coding (abstract factors that impact the team or individuals)	Arranging into themes	Quadrant	Quotation
Sharing work and responsibilities to achieve the actual work	Willingness to share knowledge	Trust and team bond	High informal learning/high team performance	"*On paper, we have our responsibilities but when it comes to the actual work we always share the work. We usually share responsibilities for reports, documentation, and presentations; everyone shares the work function.*"
Supervisors' communication and leadership style	Communication	Leadership style	Low informal learning/low team performance	*"With me he is a directional leader; I believe the discussions and communications with the supervisor are limited maybe because he is new and, currently, we don't click. For me my supervisor is results-orientated"*

Table 5.3. The process of line-by-line coding

In identifying the first level codes, the researcher interpreted quotations from the teams within each quadrant and linked the interpretation to factors that impact teams or individuals and, where applicable, to informal learning activity/activities. The second level coding began by abstracting the factors identified in the first level of coding to allow a more structured and determined approach across all teams which also supported highlighting connections and commonalities and this is significant to derive meaningful conclusions. In identifying the abstracted factors, the researcher used phrases derived from the literature to arrange the factors into themes. The final step was to structure the identified themes under each quadrant as this will provide more meaningful analysis.

5.3.1 Identified themes

One of the themes identified across most quadrants is trust and team bond and this was indeed one of the elements also discussed by many researchers in the literature (e.g. Van den Bossche *et al*., 2006; Wallo, 2008; Khiat, 2017; Kyndt & Baert, 2013; Susomrith & Coetzer, 2019). Many studies identified that the level of trust between the team members can determine the team's propensity to engage in informal learning.

The next identified theme across all quadrants was leadership style which, based on many studies (e.g. Froehlich *et al*., 2012; Froehlich *et al*., 2014; Choonara, *et al*., 2017; Day *et al*., 2014), was recognised as a core element that impact performance of the teams. More importantly, the leadership style influences performance which culminates in the acquisition of skills and, ultimately, enables employees within a team to possess the knowledge and skills that are passed on from one individual to the other informally.

The third theme that was identified was characteristics of the task which was common across all quadrants. Past literature reveals that the characteristics of the tasks influence informal learning as well as the methods through which knowledge is acquired (Becker & Bish, 2017; Decius *et al*., 2019*;* Kortsch *et al*., 2019).

Similarly, and across all quadrants, organisational characteristics have also emerged as one of the key themes. In this context, organisational characteristics refers to nature, culture, environment,

and working mechanisms. In fact, many studies in the literature (e.g. Masa'deh *et al*., 2016; Milligan *et al*., 2015; Susomrith & Coetzer, 2019) highlighted that the presence of culture and environment that promotes informal learning leads to increased chances that team members will participate in the activities such as managerial coaching, self-reflection and team knowledge exchange.

The final theme identified has investigated further factors that motivated informal learning in organisations which elaborated on further complexities that support understanding what motivates informal learning in organisations.

5.5 High Informal Learning High Performance

5.5.1 Trust and bond between team members

The relationships among the teams were influenced by the characteristics of the team. Participant R1 of Team 24, which shows a high-high score in all the three matrixes, stated that:

"*It's the team! We consult with the team and sometimes the supervisor but most times it's the team and also it's dependent on the level of change which is being instituted*."

Team relationships were also observed to facilitate information sharing within the high-high teams and building a strong relationship depends on trust. R1 of Team 24 stated:

"*…I learned from discussions with colleagues, supervisors… they teach us these terms when it comes to hands-on operations. Actually, I go to individuals I perceive to have the expertise to teach me more*."

For the high-high category, it was found that trust and the strength of the relationships within the teams significantly influenced the adoption of informal learning. According to Team 23 (high-high in knowledge sharing):

"*On paper, we have our responsibilities but when it comes to the actual work, we always share the work. We usually share responsibilities for reports, documentation, and presentations; everyone shares the work function*".

A newcomer to the team indicated that most of the trust and interactions occur during formal meetings but there are extensive interactions during operational hours. These interactions help team members to "*…make decisions relating with work and also learn on the go".*

Furthermore, it is noted that within the high-high teams employees knew where to look for trustworthy information that was crucial to team performance and the achievement of team objectives. According to R1 of Team 1:

"There are specific individuals within some departments that have knowledge relating to specialist tools so you cannot only go to the supervisors but you need to engage with these individuals to learn. If it relates to industry information, I may go to my supervisor or director. At times we may speak to product managers to understand details relating to the product".

This indicates the importance of trust in fostering collaboration and learning and shows that trust within teams results in the development of an environment that encourages accountability. Accountability, in turn, is necessary to facilitate learning development and the achievement of team objectives. Furthermore, this suggests that trust positively influences knowledge exchange within an organisation and its teams as trust is essential for reinforcing the strengths associated with an organisation's social networks and for developing ties that facilitate the exchange of complex information.

Considering how trust may influence the adoption of various informal learning activities within the high-high team, the findings indicate that when there is strong trust, team members perceive that interaction with others is safe and this encourages them to actively participate in activities that facilitate learning. Strong trust between the team members of the high-high category reflects collaborative interaction, the strength of sharing information, and the adoption of informal learning techniques that have been made available by the organisation. In the high-high teams, trust is

essential for facilitating the achievement of the tasks or functions assigned to the team and can be considered central to the general performance of the teams in this category.

Furthermore, it was observed in the high-high teams that trust enhances the relationships between supervisors and workers. The constant communication between supervisors and team members was observed in the high-high category indicating that communication is strong between supervisors and the members of teams belonging to this category. In support, Team 1 (high-high in all matrixes) indicated that the team members enjoy favourable and effective communication processes daily. According to one team member:

"*The relationship is great as we communicate effectively. Every morning, we have informal chats about challenges which we experienced both at work and in our personal life. We also have a group on WhatsApp where we share knowledge as well. Most of the time, we communicate on the phone and we talk to each other. But we are consistently communicating".*

This indicates that when there is consistent, high-quality communication and the perceived value of the information communicated promotes the development of trust between supervisors and junior employees. It can thus be argued that since there is high-quality communication within the high-high teams, they develop trust that enhances their ability to be open and improves their performance. Furthermore, the consistency of communication affects perceptions of organisational openness which can, in turn, influence the performance and involvement of employees in organisational activities. This explains the high performance of the high-high category which adopts a high level of informal learning activity. The consistency in high-quality communication between the supervisors and junior employees may have influenced the level of trust within these teams and, consequently, the teams' performance.

The findings show that, for teams within the quadrant of high informal learning–high team performance, in relation to trust and bonds between team members, it was identified that sharing responsibilities, social relationships, characteristics (openness and transparency) of the team, and looking for trustworthy information have contributed toward informal learning activities. It can

also be stated that high team performance with relation to managerial coaching is primarily affected by communication, collaboration, and openness between team members and supervisors.

5.5.2 Leadership style

In the high-high teams, participants suggested that support from leadership facilitates informal learning. The leadership styles are orientated towards laissez-faire whereby the leader is viewed as a favourable addition to the team. R1 of Team 24 stated that:

"Within telecommunications, when you are recruited, you are provided with information relating to the industry at the induction period. However, we learned the terms when we got into the system. I learned from discussions with colleagues, supervisors… they teach us these terms when it comes to hands-on operations."

This means that leadership style, in this instance, has encouraged improving team performance. Furthermore, it is evidenced that the nature of the style of leadership is based on team effort and this allows for effectiveness of change within the organisation. The nature of leadership within the teams present in this quadrant is such that it allows for teamwork, independent learning through use of available organisational resources, and hands-on effort by the supervisors or managers when necessary in instituting learning. These are reflective of hands-on effort by the leadership in facilitating informal learning adoption to aid productivity.

As indicated earlier, it is also suggested that the style of leadership allows for independent learning of the workers using resources that are made available by the organisation. Expanding on this, R2 of Team 24 stated that:

"A scenario is relating to maybe doing something which requires expert knowledge of the use of Excel. Rather than going to individuals to explain this, sometimes I just go on Google".

This shows that leadership style motivates self-reflection that supports striving for independent learning. The following were indicated by the participants of Team 23 on some of the leadership challenges which were identified. R1 stated:

"…*Challenging as it is a new learning experience and we as employees are just learning. At the moment we are requesting the help of an expert to seat with us to teach us about the new equipment…"*

R2 commented that:

"I believe support is necessary as we have had maybe two pieces of training with regards to the new equipment swap that we talked about earlier. This helped us in basic learning but we need more support."

R1 added:

"The supervisor was the one who suggested the development of the shared folder. We use our own resources in order to find solutions to our problems and then share it with each other in order to ensure effective development for the team".

The above showed the role of providing effective and efficient mechanisms as part of being a leader and how this impacts employees within a team. When asked about the relationship with supervisory teams and its impact on efficiency, members within Team 1 cited a case for the strong relationship allowing for access to needed learning resources as and when needed thereby enhancing effectiveness. Expanding further, R1, Team 1, stated:

"Our supervisors are available and try to work with us when they have the time as they focus on other issues at times… however they are always ready to provide assistance and are involved in our work especially when we have a task which is complex… in situations like this he first provides examples and watches everyone implement their own objectives before leaving us to independently practice in the field".

R2 Team 1 commented:

"To add to that, most times when we request resources maybe due to the technical nature of our functions, our requests are attended to… so the supervisors are playing their role when it comes to dealing with our resource requests... and this builds trust that you can rely on the leadership in the team".

The indication of these suggestions is that a strong relationship facilitates access to the needed informal learning resources which enhances the outcomes within the team in terms of performance. This shows that availability of the supervisor has an impact on efficiency and effectiveness of the team.

It can be stated that leadership style, for high informal learning-high performance teams, has an impact on teamwork and willingness to share which promoted team knowledge as part of the informal learning activities. Managerial coaching was also recognised as one of the informal activities motivated because of efficiency and effectiveness. Due to efficiency of the team members were motivated to seek independent learning which demonstrated self-reflection.

5.5.3 Characteristics of the tasks

In this category, participants suggested that the nature of the telecommunications industry requires learning as certain terminologies must be understood for employees to do their jobs. This requirement affected the adoption of informal forms of learning. R1 of Team 24 stated that:

"Within telecommunications, when you are recruited, you are provided with information relating to the industry at the induction period. However, we learned the terms when we got into the system. I learned from discussions with colleagues, supervisors… they teach us these terms when it comes to hands-on operations."

In Team 23, although the daily routines involved handling projects and operations, the daily routines varied depending on the type of orders they received. Since the team members swapped the equipment they used, the daily variations caused team members a challenge:

"*…Challenging as it is a new learning experience and we as employees are just learning. At the moment we are requesting the help of an expert to seat with us to teach us about the new equipment".*

The technical nature of the job duties of employees within the high-high teams also informed the kind of learning which was adopted as participants revealed that in performing job functions they mainly used technological solutions such as search engines to obtain necessary information. R2 of Team 24 stated that:

"A scenario is relating to maybe doing something which requires expert knowledge of the use of Excel. Rather than going to individuals to explain this, sometimes I just go on Google".

The extent to which the organisation supports informal learning at team level is evident from the data but there are variations in the process. Participation and membership into the team is associated with a multiplicity of learning experiences. R1 of Team 23 indicates that they have gained exposure to knowledge in a different profession, primarily due to the multiplicity of interactions:

"*As I work in a technical department our functions are hands-on and, as a result, we have to learn by experience… this makes informal learning a sort of constant as a result of the nature of the job which we do as most of our operational duties cannot be learned through theoretical/formal learning*".

The above shows that willingness to share knowledge has motivated team knowledge as one of the core informal learning activities for the teams in this quadrant. Managerial coaching was also motivated by the collaboration between team members and their supervisors. The team members in this quadrant were also motivated towards independent learning as part of their self-reflection.

5.5.4 Organisational characteristics

Limited personal limited support is obtained by some teams which indicates the need for efforts at individual levels. For instance, R2 of Team 24 suggests the following:

"*It is based on personal effort. However, while some management teams within the organisation are very helpful some are difficult to deal with*."

These efforts include learning from more qualified individuals as well as seeking information from other sources including online platforms. The learning culture within Team 1 is evidenced by suggestions from participants that extensive training support is available for team members and specific training is available for the members of the department. The training is designed for the development of knowledge and is supported by superiors and colleagues alike and support is provided as and when needed. According to one team member:

"*We have some basic training but most of the time we have to do things on our own through research and sometimes using Google. Some colleagues abroad help the team. The supervisor only supports administratively as he does not have the technical knowledge required."*

The teams in this quadrant provide evidence of extensive support from management which is viewed as the foundation for the high levels of informal learning and high levels of performance. A participant from Team 23 stated that:

"I believe support is necessary as we have had maybe two pieces of training with regard to the new equipment swap we talked about earlier. This helped us in basic learning but we need more support."

The participant also highlighted the role of supervisors in facilitating and encouraging informal learning activities, indicating that the supervisors' involvement in the performance of the teams' functions promoted effective team development and knowledge sharing as an informal learning activity. According to Team 23, the supervisor was the one who suggested the development of the shared folder where he stated:

"We use our own resources in order to find solutions to our problems and then share it with each other in order to ensure effective development for the team".

In this category, it is clear that supervisory involvement is significant and that it influences the teams' adoption and development of informal learning as well as their performance outcomes. The findings show that access to information and willingness to share have motivated informal learning activities such as team knowledge. In fact, it was shown that collaboration has resulted in effective managerial coaching which promoted informal learning activity culture between team members and the supervisor. Team members were also motivated to do independent learning which illustrated self-reflection.

5.5.5 Motivation to informal learning

According to teams in this quadrant, the most widely utilised support includes supervisors and, in some cases, using their own experiences. Individual interventions are still the most prevalent solutions to such challenges as indicated by Team 23. According to R1 of Team 23:

"I learned how to deal with the situation by applying my own observations and practice. Sometimes you learn to be patient. Patience is required in effective management. I also think it's based on our experience as we also contact our supervisors when the situation is such that it has to be escalated".

Hence, new situations and challenges act as major motivations to seek knowledge whether at an individual level or to gain support from a senior member (managerial coaching) to overcome a challenge. R2 from Team 24 stated:

"... not just team members... but also the supervisors are supportive and interactive and not only try to socially interact with us but also give us tips about resolving technicalities, handling new technology, avoiding issues through coaching, advising and other means and this helps in preventing some issues which may derail the team's productivity".

This reflects that collaboration and effective working can result in better team performance as the productivity can be maintained.

Team 24 identifies challenges outside the workplace, most of which arise from circumstances outside the control of the organisation. According to one team member:

"*From an operational point of view, the key challenges include going to the sites or dealing with issues on sites which we maintain because sometimes, as a result of the weather, our equipment fails and we have to go on site and some of these sites are VIP companies or clients".*

In some instances, challenges with human resources management also arise and they have an impact on the operations of the team. In cases where only one individual has to do fieldwork because the rest of the team members are engaged the teams are faced with the risks of danger, a scenario which is also restricted under the HSE rules. According to R1 of Team 24, the performance of the team is influenced by the participation of all team members. He stated that:

"*It should not be a scenario where one person is not involved but everyone should be engaged. The team should share*".

By working together, the performance of the team can be optimised since it makes it possible to achieve similar goals. Similarly, working together increases performance since each member can appreciate what is expected of them. It was stated that it:

"*Helps the team function effectively as the team members understand each other and their individual roles*".

In addition, a member of Team 24 stated:

"*Getting knowledge to facilitate completion of tasks which have been assigned to me is a challenge but this is made easier because members of the team are willing to exchange information and share knowledge when needed… Several times I have been stuck on some tasks which may have delayed a significant project assigned to me and reading up or studying about the procedures to be applied could take time and delay my completion… working with my team has, however, proved useful in helping me overcome these scenarios".*

This shows that characteristics of the team, and in particular the way they work, act as a major motivation for the team to overcome complex situations within the restrictions of available resources. Also, knowledge sharing and working towards certain objectives as a team can motivate informal learning.

For this theme, it was identified that characteristics of the team, willingness to share, interdependencies and common objectives, have motivated team knowledge. Managerial coaching as another informal learning activity was also motivated through new challenges, collaboration, and efficiency and effectiveness between team members and the supervisor. Finally, new challenges have also motivated self-reflection amongst different team members.

5.6 Low Informal Learning-Low Performance

5.6.1 Trust and bond between team members

In the low-low category, participants reported that they lacked the guidance, directions, and information necessary to facilitate the development of strong relationships in their teams. Collaboration between team members must ensure that team members learn through all activities and not just in those projects where learning is mandated. This guarantees that team members are involved in continuous learning rather than only getting exposure to knowledge when it is planned. According to R2 of Team 34:

"*I think collaborating would help in ensuring team learning. In addition, more freedom to be creative rather than routine projects being implemented would mean that our team learning would be developed. Sometimes lack of adequate budgets could put our projects on hold and this causes demotivation in the team and also a lack of appreciation of the team effort negatively impacts on team learning".*

It is clear from the discussions of the participants that there is a lack of trust in the low-low category and that this influences team performance and the use of informal learning to share knowledge which is essential for organisational efficiency.

The lack of trust affects managerial coaching activities in the organisation. The findings suggest that, in the low-low category, the lack of trust is based on the weak exchange relations between a manager and team members and that this, in turn, affects the attitude and behaviour of employees. Additionally, contextual and circumstantial factors like age differences between managers and team members, especially when a younger member shares information with an older (senior) team member influenced the trust relationship and impaired the exchange of knowledge via informal methods.

The findings regarding trust level for the teams in the low informal learning, the low performance category suggests lack of experience and lack of devotion from the supervisor in engaging with other team members as some of the issues which may influence the level of trust and, consequently, informal learning outcomes in the case organisation. Giving insight into the nature of the level of trust between members and their supervisors the following suggestion by R2, Team 41 highlights the following:

"*Our supervisor is newly appointed to our team with not enough knowledge about our field. He barely knows us and spends minimum time to meet the team members and get to know us".*

This is indicative of a level of distrust of team members when it comes to interaction with their supervisor and this could impact on productivity outcomes. Similarly, R2, of Team 2 suggests lack of support when it comes to actionable causes on the part of the supervisor as some of the characteristics of the relationship with the supervisor highlights poor communication. Expanding further, R2 from Team 2, notes the following:

"Our supervisor shows up but we have a challenge in the sense that, for example, we undertake training but it is not relevant to our specific duties and when a complaint was made the last time, it was not taken up and to date we still have these irrelevant programs".

The indication from this is that employees are distrustful in the supervisor's ability to look after their specific needs and the lack of specific training, which results from poor communication, influences the low performance outcomes within the team.

For this theme, it was found that lack of access to information and characteristics of the team have resulted in lower team knowledge. It was highlighted that lack of communication, collaboration, openness, and age difference have hindered informal learning and, in particular, managerial coaching as one of the informal learning activities.

5.6.2 Leadership style

In the low-low category, little or no support from supervisors was made available to participants as needed which influenced the use of informal learning within the teams and impaired team performance. According to Team 34, the characteristics of the supervisors also influence the extent to which the team members feel free and confident to interact with them, especially in instances where managerial coaching is necessary. R1 of Team 34 stated that:

"Additionally, I think the age gap also plays a role in the supervisor's interaction with me and impacts on informal learning or communication with the supervisor. I am at an age where I take things easily and my supervisor is maybe nine years younger than me but he is too fast because he is younger; he wants everything done on time even though he is not experienced with the procedures."

The willingness of the supervisors to treat the employees based on their characteristics and needs is viewed as an enabler of informal learning. However, R2 of the same team offers a contradicting account of the leadership style of the supervisor. They state that since the supervisor is new there are reduced discussions. However, the current and past supervisor differ in their leadership approach. Concerning the past supervisor, R1 stated that he:

"*…Chatted informally and I got a lot of coaching from the supervisor. Even the communication was fluid; he was engaged in our daily activities compared to the new supervisor. Such tips were helpful in our development in the past but right now we can't really judge because the line manager is new. I am not fully comfortable with the supervisor*."

For example, R1 of Team 34 indicated that:

"With me he is a directional leader; I believe the discussions and communications with the supervisor are limited maybe because he is new and, currently, we don't click. For me my supervisor is results-orientated".

Employees in Team 34 perceived that there was little or no communication or interaction between the supervisors and workers. This lack of communication influenced the teams' ability to adopt informal learning activities such as managerial coaching. Furthermore, in the low-low category, there was a high degree of distrust in the capability of the supervisor to encourage and support the learning development of the teams. According to R1 of Team 9:

"I feel he needs to learn a lot before he can adequately provide support and, as such, I think it's currently a limitation in our access to support."

However, R2 adopted a more diplomatic and reserved stance about the extent to which the manager supports them by stating that:

"I cannot judge that as I believe he expects that we should know everything."

These two positions highlight the extent to which the disparities in the views on the support from managers influence the views of the employees, including those in the same team. This shows that age difference, openness, collaboration, and communication are affected by leadership style.
From the above, it is realised that lack of collaboration, communication, openness, and age difference have resulted in low informal activity. From the above quotations, the method of managerial coaching has not provided the appropriate means to support informal activity environment between team members and the supervisor.

5.6.3 Characteristics of the tasks

For the low-low category, it was observed that the nature of employees' activities and tasks affected the adoption of informal learning techniques within the teams. For example, some

participants identified that the nature of their tasks required immediate intervention which left little time for learning and forced employees to learn on-the-go. According to R1 of Team 9:

"We have day-to-day tasks that require immediate intervention to fix any technical issues as we have to make sure that all services are available."

According to R2 of Team 9:

"We have some routine methodologies. In terms of challenges, which often happen, it could be unexpected changes that we need to do; it could be related to individuals, strategies, and situations."

Furthermore, the jobs performed by participants within the low-low category do not require many changes and so do not afford the participants opportunities to learn new skills which may influence the adoption of informal learning activities as well as team performance. According to a member of Team 34:

"We have a daily routine to check all the systems and equipment for their conditions and if there are any unusual technical signals."

Furthermore, the poor performance of the team is linked with the poor adoption of informal learning practices during challenging tasks or operations. During these tasks there was no information sharing and challenges in communication within teams about the expectations of supervisors or unexpected events and situations were significant.

From the above, it can be stated that lack of willingness to share knowledge and having routine tasks have resulted in low levels of informal learning activities. To expand further, lack of willingness to share has impacted team knowledge and having routine activities have not motivated self-reflection.

5.6.4 Organisational characteristics

Within the category of low informal learning adoption and low performance, it is indicated that lack of training or access to relevant training is tied to poor performance and informal learning adoption within the teams. For example, R1 of Team 34 indicates that the participants are not able to communicate with the stakeholders in terms of training discussions and when issues of the relevance of the training are brought up they are not dealt with accordingly. Expanding further, R1 notes the following:

"*We go through training and, several times, we have informally discussed the training challenges with the management members of the organisation but they seem to not give any thought to our request… There is no point doing training for something which would not add benefit to our functions in our day-to-day activities in the organisation".*

This shows that although training, which is a common form of formal learning, is presented, it tends to be irrelevant and, more importantly, illustrates that there are low evidences of adopting informal learning activities such as managerial coaching as P2 Team 34 indicates:

"*We have supervisors but I don't feel we get the required supervision; for example, coaching activity, even formally, is not properly organised for informal learning activities being practiced… this is not up to standard.*

R1 of Team 9 notes further:

"…for example exchanging knowledge is harder for members of this team as we have to work on different sites and we do not have enough time to access the knowledge community (O-online platform) to share our experiences which may be of use to other teams that follow…".

Lack of access to relevant support within the community and the nature of the duties performed in the department could be argued as significant factors which impact on the low informal learning and poor performance documented against members of this group. Teams in this category display elements of limited support from the management and the presence of a need for such support by

the employees hence the low levels of informal learning and performance. The company provides a multiplicity of tools and implements that facilitate informal learning in general. By providing these tools and implements for free across the organisation, it reduces the limitations that employees face when it comes to access to informal learning requirements. According to R1 of Team 34:

"…*We are also free to use telephones or Skype for business for sharing knowledge and we also have online certifications we can take … we have opportunities to develop. We also have departmental gatherings which allows for social communication … discussions also occur in the common area which helps in sharing of knowledge."*

Although the tools provided by the organisation include both offline and online elements, their contribution to informal learning is diversified and it differs from one individual to the other. This is primarily attributed to poor knowledge sharing hence, with the availability of informal learning, its efficiency and effectivity cannot be recognised. In addition, referring to scenarios of coaching from the supervisor to gain required knowledge to enable completion of assigned tasks and also allow for fluidity in operational functions, R1 of Team 2 stated, that:

"… *we sit together in the common room where we informally discuss challenges and issues which need to be implemented in relation to work and they guide me in my development and learning*."

However, a physical setting such as a common room shows limited impact on performance.
In this theme, it was identified that lack of access to information as well as the lack of willingness to share have resulted in low level of informal learning activities such as team knowledge. Moreover, intensity of formal learning was identified as another factor that prevented informal learning activities that can occur at a managerial coaching level.

5.6.5 Motivation to informal learning

Among the teams in this category, the challenges experienced relate to the type of job that the team members are involved in. The characteristics of the job also influence the type of challenges faced

by the employees as well as the frequency with which the challenges occur. According to Team 9, the frequency of challenges depends on the period, hence there are peak and off-peak periods. R1 states that:

"*We have a peak period where loads of staff training need to be done and there may be loads of challenges. Also in the second month of the year we usually face challenges because this is when we start implementing our training for staff. Towards the middle of the year these challenges start to alleviate."*

These variations imply that employees have to adjust their activities and learning processes to mirror the type of challenges they are exposed to. When faced with challenges, team members show a low propensity to seek out coaching opportunities from their supervisors as indicated by R1 of Team 9:

"*When I am facing challenges I just ask. I usually ask my teammates as they are more experienced than me as I am the newest here*".

This shows, consequently, that informal learning is demotivated by the amount of formal learning, such as training, to keep up with work pressure.

For this theme, it was found that intensity of formal learning and lack of new situation/challenges have hindered the occurrence of informal learning activities which, based on the quotations, mostly referred to self-reflection.

5.7 Low Informal Learning-High Performance

5.7.1 Trust and bond between team members

The level of trust is influenced by the length of contact among the team members. Teams that have had extensive contact over years show high levels of informal learning through managerial coaching and team knowledge exchange. In relation to team knowledge, P2 from Team 20 added that:

"… for most of the information we rely on international standards and other information from the external auditors or peers so I interact mostly with those groups…"

As a result, even when the influence of peers is available, the team members can rely on the standardised approach to operations as and when necessary. The international standards, as well as information from external sources, is viewed as an alternative to knowledge sharing since these groups have unique exposure. However, according to P1, the sources of information and knowledge depend on the situation since the consultants and external auditors handle different aspects of the operations. Therefore, it can be stated that interdependencies between team member is considerably lacking as the access to information is primarily relying on external sources and, in turn, this affects the unity of the team.

For instance, R1 from Team 7 shows low managerial coaching activity but high performance. The following is, however, noted with regards to Team 7:

"For approximately the years we have been in the same team, however, we have different supervisors every year. Also, they shift our team many times to be under different units in the company."

As a result, the team members have a higher level of cohesiveness and trust than what they have with the current supervisor. In addition, the lack of consistent supervisors and working with external stakeholders such as auditors to perform job functions has impacted the trust between team members and the supervisors. R1 of Team 36 provided the following input on the nature of their relationship with their supervisors:

"*We don't have any problems with the supervisors. We are lucky to have them. Our current supervisor is a very good leader and we learn from each other. She is our voice and she speaks on our behalf to management. She listens to us."*

Therefore, it can be stated that the lack of consistent supervisors has impacted the openness between team members and the supervisor. R1 of Team 20, on the nature of their relationship with

their supervisors, also highlighted similar suppositions as indicated by participants in Team 36. The suggestions indicate that they have a good relationship which helps in the completion of objectives and tasks that translates to improved performance. One of the respondents stated:

"*Our supervisor acts more like a colleague rather than a boss even though our system of operations is more of a top-bottom communication approach… This makes it easier to approach the supervisor and trust them to discuss issues relating to work and other personal challenges on the job"*.

This indicates that collaboration is an important factor that support team performance. In this quadrant, similar to the high informal learning-high performance quadrant, access to information has motivated informal learning activities at a team knowledge level but still did not show how this impacted the performance of the team. Similarly, teams in this quadrant had effective collaboration, communication, and openness which motivated informal learning activities at managerial coaching level but did not result in improvement in performance.

5.7.2 Leadership style

In the low-high teams it was found that, although supervisors interacted with the team, there was less interaction between the supervisor and the workers. Suggestions from the participants indicate that the communication and interaction between workers and supervisors within this team were generally weak and this influenced the teams' adoption of informal learning. Ultimately, these circumstances indicate that having a strong relationship with supervisors influences informal learning within the organisation as the indications from the low-low category suggest that supervisors' interactions and demonstrations of interest in the team members' actions influence the effectiveness of teams. Conversely, a lack of interaction results in poor adoption of informal learning methods within the organisation. Some supervisors exercise the laissez-faire leadership approach as well as indicated by R1 of Team 7:

"The supervisor is generally very soft… While he assigns some work to us, he usually gets involved in the work which is being implemented and he always does this if the work is very critical and needs to be done as soon as possible."

In some instances, the supervisor is reported to be willing to sit down with the employee (who is new) and to work with them through any challenging activity. The fact that he is unwilling to dictate or give orders highlights the fact that he does not apply autocratic leadership styles. There is also evidence that some supervisors adopt a democratic leadership style. As a result, when superiors are practically involved in tasks which have been assigned to employees, employees are motivated to share knowledge. The statements also reflect managerial coaching as an informal activity within the low-high teams. Members of the low-high teams also observed that the support of the supervisors in terms of facilitating employee voices and speaking about issues enhanced the teams' motivation to perform their functions. According to Team 7:

"The leader of the team fights for the team; he speaks for our rights."

This suggests that supervisory or management teams that support or value employee voices encourage the creation of an environment that facilitates learning and enhances team performance. There is also evidence that leadership is democratic within the team since the leader is interested in fighting for the rights of their subordinates. In other words, this shows that leadership style motivates better teamwork and knowledge sharing amongst team members.

The findings suggest that teams and willingness to share knowledge have motivated informal learning activities at team knowledge level. Also, collaboration between team members and their supervisors have encouraged informal learning activity at managerial coaching level. However, in both instances, this did not show how it improved performance of the team.

5.7.3 Characteristics of the task

Most of the teams have flexible routines with the changes determined by the managers. In Team 20, R1 stated that:

"*We have very clear tasks for the whole year and it is divided into two main tasks. We are two in the team and each one has their own task.*"

R2 from the same team has a different opinion, due to the nature of the job they are involved in. R2 states that:

"*Most of my tasks I do individually as I'm responsible for different areas than my friend* (R1). *However, If the manager asks me to support my colleague I do it right away".*

A similar situation is reported under Team 21 where R1 states that:

"*Usually it's a routine but sometimes I am faced by new challenges. It is dependent on the day*".

There are variations in the daily routines among the teams. These variations can be attributed to the characteristics of the teams, as well as the characteristics of the organisation in general. Some teams have specific responsibilities which do not change daily. Team 29 is involved in a predictable routine because their functions are predetermined. According to R1 from Team 29:

"*We do the same thing as a department so everyone is working within the same functions under a defined scope by the management of the organisation. Some of my duties and functions include planning, management reporting, and analysis of financial reports".*

In the case of Team 29, there are daily routines with revisions every month. This may explain why the performance is high in these teams. Consistency in operations, despite a lack of informal learning techniques, would ultimately result in these employees being informed and proficient in the performance of their duties and consequently achieve high performance.

Team 21 attributes the challenges in learning to the fact that their job is technical. He states that:

"I think maybe because our work is very technical".

Learning technical professions informally is challenging due to the lack of structure. Some teams have specific responsibilities that do not change daily. Team 29 is involved in a predictable routine

because their functions are predetermined. According to R1 from Team 7 (which showed low informal learning in two activities):

"*We do the same thing as a department, so everyone is working within the same functions under a defined scope by the management of the organisation. Some of my duties and functions include planning, management reporting, and analysis of financial reports".*

In the case of Team 7, there are daily routines with revisions every month. To ensure completion all team members are involved in the task after which new routines are assigned. According to Team 20, R1 stated that:

"We have very clear tasks for the whole year and it is divided into two main tasks. We are two in the team and each one has their own task."

R2 from the same team has a different opinion due to the nature of the job they are involved in. R2 stated that

"*Most of my takes I do individually as I'm responsible for different areas than my friend* (R1)*".*

A similar situation is reported under Team 21, where R1 states that:

"*Usually it's a routine but sometimes I am faced by new challenges. It is dependent on the day*".

The responsibilities of the teams change. In the case of Team 20, R2 stated that his responsibilities change from time to time. The changes can be attributed to the different objectives of the department. Having changed from the original mandate, the team tends to handle the responsibilities and tasks as they arise. When unclear, it is the responsibility of the manager to determine the direction. According to R2 from Team 20:

"*If the manager asks me to support my colleague I do it right away*".

The suggestions from the participants indicate that the routine nature of their jobs may inform the kinds of informal learning adopted with self-learning through the internet and knowledge sharing identified as the most common forms of informal learning within these teams. According to R2 of Team 20:

"Sometimes, I Google it and use the internet in getting information or examples. Other times, I ask other individuals in other areas of the company who I believe have the knowledge to explain to me about what to do. Other times, by implementing the task, I learn by practice."

From this theme, it can be stated that although many factors including interdependencies and common objectives, characteristics of the team, and willingness to share, did not evidently support high performance, have motivated informal learning at team knowledge level. At a self-reflection level, having new situation/challenges has motivated informal learning activity but did not result in high performance.

5.7.4 Organisational characteristics

The bulk of the respondents who are included in this category were provided with both online and offline tools for learning. Favourable environments are created by the actions of the management team as well as the team members. Team 21, among others, were provided with online learning tools which perhaps facilitated managerial coaching, self-reflection, and team knowledge exchange. Furthermore, the nature of the structure associated with the organisation is noted to influence informal learning adoption. For example, events such as Town Halls at the organisation facilitated social interaction and enhanced relationships between workers consequently improving learning and performance outcomes within the organisation.

R1 from Team 21 identified the utility of Town Halls as locations where team members gather to participate in a multiplicity of activities. He states that:

"*The idea of the Town Halls is an excellent way to build relationships which is important to our team because we are the focal point between the auditors and the departments*".

However, as it currently stands, these meetings are only organised once a year and that is not sufficient. R1 of Team 21 proposes a change to quarterly town hall meetings in order to:

"*…encourage the development of team and departmental interaction. This could serve as a means to educate the different segments of the finance department to learn more about the functions performed by other departments and also serve as a platform for learning about other departments".*

When asked about the conditions that are supportive of informal learning, R1 from Team 21 further stated that*:*

"…you always have to provide the necessary tool. Sometimes, I think the willingness of the employees to use these tools, however, impacts on learning support so maybe ways to motivate employees to use these tools…I think [providing] an environment which encourages on-the-job training [helps] facilitate learning."

The majority of teams in this quadrant utilise online platforms in various ways in the process of learning informally, whether it is through self-reflection, managerial coaching or team knowledge exchange. Team 7 indicated that:

"*...the key challenges include the going to the sites or dealing with issues on sites...our equipment fails, and we have to go on site and some of these sites are VIP companies or clients."*

To cope, the group shared knowledge via WhatsApp group and emails:

"*...we have informal chats about challenges which we experienced both at work and in our personal life. We also have a group on WhatsApp where we share knowledge as well.*"

Knowledge sharing occurs using platforms and facilities encouraged by the policies of the organisation and through creative means. Hence, with use of social media platforms such as

WhatsApp, this has not facilitated effective knowledge sharing across team members. According to Team 7:

"*We employ emails in learning about dealing with a new scenario. For example, when we need to implement something which we are not too sure about we communicate by email using a shared folder where someone could iterate the steps which need to be followed in order for a technical issue to be resolved".*

It is noted that one of the low-high teams had been tasked with switching technical equipment that was in use by customers to a different version. For this task, the team required adequate product knowledge to facilitate meaningful engagement with the clients. However, they lacked access to a product expert who would provide training. They also felt that the training provided by the organisation was not enough to prepare them for the fieldwork. Additionally, they frequently lacked time to attend the training given their huge workload. According to Team 7:

"At the moment we are requesting the help of an expert to sit with us to teach us about this new equipment...but presently we still don't have the expert. This is the main challenge for us..."

As a result, the team lacked confidence and felt intimidated by key customer issues and they felt overwhelmed by the workload and the lack of support from other teams. These circumstances amplify the multiplicity of challenges that impede informal learning. The teams in this category offer responses that reveal that the managers offer limited support that results in low levels of informal learning but low performance. However, the type of support from supervisors differs depending on the team characteristics. According to Team 21 the support from supervisors occurs through leading by example. R1 from Team 21 states that:

"*…To me, my supervisor has been supportive and he leads by example. He is not just a manager who orders us about. Even during projects, he shares the functions and duties with us and works like one of us. The supervisor is also supportive by taking the lead in innovativeness and supporting us in being innovative in the development of our tasks and always recognise the team effort…"*

In support, R2 indicates that the supervisor provides patience and understanding, especially when dealing with challenging responsibilities. However different views proposed by Team 7 where they believe that organisation need to put in more effort by selecting the right team supervisors in the first place. Hence, this shows that, with the right supervisor, the tendency to motivate informal learning can highly be influenced by the organisational characteristics.

Team knowledge exchange was found to be facilitated by tools such as the virtual platform provided by the organisation's management called the O-platform. According to R1 of Team 29, the O-Family portal is a user-friendly platform that enables team members to access information as and when demanded. He stated that:

"*The O-family portal is very user friendly…I use the portal particularly when I require the information although the first point of learning I believe is discussing with our colleagues before going on the portal to find the information which we require".*

In support, R1 indicates that such platforms enable researchers to perform self-research and collaborate with others on the online platforms. This provides exposure for learning and experience in the industry. However, this still falls under formal learning as these platforms are designated with structured methods of learning and not necessarily used for self-development. According to Team 29:

"Tele family is like an online community for staff of the organisation. It incorporates everything from HR relations, details on organisation and contact information of people in different departments. For example, if you want any HR information, the platform provides you with dedicated numbers which can be called to obtain it. Even things which are not company-related like selling your car can be done on the platform. So it's a platform for social interaction and sharing of information for the staff of the organisation."

The participants reported that while there may be available resources provided by the organisation to facilitate the informal learning process, the adoption of informal learning is low and learning is

done more independently by each employee. From discussions with the participants, the overwhelming nature of the job tasks assigned to the employees may influence the team's adoption of informal learning. This may, in turn, explain the low informal learning activities adaption for the participants within this category. This indicates the importance of having an organisational environment that supports learning either by allowing for changes to be made to the seating arrangements within the office or by providing the resources required to facilitate improved informal learning activities within the organisation. Moreover, the nature of the environment influences critical reflective learning as a form of informal learning activity within organisations. The findings show that, similar to what was identified in the high informal learning activity high performance quadrant, access to information and willingness to share have motivated informal learning activities at team knowledge level. It was also identified that collaboration has motivated informal learning and independent learning also motivated informal activity at self-reflection level. However, there was no evidence to show how teams' performance in this quadrant was affected by these activities.

5.7.5 Motivation to informal learning

The types of challenges that teams face vary from one team to the other as well as over time. The process of solving endemic challenges varies from that of solving new and emergent challenges. R1 from Team 36 indicated that they make use of several of approaches to solve any emergent challenges and the approach used is adapted to the situation. These include solving the challenges individually, consulting peers, or checking online for solutions. There is evidence of self-reflection in the process of solving challenges. R1 of Team 36 indicated that challenges are solved by investing in the identification of a solution. He stated that:

"*We invest everything! Our emotions, time… because some individuals are very difficult to deal with. For me, personally, it's been hell and disastrous in our feelings. Sometimes we need to practice patience and understanding".*

This is indicative of the impacts of personal efforts and behaviour of the team members in incorporating informal practices irrespective of lack of organisational support for such practices on performance outcomes. Team 20, R1 stated that:

"*We have a very clear task for the whole year and it is divided into two main tasks. We are two in the team and each one has their own task.*"

R2 from the same team has a different opinion, due to the nature of the job they are involved in. R2 states that:

"*Most of my task I do individually as I'm responsible for different areas than my friend* (R1). *However, if the manager asks me to support my colleague I do it right away."*

A similar situation is reported by R2 of Team 20:

"Sometimes I Google it and use the internet to get information or examples. Other times I ask other individuals in other areas of the company who I believe has the knowledge to explain to me what to do. Other times, by implementing the task, I learn by practice."

This shows that having a common objective between team members, although important and one of the main indicatives in organisations, do not necessarily motivate informal learning but still can support high performance.

This theme highlighted that characteristics of the team, as well as interdependencies and common objectives, have motivated informal learning at team knowledge level. New situation/challenges have motivated informal activity at self-reflection level. However, in total, there was evidence on how informal learning activities impacted team performance.

5.8 Low Informal Activity-High Performance

5.8.1 Leadership style

In some instances, the limited interactions and differences in leadership styles were attributable to the fact that the leaders were new to the organisation. As a result, the supervisors lacked the necessary experience in their job. In support, R2 of Team 41 stated that:

"Our supervisor is newly appointed to our team with not enough knowledge about our field. He barely knows us and spends minimum time to meet the team members and get to know us. The most important thing is the communication is really weak."

The lack of experience further influences the ability of the superiors to utilise specific leadership styles. As observed by R1 of Team 41:

"One time, for example, my ex-manager asked me to bring my laptop and papers and meet informally down in the cafeteria and you can say this positively impacted the relationship between us".

These instances of favourable leadership styles are observed in most teams whereby managers can display excellent abilities to lead only when the circumstances allow. However, in other circumstances, they are unable to rise to the occasion and offer commensurate assistance. This shows that experience and style of the leader play an important role in driving up the communication thread between them and different team members which, in this instance, resulted in low team performance.

In this quadrant, with relation to leadership style, the team maintained high performance despite low informal learning activity level resulting from lack of communication.

5.8.2 Characteristics of the task

According to the data, some functions can be considered routine, while others are unique. According to R1 from Team 2:

"*There are some days in which we have routine functions while on some other days we have new projects, systems, and initiatives".*

The variations can be attributed to the characteristics of the customers and the market in which the company operates. R2 supports the position by stating that since the job involves dealing with

customers the team members must adjust the operations based on the needs of the customers. These differences influence the methodology through which they fulfil their daily routines. R2 states that:

"*We have some methodologies which are routine. In terms of challenges that often happen, it could be unexpected changes which we need to do; it could be related to individuals, strategies, and situations".*

The rationale for high informal learning and low performance is explained by Team 2. R2 from Team 2 indicated that the fact that they have worked in the same area for a considerable period has limited their ability to achieve better performance. R2 stated that:

"I will say 30% of my job involves learning about something new. Sometimes, because I feel bored, I like to participate in other areas outside my responsibility. When I have a new challenge I try to read and understand the issue."

This explains why most of the teams in this category are involved in all activities associated with informal learning with low performance as the learning is irrelevant to their direct tasks.

"*Additionally, we are not doing research or training on learning methodologies as our job is on providing coaching and training for staff so I believe maybe if we are trained better and learn about different methodologies it would help in improving informal learning practice".*

The lack of change has led to apathy among the employees, even though the teams are located near one another, offices, and other facilities in the company. R1 of Team 2 attributes the high-low situation to the fact that learning is:

"on-the-go and you don't learn from just reading but from a multitude of methods including collaborating with other teams, speaking with other teams about issues, and using the internet amongst other methods."

The teams in this quadrant lacked the willingness to share knowledge which impacted informal learning activity at team knowledge level. Also, a lack of independent learning and routine tasks did not motivate informal learning activity at self-reflection level. On the contrary, despite low informal learning activity levels the team maintained high performance.

5.8.3 Organisational characteristics

Team 2, which is classified as high-low in terms of team knowledge-exchange, reports extensive instances where the common rooms for employees provide viable locations for employees to learn informally. The common rooms enable employees to sit and interact without limitations on their free time According to R1 of Team 2:

"*… We sit together in the common room where we informally discuss challenges and issues which need to be implemented in relation to work and they guide me in my development and learning*."

The team knowledge exchange occurs mostly between employees with extensive experience and the newcomers who have limited experience in their various responsibilities. The teams in this category are characteristically exposed to support from the management but that support is predicated on informal learning rather than measures to improve performance. Support from the organisation is reported from supervisors and managers. According to Team 2, the support from managers is available, albeit following a request. R1 of Team 2 stated that:

"*After we decided between ourselves, we spoke to our manager who also supported us in implementing this change. Furthermore, we ask our manager for help or advice relating to tasks on a daily basis so he is fully supportive".*

Supervisors also assist within the organisation. Unlike managers, supervisors are normally present within the work situation and hence their availability influences the type of assistance the provide. As a result, the extent to which they help is situational. According to R1 from Team 2:

"*Whenever there are training opportunities, he (supervisor) will support us by informing us of some*".

On the other hand, their assistance can also relate to non-technical aspects as indicated by R2 of team 2 who states that:

"For me, whenever there are strict guidelines he supports by encouraging us."

From this theme, it was identified that informal learning activities occur at low levels despite lack of collaboration which impacted informal learning activity at managerial coaching level and also lack of motivation towards independent learning impacted self-reflection.

5.8.4 Motivation to informal learning

Team 2 relies on team knowledge exchange to solve challenges based on the premise that there is a possibility that the prevailing challenges have been experienced before. R1 of Team 2 stated that:

"*Secondly, we communicate with team members through discussing informally but if it's something which impacts on the strategy we have formal meetings where action plans could be drawn in order for these challenges to be mitigated within the team. Sometimes we need to check externally with different departments like the legal department".*

Similarly, due to the number of ways through which the teams collaborate, R1 indicated that:

"*So I learn at any opportunity I can. Furthermore, we it together in the common room where we informally discuss challenges and issues which need to be implemented in relations to work and they guide me in my development and learning*".

From another perspective, the team experiences challenges in collaboration with other teams, and interacting with other teams about technical matters. According to R1 of Team 2:

"*Learning is on-the-go and you don't learn from just reading but from a multitude of methods including collaborating with other teams, speaking with other teams about issues, and using the internet amongst other methods*".

This shows that characteristics of the team play a major role in motivating informal learning, however, the formality of a task can steer the learning to be more formal especially when dealing with sensitive matters. Also this is affected by the drive to collaborate with other teams reactively to solve complex matters which, although motivates informal learning, does not necessarily improve performance.

The findings within this theme suggest that characteristics of the team have impacted informal learning activity at team knowledge level but the team still maintained high performance.

5.9 Informal Learning Activities: does one size fit all?

Through line-by-line coding, and with respect to the informal learning activity (self-reflection, managerial coaching, and team knowledge), a number of factors (see Table 5.9) were identified. The identified factors were clustered accordingly across different themes (e.g. trust and team bond, leadership style) with some of these factors cutting across multiple themes. For instance, with relation to team knowledge, the factor 'access to information' was identified within the 'trust and team bond' theme as well as the 'organisational characteristics' theme. In order to provide a structured and informative approach towards how these factors influence the facilitation of informal learning the following sections will cluster the factors identified in relation to different informal learning levels (team knowledge, managerial coaching, and self-reflection). This will effectively support identifying the influencing facilitators for different informal learning activities.

5.9.1 Team knowledge Exchange

Through the analysis, and common across many themes, it was identified that willingness to share, characteristics of the team, access to information, having common objectives, and teamwork are the factors that influenced the facilitation of team knowledge as an informal learning activity. In this context, influencing means either positively driving or negatively preventing team knowledge. To demystify this relationship, Figure 5.5 shows the different factors identified within the five themes where some of these factors were cutting across multiple themes. From Figure 5.5, it can be shown that willingness to share and characteristics of the team are the factors that strongly associate with team knowledge. For instance, within leadership style theme, it was identified that

willingness to share had positively resulted in high informal learning activity of team knowledge, and, in contrast, characteristics of the task had negatively impacted willingness to share due to intensity of the work which resulted in low informal learning activity of team knowledge.

From the above, it can be summarised that the factors identified across different themes can influence the facilitation of informal learning activity at team knowledge level. Although there are factors that were identified across multiple themes, their influence is different depending on the circumstances of the team (based on the quadrant that they are positioned within), hence the influence can be positive or negative. For instance, willingness to share can be positively impacted by leadership style and organisational characteristics but negatively impacted by motivation to informal learning and characteristics of the task. As a result, this may still motivate team knowledge but not necessarily resulting in high performance. This reflects that the positive existence of the factors (e.g. willingness to share, access to information etc.) can enable team knowledge exchange activity to take place which supports a more-tangible recognition of the role of informal learning activity in an organisation.

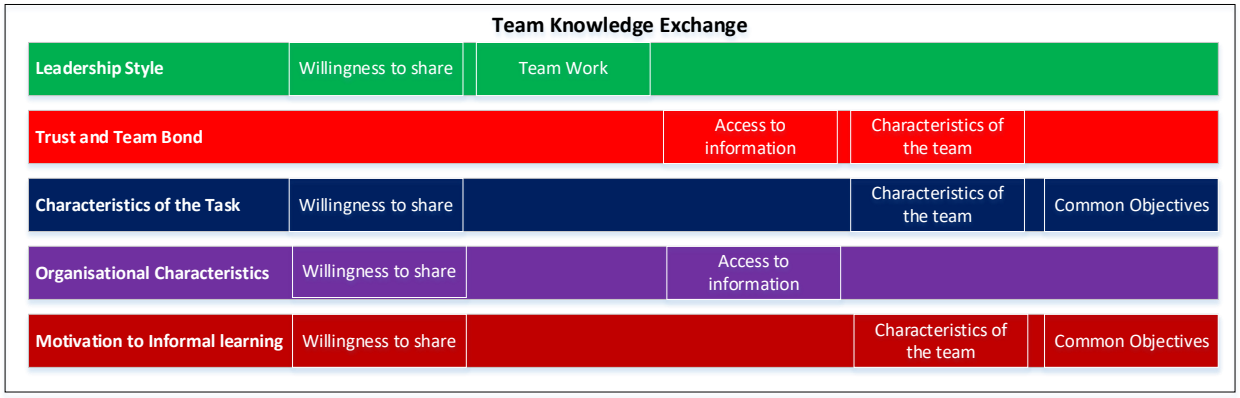


Figure 5.5. Themes (facilitators/barriers) and the resulting factors' relationship to team knowledge.

5.9.2 Managerial coaching

Similar to Figure 5.5, Figure 5.6 shows the different factors identified within the five themes in relation to managerial coaching activity. Based on the analysis, it was identified that collaboration cutting across different themes is one of the most influential factors on managerial coaching activity. In terms of trust and team bond (theme), for instance, effective collaboration resulted in high levels informal activity and poor collaboration resulted in low levels of informal activity. In

terms of organisational characteristics (theme), although collaboration resulted in high levels of informal activity some teams were high performing and others low performing. This aligns with the conclusions outlined in the previous section on the subjective relationship between informal activity and team performance.

In addition to collaboration, other factors were identified including communication, openness, age difference, and efficiency and effectiveness. It can be recognised that most of the factors were within the leadership and trust and team bond theme. For instance, looking at leadership style, the impact of leadership can be multitude (positive or negative) and this requires thought about how it impacts different factors (e.g. collaboration, openness, etc.).

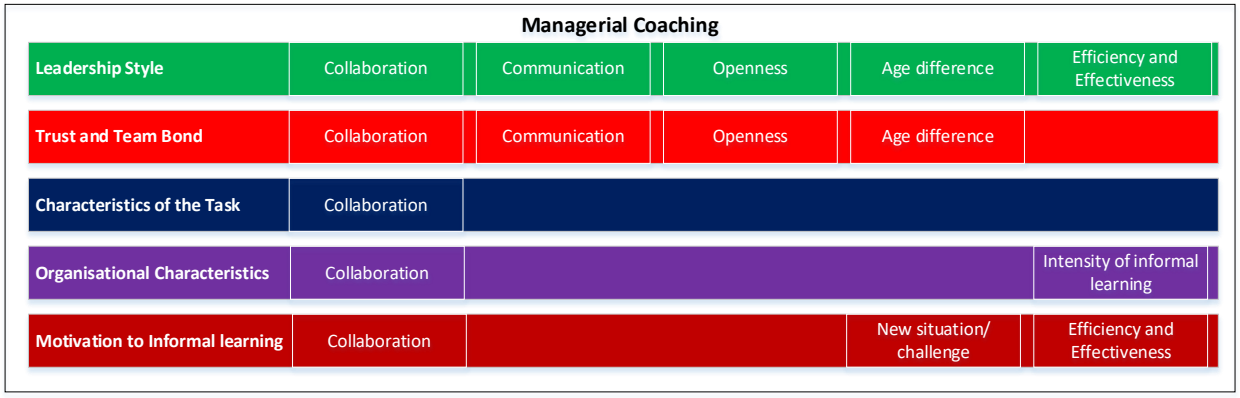


Figure 5.6. Themes (facilitators/barriers) and the resulting factors' relationship to managerial coaching.

5.9.3 Self-reflection

Similar to Figures 5.5 and 5.6, Figure 5.7 shows the different factors identified within the themes in relation to self-reflection activity. In comparison to team knowledge exchange and managerial coaching, the factors identified were within four themes only. In total, three factors within the four themes that influence the facilitation of self-reflection were identified: independent learning, routine tasks, and intensity of formal learning. Independent learning can be recognised as the factor with the most influence which is affected by leadership style (theme), organisational characteristics (theme), and characteristics of the task (theme).

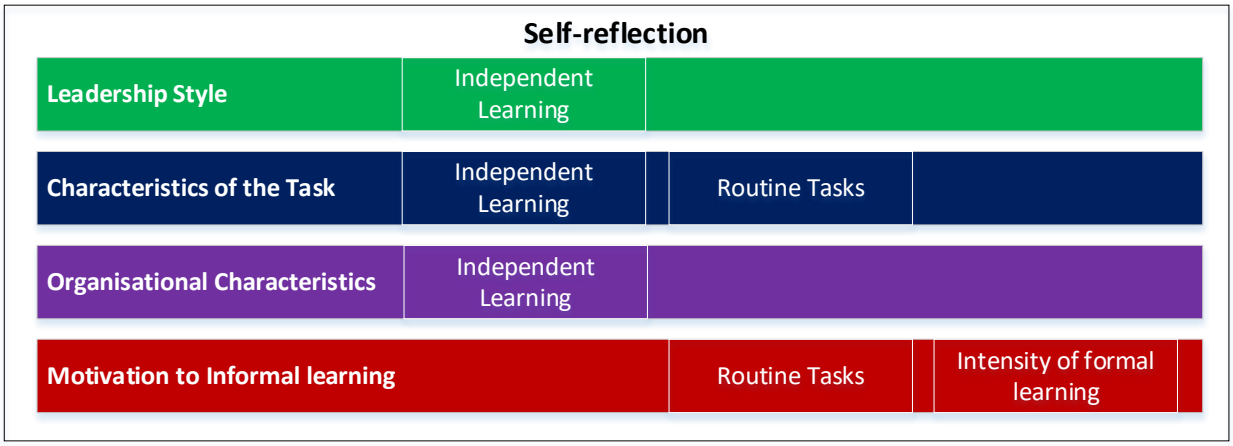


Figure 5.7. Themes (facilitators/barriers) and the resulting factors' relationship to self-reflection.

5.10 Chapter Summary and Conclusion

This chapter presented the analysis on qualitative data gathered using focus groups with 11 teams identified as a result of the quantitative analysis from the previous chapter. This corresponds to the third research objective which was to synthesise understanding of factors that affect informal learning within teams in Qatar. Thematic analysis was used to identify themes in relation to the quadrants which resulted from Chapter 4. In total, five themes were identified: trust and team bond, leadership style, characteristics of the task, organisational characteristics, and motivation for informal learning. Through the analysis, a number of factors (e.g. willingness to share knowledge and collaboration) that influence the facilitation of informal learning were identified. Some of these factors were related to different themes and this supported an improved understanding of different informal learning activities (team knowledge, managerial coaching, and self-reflection). The factors that influence the facilitation of different informal learning activities were illustrated in Figures 5.5 (for team knowledge), 5.6 (for managerial coaching), and 5.7 (for self-reflection) The chapter concluded by analysing the influence of these factors on different informal learning activity levels. Although the interpretations in this chapter are based on qualitative analysis of data gathered within an identified context, it was based on experiences faced by different team members in an organisation that described and interpreted their experiences to understand how informal learning occurred and the role it played within the organisation. This satisfies one of the six criteria described by Anderson (2017) when evaluating the rigour of a qualitative finding which is transferability. This reflects that, although the study took place within a telecommunication

company, the analysis and implications derived from the study are abstract to support evaluating and investigating the findings in another context. The next chapter discusses the implications derived from this chapter on the facilitation of different informal learning activities based on the organisation investigated within this study.

CHAPTER 6. DISCUSSION

6.1 Introduction

This chapter aims to shed light on the implications of the analysis of the quantitative and qualitative data. To recap, the aim of this research is to provide an improved understanding of facilitating informal learning at three levels across teams (self-reflection, managerial coaching, and team knowledge exchange) in Qatar. Further insight was gained on the relationship between informal learning activities of teams and their performance in Qatar. The primary evidence was obtained using both quantitative (Phase 1) and qualitative (Phase 2) data which was carried out sequentially.

The quantitative (Phase 1) data was gathered from 47 teams in the case-study company using a questionnaire that targeted employees and their supervisors. From the statistical analysis it was identified that frequency of informal learning in the studied organisation is high especially with relation to team knowledge exchange and self-reflection activities. The correlation tests although identified some relationship between informal learning activity (self-reflection) and team performance, also found that there was a need to further explore the facilitators/barriers towards informal learning activities which was done using qualitative data (Phase 2). In total, 11 teams based on the judgemental sampling using scatter plots were identified for the second phase of the study where focus group was used to collect the data. Thematic analysis was used to analyse the qualitative data where, in total, five themes were identified: trust and team bond, leadership style, characteristics of the task, organisational characteristics and motivation to informal learning.

Chapter 5 concluded with identifying several factors that influence the facilitation of informal learning activities. For each of the informal learning activities, the factors that influenced the facilitation of informal learning were highlighted. This chapter will discuss the analysis derived from both Phase 1 and Phase 2 which will satisfy the final objective of this study: to develop an organisational framework that reflects intermediate factors impacting the facilitation of informal learning.

6.2 Frequency of Different Informal Learning Activities and Impact on Team Performance

Based on the analysis derived from the quantitative data it was found that none of the informal learning activities, including self-reflection, managerial coaching, and team knowledge exchange had a statistically significant impact on the performance of the teams. Although this finding aligns with some previous studies (e.g. Carrasco & Silva, 2017; Park & Choi, 2016) and Rogoff *et al*., 2016) that identified the lack of evidenced relationship between informal learning and team performance, the significance of this research is that it looked into informal learning at different levels which provided a more-holistic perspective. For instance, team knowledge exchange ranked the highest among the most widely practised informal learning activity with managerial coaching reported as having the lowest mean among the 47 teams. With respect to different types of informal learning activities, some efforts (e.g. Wang & Noe, 2010; Wenger & Snyder, 2000; Boud & Garrick, 1999) highlighted that most organisations have a preference in the type of informal learning activities they are involved in. However, these studies did not tangibly indicate how informal learning activities at different levels can correlate or how it impacts on team performance. Hence, findings from this research are considerably more robust in terms of understanding the relationship between informal learning and team performance.

From the quantitative analysis, amongst the three informal learning activities, statistically significant negative correlation was found between self-reflection and team performance. Studies in the literature (e.g. Choi *et al*., 2017; Zimmerman *et al*., 2011) pointed out the value of self-reflection as being one of the major drivers in improving the competencies of employees which effectively should support the improvement of overall team performance. However, based on findings from this study, statistically the relationship between self-reflection and team

performance was inverse. On the other hand, managerial coaching and team knowledge exchange has limited impact on the performance of teams. Former studies (e.g. Baron & Morin, 2009; Devine *et al*., 2012) highlighted that both managerial coaching and team exchange knowledge can support team performance in a positive manner. More importantly, some studies (e.g. Burmeister *et al*., 2011; Dong *et al*., 2017) have even discussed that team knowledge exchange is the most effective form of informal learning which was not evidenced based on results from this study. The study by Yang & Johnson (2012), incorporating the three levels of informal learning activities, concluded that informal learning as a whole is negatively correlated with team performance. Although the findings by Yang & Johnson (2012) align with findings from this research, understanding the different relationship between each informal learning activity and team performance would better support understanding when exploring facilitators and barriers towards informal learning. The finding of negative correlation between self-reflection and team performance, within the context of this research, would draw the attention towards multiple factors including type of the organisation, nature of tasks handled by employees, and even the learning processes followed within the workplace. Therefore, it can be asserted that informal learning across different organisations may lack the association with team performance and, in some instances, can also be too complex to be examined. This shows that informal learning in organisations differ and this can be attributed to a variety of factors that can intervene as part of learning in the workplace. Although learning in the workplace is often formally facilitated by human resource practices (Manuti *et al*., 2015), it is vital to simultaneously monitor how informal learning can also be facilitated in organisations.

6.3 Facilitating Informal Learning: Influencing Factors

As part of this research it was important to explore factors that influence the facilitation of informal learning. This commenced in Phase 1 which was part of the quantitative data where demographics and other factors (age, gender, work experience, and level of education) were examined. From the statistical tests applied, correlation tests identified a number of positively significant correlations including age with managerial coaching as well as education level with self-reflection. In response to these findings, many studies in the literature (e.g. Schulz *et al*., 2010; Nilsson & Rubenson, 2014; and Froehilch, 2017) highlighted that age influences informal learning. Similarly, other studies (e.g. Skule, 2004; Misko, 2008; Berg & Chyung, 2008; Livingstone, 2001) also showed

that education level plays an important role in motivating informal learning where the higher the educational level the higher the tendency towards informal learning. Although age and education level were identified as influencing factors towards informal learning, this was mainly examined within the merits of how it impacted team performance, hence the qualitative phase (Phase 2) was conducted where more emphasis and focus was obtained to gain deeper understanding of the influencing factors to facilitate informal learning.

From the qualitative analysis using the data collected from the 11 teams, a number of factors were identified which supported greater understanding of the complexities associated with facilitating informal learning. The factors (e.g. willingness to share knowledge and collaboration) were identified through line-by-line coding and were then categorised under the appropriate theme (e.g. trust and team bond, leadership etc). To derive meaningful conclusions, the identified factors were mapped to the respective themes with respect to different informal learning activities (team knowledge exchange, managerial coaching and self-reflection). It is important to highlight the identified themes: trust and team bond (Edmon son & Lei, 2014; Davenport *et al*., 1998; Dymock, 2003; Krogh *et al*., 2000), leadership style (e.g. Manuti *et al*., 2015; Garcia-Morales *et al*., 2008; Jung *et al*., 2008), characteristics of the team (Foster, 2011; Jeon and Kim, 2012; Kyndt *et al*., 2018), organisational characteristics (Bednall *et al*., 2014; Sambrook, 2007), and motivations to informal learning (Schurmann & Beausaert, 2016; Abdul *et al*., 2016; Liezelot *et al*., 2017; Manuti *et al*., 2015). Although these studies and many others have elaborated on facilitating informal learning organisations, this research revealed that a harmony exists between different facilitators which influences the existence of informal learning. For instance, the factor willingness to share knowledge was identified as the most influential impacting the facilitation of informal learning at team knowledge exchange activity level. This is because it was identified as a common factor across most of the themes. Another example is the factor collaboration which was identified as the most common factors across all the themes influencing the facilitation of managerial coaching. As for self-reflection, the factor independent learning was identified across most of the themes influencing the facilitation of self-reflection. Although such factors and some others (e.g. communication, openness, etc.) may have directly/indirectly been identified in former studies/investigations, this study showed that facilitating informal learning at different levels is impacted by the harmony between different facilitators (in the qualitative analysis referred to as

themes). This can further portray the complexity of facilitating informal learning in organisations and how it requires holistic consideration by looking into the harmony of different facilitating factors.

6.4 Facilitating Informal Learning: The Need for Holistic View

It can be stated that, based on the analysis, facilitating informal learning in organisations is considerably complex and the degree of this complexity can vary from one organisation to another. One of the main implications of the analysis is that informal learning needs to be acknowledged at different activity levels and this can better support more-informed clarity about facilitating informal learning. The previous section highlighted that facilitating informal learning at different levels is impacted by the harmony between different facilitators. Although existing literature on informal learning activities (e.g. Kember *et al*., 2000; Van *et at*., 2013; Nyfoudi, 2015) is extensive, the unstructured nature of informal learning in organisations imposes the main complexity in understanding the mechanisms that can support facilitating it. Although models such as Dynamic (Patterson *et al*. (2017) and Nomological (Decius *et al*., 2019) attempt to provide a structured approach towards informal learning, tracing the extents of informal learning and how it occurs can remain complex. The view of informal learning using different informal learning activities (e.g. Yang & Johnson, 2012) and using evidence derived from this study can be recognised as a more informative mechanism to understand complexities associated with facilitating informal learning. Although the themes identified in the study were acknowledged in the literature, their influence was multitude on different informal learning activities and, more importantly, resulted in different harmonies (e.g. all themes resulted in collaboration which influenced the facilitation of managerial coaching) for different informal learning activities. The understanding of these harmonies can support organisations in understanding how to facilitate enabling mechanisms that result in different informal learning activities. For instance, referring back to Figure 5.5, it was recognised that positively collective combination of motivation to informal learning, leadership style, organisational characteristics, and characteristics of the task would encourage willingness to share knowledge. Therefore, if one of those mentioned facilitators has negative influence (e.g. unsuitable leadership style) the harmony to encourage willingness to share will be affected and this can impact facilitating an informal learning activity.

Using this thinking mechanism will provide a more controlled approach to recognising external organisational factors (Anderson, 2002) that can impact the facilitation of informal learning in organisations. In return, this can potentially support tracing and evaluating (e.g. findings from this study that self-reflection is inversely related to team performance), in the long term, how informal learning activities might support team performance. Therefore, based on the analysis, this research extends the conceptual framework identified in Chapter 2 and proposes a developed framework (see Figure 6.1 below) which can be used to as an enabling mechanism to understand the facilitation of informal learning activities in organisations.

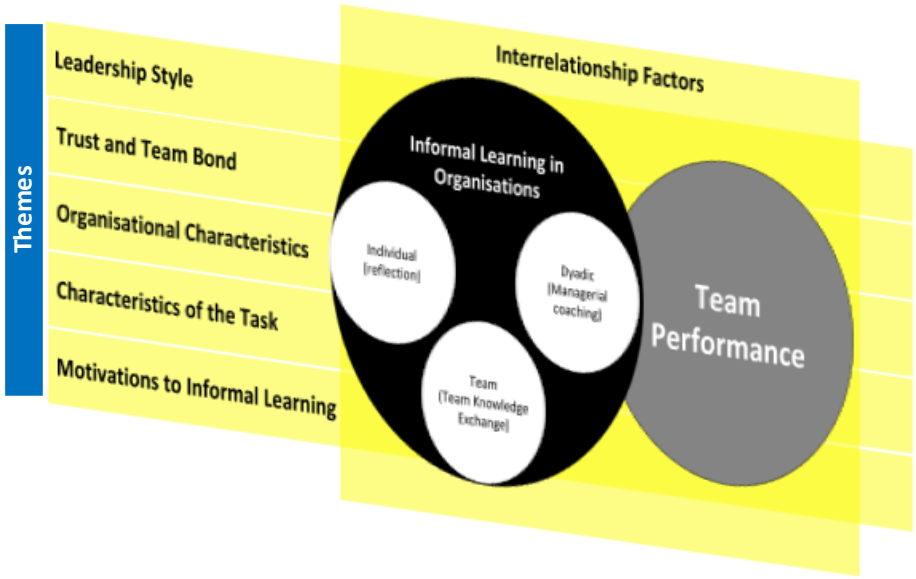


Figure 6.1. Developed framework to facilitate informal learning in organisations.

6.5 Conclusion

This chapter discussed the implications of the primary data analysis resulting from the quantitative and qualitative data. The discussion commenced by pointing out that, based on analysis derived from the quantitative data, the impact of informal learning on team performance was mainly elicited in self-reflection which had an inverse relationship with team performance. This reflected the value of looking into informal learning through activities rather than looking into informal learning as a whole. Section 6.3 has also discussed the factors that impacted informal learning activities indicating age and education level to be factors that can impact different individuals

when pursuing informal learning in organisations. One of the major implications identified is the harmony between different facilitators which result in factors that influence the facilitation of informal learning activities. Revealing these harmonies, as a result of qualitative data analysis, was recognised as an important finding as it supports revealing many of the complexities associated with facilitating informal learning based on the organisation in this study. The chapter concluded with highlighting the need for a more holistic view towards informal learning and this is to be done with respect to different informal learning activities. As a result, this research proposed a developed framework which can be used as an enabling mechanism to understand the facilitation of informal learning activities in organisations.

CHAPTER 7: CONCLUSION AND FUTURE WORK

7.1 Introduction

The study aimed to provide an improved understanding of facilitating informal learning at three levels (self-reflection, managerial coaching, and team knowledge exchange) across teams in Qatar. The study used sequential mixed-methods approach. Quantitative data from the 47 teams was analysed first, followed by qualitative data from 11 teams. The previous chapter discussed the implications of quantitative and qualitative data analysis with particular emphasis on informal learning different activities and team performance and also the complexities associated with facilitating informal learning. The previous chapter also concluded with a framework that supports an improved understanding of facilitating informal learning in organisations. This chapter provides a summary on the research conducted highlighting the researcher's journey and development during the research, achieving research objectives, highlighting research contributions, and concludes with research limitations and future work.

7.2 Self-Reflection

This section provides a reflection on my PhD Journey, which elaborates on my professional development, professional skills and emotional engagement. The Kolb Cycle will be used to aid the structure of this reflective piece which includes concrete experience, observation, abstract conceptualisation, and action experimentation.

- **Concrete Experience**

I come from an Engineering background and pursued a Postgraduate degree in strategic management at HEC in France. I have 10 years' experience in project management within various fields including construction and major events such as World Cup 2022. Despite being involved in managing projects of different types, leveraging the knowledge I gained over many years was essential and perhaps can also be transferrable within the organisation I am in. I found that learning forms one of the major pillars that supports continual development, enriches perspectives, and perhaps widens job opportunities. Most of the learning that I was exposed to tended to be formal but also included informal learning which helped my skill development and career progression. Following years of experience and having managed projects and people, it was important to seek further clarity on informal learning culture in organisations so that its value can have better and

more tangible exposure, hence I decided to pursue a degree of Doctor in Business Administration with a focus on informal learning in organisations. The DBA allowed me to integrate the research angle which would help inform my practice and deepen my understanding of the subject I intended to research and investigate. My experience within the DBA initially began with supervisory meetings to refine the scope of my research study which was supported by extensive readings and interactive sessions with other researchers. Simultaneously, I also attended a series of workshops and seminars and they acted as a good base to structure my thinking and coherently be able to understand and rationalise the scope of my research study.

- **Reflective Observation**

In terms of professional development, and due to nature of the work that I do, the intention of conducting the research was due to my belief in its importance to the business field and due to my career interests which span leadership positions and managing the human elements of organisations. During the first few months of my DBA it was important to record and keep track of my meetings with the supervisors. During that time, the working mechanism and managing different tasks that I had to do could only be described as a large wave of uncertainty raising more questions than answering them. Despite the nature of my research area, the available material, although extensive, was often ambiguous and this caused additional stress which affected my work/life balance. The initial clue to step away from many of the uncertainties within my research was through using my own experience of informal learning and suggestions from my supervisors so I began thinking about what motivated me to learn, how did it occur, and was there any impact on my performance. Thus, this has brought more positivity to my DBA and has made me more passionate about my own research.

Through several stages within this research, my doctoral journey has positively impacted my career as my knowledge about informal learning and related elements facilitated my fast-paced promotion from a lower level officer in 2017 to my job as a manager in my current position. The theoretical knowledge and practical experience which came with the DBA gave me the knowledge, confidence, and skills in being able to use the specialised information on informal learning in making recommendations to senior team members of my organisation and has influenced my organisational development in a positive way. For instance, during my experience while I was

doing the DBA I had to undertake informal learning myself when asked to manage one of the major events in a new organisation about which I had limited awareness. In that sense, I recognise that informal learning is context-based and, although in that situation my informal learning has mainly occurred at individual level, I was more conscious of informal learning that occurred at team level and how knowledge is being transferred from one individual to another.

In terms of the DBA programme itself, working with an intellectually challenging supervisory team has supported improving my professional attitude as a researcher and improved my organisational skills as a practitioner. As a researcher communicating ideas, thoughts, and conceptualisations between myself, the supervisors, and other members of the academic community has significantly boosted my confidence and improved my critical thinking. In addition, attendance of workshops and seminar training have also contributed toward wider exposure within my organisation as I am more able to discuss my ideas to diver audiences. Expanding on this, in 2019 I was the recipient of the NTU Doctoral Award Certificate for the presentation of some of my initial findings and research at the NTU event. Having spent most of my life and experience in Qatar, winning this award was a major boost to my confidence in terms of presenting and talking to a wider audience. As a practitioner, my communication skills were also enhanced within my professional life through the workshop presentation activities which were part of the DBA training programme. For instance, during the data collection process I had to make presentations to the leadership of the company under investigation, a multinational telecommunications firm in the MENA region, to convince them of the importance of their participation in the research. I believe using communication skills in presentations enhanced my confidence which enabled me to convince my employer to allow me to get the participation of the employees in the research investigation.

- **Abstract Conceptualisation**

In conducting the research, my approach to thinking changed. Before my research study I believe I was not very objective and did not critically examine issues of concern but, as I moved from one stage of the DBA to the other, my ability to be more critical in my thinking and not being biased in my judgment developed. For instance, when I read about generic information which refers to surveys, I became more critical at examining details such as rationalising the methodology used

and how to clearly envisage my philosophical stance that responds to the phenomenon investigated.

In selecting the appropriate method, I was able to critically think about my survey design, sample size, and participant information before incorporating such information for use within either my academic or professional life. Following my supervisors' guidance, I was able to critically review existing materials in a mechanism that supported the scope of my research where the mechanism entailed looking at different methods applied within informal learning and seek to extract limitations and shortfalls to help me formulate the design of my research method. This has also prompted my understanding of the value of different types of data/information and how to expose direct and indirect impacts within a problem. Given the knowledge and expertise of my supervisors, I was able to think more holistically so that I encompass rich considerations of different aspects (e.g. facilitators/barriers to informal learning) related to my research. This has supported me to form the first phase of my data collection which used questionnaires based on my studies from the literature.

Through my research I was able to reflect on my current work environment and relate theoretical suppositions within my research to the organisational workplace. As part of a large organisation, I was also able to closely observe barriers and facilitators for learning and establish connections between my observations and the research I conducted. More importantly, my research contributions have motivated me to re-think about mechanisms that support informal learning and how it can occupy more important roles within organisations. Also, my ability to develop in both theoretical knowledge and practical application of my research, and the overall DBA journey, facilitated my development of other skills including communication skills.

- **Active Experimentation**

Overall, the DBA journey has been an interesting one which, surprisingly, not only enhanced my development in academic skills and knowledge but also gave practical life skills which are essential to my career development and contribution to the academic environment.

Undertaking the DBA has motivated me to become an independent learner and seek to find meanings underlying information. The communication thread with my supervisors - as well as

understanding their feedback and suggestions - boosted my confidence and self-esteem to propose and discuss ideas but, more importantly, contextualising complex concepts using real-life scenarios.

In terms of contributing to the academic environment, using the research experience I gained, I am intending to further experiment the value of informal learning within the organisation that I work at and seek to publish my findings in journals. Through my network with the supervisors and other academics in the field I aim to improve collaborations for value exchange and more exposure of informal learning in the Middle East.

In terms of my career development, my recent job was indeed a result of my knowledge of utilising informal learning to improve my expertise. Hence, my next goal is to spread awareness and importance of informal learning within my team, actively discuss arising issues, and support sharing good practice with peers at my organisation.

7.3 Research Objectives

The first objective of the study was to review the concepts and definitions of informal learning and how it is positioned within organisations. The literature explored theories and concepts of informal learning which narrowed to look into existing models for informal learning. It then looked into informal learning using different activity levels (individual, dyadic, and group) where it was indicated such activity levels provide a more focused approach to understand informal learning, however, studies that linked informal learning activity levels to team performance were considerably limited. The literature also elaborated on different facilitators and barriers towards informal learning but studies have often discussed the facilitation of informal learning in general and limited efforts have linked facilitators at an informal activity level. The literature concluded with a conceptual framework that rationalised the need to examine the impact of informal learning activities on team performance and what factors support facilitating informal learning activities.

The second objective aimed to examine the frequency of informal learning at three levels and whether it has an impact on team performance in Qatar. This objective was achieved using the primary data gathered from the questionnaire within the context of the selected case study in Qatar.

The survey showed that the frequency of informal learning within the studied organisation is high but the relationship between informal learning and team performance was only elicited through self-reflection activity which had an inverse relationship with team performance. The quantitative analysis concluded with the use of scatter plots that provided judgemental sampling on the results obtained from each team. This provided a more focused approach in selecting the teams to gain deeper understanding of informal learning activities for each team to better identify barriers and enablers for informal learning.

The third objective, which aimed to synthesise understanding of factors that affect informal learning within teams in Qatar, was achieved from the primary data using qualitative data from the focus group with different teams in the context of the selected case study. The data was collected from members of 11 teams. Partly from the quantitative data analysis, it was revealed that individual-related factors such as age (positive correlation with managerial coaching) and educational level (positive correlation with self-reflection) can impact the facilitation of informal learning activities. Thematic analysis was used to analyse the qualitative data where five themes were identified. Through the analysis, a number of factors (e.g. willingness to share knowledge and collaboration) that influence the facilitation of informal learning were identified. Some of these factors were related to different themes and this supported an improved understanding of different informal learning activities (team knowledge, managerial coaching, and self-reflection). The factors that influence the facilitation of different informal learning activities were illustrated in Figures 5.5 (for team knowledge), 5.6 (for managerial coaching), and 5.7 (for self-reflection). The chapter concluded with analysing the influence of these factors on different informal learning activity levels.

The last objective, which aimed to develop an organisational framework that reflects intermediate factors impacting informal learning activities within organisations in Qatar, was achieved using analysis of the primary data. The quantitative analysis revealed that the relationship between informal learning and team performance is limited despite the inverse relationship found between self-reflection and team performance. Using the qualitative data analysis, one of the major implications identified was the harmony between different facilitators which resulted in factors that influence the facilitation of informal learning activities. Revealing these harmonies was

recognised as an important finding as it supports revealing many of the complexities associated with facilitating informal learning based on the organisation in this study. Therefore, the discussion chapter concluded by highlighting the need for a more holistic view towards informal learning and this is to be done with respect to different informal learning activities. As a result, this research proposed a developed framework which can be used as an enabling mechanism to understand the facilitation of informal learning activities in organisations.

7.4 Research Contributions

7.4.1 Theoretical contribution

The proposed framework has supported acknowledging the interrelationships between different informal learning activities at different levels. This can support informing existing bodies of knowledge on how different informal activities are facilitated and the role harmony between facilitators plays in facilitating different informal learning activities. This will provide a more focused and traceable mechanism in monitoring learning in the workplace and prompt more attention towards how informal activities occur in organisations. In return, this can potentially support indicating how informal learning activities might support team performance. The indicated harmony between different facilitators towards informal learning can also inform future research into the integration of informal learning activities as part of the overall learning in workplace. Therefore, this research enriches the need to further explore informal learning using different informal learning activities and also the harmony between different facilitators. This will provide a more controlled approach to recognise external organisational factors that can impact the facilitation of informal learning in organisations.

7.4.2 Practical contribution

The conclusions drawn from this research can enable the organisation to build more effective workplace learning and become more competitive. Based on the findings, the organisation will gain a better understanding of the learning environment and of its employees' learning behaviour and attitudes. This will also enable the company to implement the appropriate strategy to provide the right learning tools and channels. As it currently stands, the organisation experiences informal learning through self-reflection, managerial coaching and team knowledge exchange. As a result of this research, the developed framework can provide an approach towards facilitating informal

learning activities. Through analysis of this research, the organisation is anticipated to become more cautious to improve the awareness of line managers and supervisors in terms of providing adequate support and time to assist their employees. In other words, the company needs to foster the coaching skills of team leaders. Also, the company should consider managerial coaching skills as a requirement for any future promotion. More importantly, although learning in the workplace is often formally facilitated by human resource practices, it is vital to simultaneously monitor how informal learning can also be facilitated in organisations. This research provides help and guidance for other companies that wish to either understand their informal learning environments or to assess the informal learning activities. This study can provide organisations within the same region, or similar settings, into how informal learning can be facilitated and, potentially, the values that can be gained from it. As a result of this study, organisations need to engage in a system-wide improvement of informal learning to achieve balanced understanding of how different informal activities (self-reflection, managerial coaching, and team knowledge exchange) can be facilitated so that the value can be tangibly measured.

7.5 Limitations and Future Work

As part of this research, and with the use of mixed methods, several limitations exist. One of the main limitations is the generalisability of this study as the case study targeted a telecommunications company in Qatar. Although the researcher has abstracted the output in a way that can support generalising the outcomes, further research is needed to apply the results to other countries and different industries. Within the study itself, and taking into account that it covered 47 teams as part of the primary data collection, the data was collected at an individual level and then aggregated into a team level using the average response of the team members. This could pose a limitation because the accuracy of the outputs at team level can be impacted due to this averaging process from individual to team level. The outputs from qualitative analysis identified several themes, the interrelationships between which, although supported explaining the complexity that lies within informal learning, need to be applied within different contexts to be evaluated. Based on the research conducted, below is a summary of future work:

- Future work should evaluate the findings from the qualitative analysis of the study into the context of the company investigated and seek further understanding of the themes and the interrelationships between them.

- The research posits an original piece for informal learning within the context of a selected company in Qatar thus future work can investigate other companies within the same country or the Middle Eastern region in order to encompass richer consideration of the nature of informal learning and its related activities in the Middle East.
- With the inclusion of 47 teams in this study and the approach used to aggregate outputs from an individual to team level, future research should seek to identify alternative methods that can support collecting data at team level.
- Investigate the synchronisation between informal and formal learning in terms of how they impact team performance collectively. In this way there will be potential to understand the correlation between informal learning activities and team performance.

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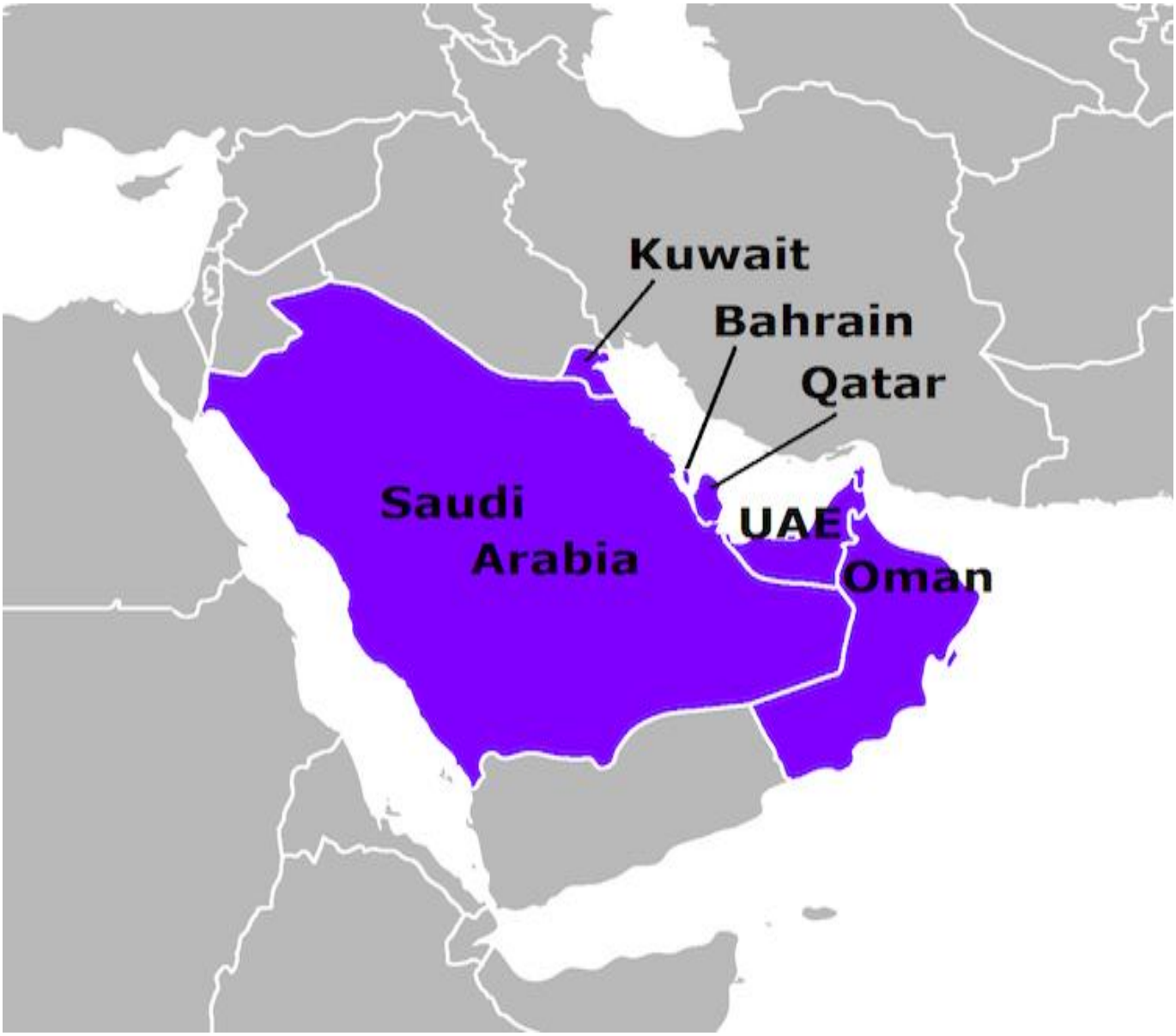
APPENDICES

APPENDIX 1: Four Pillars of the Qatar Vision 2030 (General Secretariat For Development Planning, 2008)

APPENDIX 2: A Map of the Six GCC Countries (Sawe, 2017)



APPENDIX 3: The Case-Study Company's Management Team's Invitation to all Employees Supporting the Research

Dear Employee,

We are pleased to invite you to join the following project which is carried out per the requirements of the Doctor of Business Administration (DBA) degree at Nottingham Trent University (UK) supervised by two senior academics, Prof. Helen Shipton, and Dr. Stefanos Nachmias. Please contact the researcher Dana Al-Hajri in the first instance if you have any questions about the project after you have read the below brief (dana.alhajri2015@my.ntu.ac.uk).

Before you decide whether to participate in the study it is important that you understand the reasons why we are carrying out the research and what your participation will involve. We would be grateful if you read the information carefully and get back if anything is unclear.

This research will help organisations in Qatar to understand the best method for learning in the workplace in order to develop your knowledge and expertise when performing your daily tasks and jobs to outstanding and high qualities.

All of your contributions will be treated as strictly confidential. **All data will be used only for addressing the objectives of the study**. Any reporting of the findings will ensure your personal anonymity as the only details required in the study are demographic and work experience information, omitting other details such as location and personal names. **Names will not be shared with your manger**. **Aggregated results, not your individual results, will be used to produce an academic research report** and ultimately be made available to the public domain via journal article or/and conference proceedings. We are confident that the arrangements described above will prevent any of your information being shared with anyone outside of the research team. There is no risk or discomforts involved in this study apart from your valuable time.

If you decide to take part in the online survey please be aware that it will take no longer than 10-15 minutes to complete. Should you decided to withdraw your data from the study (premature and after full participation), you will be free to do that within two weeks without having to give a

reason and with impunity. In the case that you wish to withdraw from the study please email Dana Al-Hajri (dana.alhajri2015@my.ntu.ac.uk) expressing that you would like to do so. By completing this survey you agree and consent to the conditions above.

Thank you for participating in the project.

Dana Al-Hajri

APPENDIX 4: Email Invitation Template Sent by the Researcher to all Employees and Supervisors (Source: The Researcher, 2018)

Dear Dana,

Hope this email finds you well. Based on Mr. [redacted] email, I am writing to you to request your participation in a brief survey. Your responses to this survey will help us evaluate the effectiveness of specific factors in the workplace which will help the organization to improve the workplace. This research is supported and approved by the company and your branch manager.

Personal Access Code: **DA17B** (Please **Do Not** Share this Code with Anyone)

The team were are refereeing to in this survey is the following team supervised by Abdulrahman:

1- [redacted]
2-
4-
5-

The survey is very brief and will only take about 10 minutes or less to complete. Please click the link below to go to the survey website and then enter the personal code to begin the survey.

Should you have any comments or questions, please feel free to contact me at dana.al-hajri2015@my.ntu.ac.uk or 66655544. Your participation in the survey is completely voluntary and all of your contributions will be **treated as strictly confidential**. All data will be used only for addressing the objectives of the study. Aggregated results, **not your individual results will be used** to produce an academic research report.

Thank you very much for your time and cooperation. Your Feedback is very important to us.

Regards,

Dana Al-Hajri

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://nbsntu.eu.qualtrics.com/jfe/preview/SV_eFAAvVyZyVQ9SRv?Q_CHL=preview

Follow the link to opt out of future emails:
Click here to unsubscribe

APPENDIX 5: Generic Questions for Employees and Supervisors

Please enter your code number that is located in the email sent with this link:

(1) Are you normally in this team?

- o Yes
- o No

(2) Do you belong to other teams?

- o Yes
- o No

(3) If yes, please indicate what proportion of your work time you spend in this team versus other team(s)

- o 75% of time in this team, 25% of time in another team
- o 50% of time in this team, 50% of time in another team
- o 25% of time in this time, 75% of time in another team
- o Some other arrangement (please give details) …….

(4) Gender

- o Male
- o Female

(5) Age

- o 20- 29 years
- o 30- 39 years
- o 40- 49 years
- o 50- 59 years
- o 60 and above

(6) How long have you been working in this organisation?

- o Less than 1 year

- 1 - 4 years
- 5 - 10 years
- More than 10 years

(7) What is the highest level of your education?

- Less than secondary
- Received Secondary certificate
- Received Bachelor degree
- Received Masters degree
- Received PhD, MD, or other advanced degree

APPENDIX 6: Questions for Employees other than Supervisors

The following statements describe the different ways that people participate in learning activities and learn from their line-manager and other colleagues in the workplace. Can you indicate to what extent each of these statements applies to your situation.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1- I always question the way others do things and try to think of a better way.					
2- I like to think over what I have been doing and consider alternative ways of doing it.					
3- I often reflect on my actions to see whether I could have improved on what I did.					
4- I re-appraise my experience so I can learn from it and improve for my next performance.					

Indicate to what extent you agree with the following statements regarding your Supervisor

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. Encouragement from my supervisor, especially about taking risks on my career decisions, is important to me.					
2. To help me think through issues, I like it when my supervisor asks questions rather than providing solutions.					
3. I always try to seek constructive feedback from my supervisor.					
4. I know that my opinions/suggestions are appreciated by my supervisor even when they conflict with his/hers.					
5. I like that my supervisor uses real world cases, scenarios, and examples to help me learn.					
6. I often tell my supervisor whether and how their feedback and my interactions with him/her are helpful to me.					
7. I trust that my supervisor always shares his/her feelings openly in conversations with me.					
8. I trust that my supervisor focuses on my needs in discussions with him/her.					
9. My supervisor and I leave time for relationship building when interacting with each other.					
10. I look for connections with my supervisor when being coached in the workplace.					

11. I am open and candid with my supervisor about my opinion in difficult work situations.					
12. I openly share my personal values with my supervisor when being coached.					

Indicate to what extent you agree with the following statements regarding your team at work:

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. Members in my team share all relevant information and ideas.					
2. Members in my team listen carefully to each other.					
3. If something is unclear we ask each other questions.					
4. Members in my team elaborate on each other's information and ideas.					
5. In my team, information from one member is often complemented with information from another.					
6. My team draws conclusions from ideas that are discussed.					
7. My team tends to handle differences of opinions by addressing them directly.					
8. In my team comments on ideas are acted upon.					
9. Members in my team often ask each other critical questions to verify different opinions and ideas.					

APPENDIX 7: The Supervisor Survey

[SUPERVISOR– WELCOME PAGE]

Dear Supervisor,

We are pleased to invite you and your team to join the following project which is carried out to fulfil the requirements of Doctor of Business Administration (DBA) at Nottingham Trent University (UK), supervised by two senior academics: Prof. Helen Shipton and Dr. Stefanos Nachmias. Please contact the researcher Dana Al-Hajri in the first instance if you have any questions about the project after you have read the below brief (dana.alhajri2015@my.ntu.ac.uk).

Thank you for a considering in participating in this research project. Before you decide whether to participate it is important that you understand the reasons why we are carrying out the research and what your participation will involve. We would be grateful if you read the information carefully and discuss it with your organisation if you wish. Please feel welcome to get back to us if anything is unclear and to take as much time as you need to decide whether or not to take part. This research will help *[company name]* to understand the best method for learning in the workplace to improve the performance of the teams. This project will not compare teams' performance nor capabilities, it will just explore the wider learning needs of the team.

All of your contributions will be treated as strictly confidential. All data will be used only for the purpose of the research and your input **will not be shared** with your team. Any reporting of findings will ensure your **personal anonymity** as the only details required in the study are demographic and work experience information, omitting other details such as branch and names. Results will be used to produce an academic research report and, ultimately, be made available to the public domain via journal article or/and conference proceedings. We are confident that the arrangements described above will prevent any of your information being shared with anyone outside the research team. There is no risk or discomfort involved in this study apart from your valuable time.

If you decide to take part in the online survey, please be aware that it will take around 10 minutes to complete. Should you decide to withdraw your data from the study (prematurely and after full participation) you will be free to do that within two weeks without having to give a reason and with impunity. In case you wish to withdraw from the study, please email Dana Al-Hajri (dana.alhajri2015@my.ntu.ac.uk) expressing that you would like to do so.

By completing this survey, you agree and consent to the conditions above.

Thank you for participating in the project.

Dana Al-Hajri

[SUPERVISOR-SPECIFIC QUESTIONS]

Can you indicate to what extent you agree with the following statements regarding your team at work:

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
(1) My team performs well.					
(2) My team achieves its goals.					
(3) My team meets the expectations of others					
(4) My team does what it should do.					
(5) My team has satisfied (internal or external) clients					

APPENDIX 8: The Email Invitation Template that Sent to all Team Supervisors prior the Commencement of the 2nd Phase (Focus Group)

Dear [redacted]

I would like first to thank you and your team for your support in being part of my research, as this would help facilitate the completion of my research. The data obtained in the initial phase illustrates and interesting outcome and commencement of the second phase of the research is about to be implemented. The selection of your team is because of the unique patterns and outcomes which were identified from the team during the first research phase.

At this phase however, I would like to sit with your team and ask them more insightful questions relating to the survey results which have been obtained.

Please let me know about the availability of your team for a meeting next Wed (03/07/2019) any-time after1:00. The meeting would last for approximately between 45 and 60 minutes. Feel free to contact me to provide you more details about the study and for any other questions you might have.

Looking forward to your reply.

Regards,

Dana Al-Hajri

APPENDIX 9: Focus Group Questions/Theoretical framework

The questions will focus on understanding the facilitators/barriers as well as factors that affect the informal learning process. Hence, focus groups will concentrate on the following two main questions:

- *What types of facilitators of informal workplace learning are encountered by the teams?*
- *What type of barriers to informal workplace learning are encountered by the teams?*

Based on the review made from several literature articles that discuss the factors which impact on the procedures for informal learning in the work environment, it is noted that these factors would be compared with the answers provided by the respondents in the identification of key themes and they are identified to include the following (Harp, 2002; Bancheva *et al*., 2010; Jeon & Kim, 2012; Kwakman 2003; Eraut, 2004; Wallo, 2008; Loman, 2005):

The guiding questions will be as follows:

(A) **Individual level/Reflection:**

The questions here explore the factors that relate to employee jobs and tasks.

- Could you tell me about your job and what roles you perform on a normal working day?
- Could you tell me frequency with which the function in your role differs from time to time?
- What would you describe as the most critical roles and tasks which you perform within your organisation?
- What would you describe as the most significant learning experience which you have had?
- Within your role, have there been any instances of learning activities which you believe may have impacted you in a positive manner in terms of impacts on your career, job function or performance of other employees?
  a) If yes could you give further insights?
  b) If no, what would you recommend as informal learning activities which you believe can help facilitate positive performance and effectiveness of employees within their functions?

- What do you believe have been the key challenges that you have faced in performance of activities or tasks in your organisation?
- Has your organisation been able to facilitate any interventions to mitigate the challenges? If yes explain how, if not, what actions would you recommend?

(B) **Factors in Dyadic level/Coaching:**

The questions here aim to explore the role of leaders and supervisors in an organisations and how support/supervisory style of managing employees impacts on commitment to learning.

- Could you give an insight relating to your current experience in terms of working your current supervisor?
- Do you feel that your supervisor is interested in provision of support to your learning and development?
    - *If yes, give examples*
    - *If no, what do you think is the reason behind it?*

- When is the last time you sought assistance from a manager relating to work-related tasks which were peculiar or unresolved?
- Do you believe your supervisory team provides support for challenges and new learning experiences for employees within the organisation? If yes,
    a) How is this support provided?
    b) Can you give an insight into scenarios for which support is provided?

    If no,
    a) Do you believe that support goes a long way in facilitating learning in the organisation?
    b) Should support only come through formal trainings or other means?

(C) Group and organisational level/knowledge sharing:

The questions here were formulated to explore the factors related to knowledge sharing within the team and how the environmental factors impact on sharing of knowledge in the organisation.

- Have there been any tools and support at organisational level which have helped in facilitating the development of your knowledge?

  If yes:

  - What are these tools?
  - Do you believe the tools have impacted on your learning development in any way? What other ways do you believe the organisation could help in ensuring development and improvement of technical skills used in the workplace?

If no:

- What do you believe have been the principal factors that influence learning and development in your organisation?
- What actions should be taken in terms of organisational factors which may help facilitate learning development?
- What workplace conditions do you find best support or don't support working and learning?

- Has your department developed any new strategies or made any new approaches with respect to workplace learning?

  If yes:

  - Can you provide an insight into these approaches and how they have influenced your learning within the workplace?

  If no:

- Do you have any thoughts about structuring/improving workplace learning?

Relationship with co-workers/role of others

- Could you describe the roles of your colleagues in your team?
- What is your perception of working within teams?
- Could you give an insight into the scenarios within which you work with your colleagues?
- How often is there interaction with your colleagues?
- Based on your experience, could you highlight some characteristics associated with the most effective team/group?

(D) Other possible factors which could be related to any of those three levels

- Are there any factors that may influence (positively or negatively) your team learning and development?
    - *Can you give examples of such factors?*
    - *What is their impact and at what level?*

Conclusion of the focus group:

Do you have anything which I might have missed that you would like to contribute?