



Moderating the Risk of Intragroup Conflict on Task Performance through Digital Information Fluency in the Enterprise Social Media Context

A thesis submitted for the degree of Doctor of Philosophy

By

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Declaration

The author, Ismaeel Al Ameen, confirms that this academic research is his own work which has been conducted from (2016-2019) to reward a PhD degree from Brunel University London. The author declares that some parts of this thesis were already presented, submitted, and under preparation for publication. It's important to mention that the author has changed his surname which was (Ebrahim) to (Al Ameen). This clarification is to prevent any confusion in the future. Following is a list of the publications:

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Dedication

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Abstract

This research aims to investigate the interplay of digital information fluency (DIF) on the association between intragroup conflict and task performance (TP) in the context of enterprise social media (ESM). Extant research highlights the impact of intragroup conflict dimensions on group outcomes, yet there remains a lack of knowledge on the intervention of DIF among group members when intragroup conflict occurs within an extensive digital information environment such as an ESM environment. Lately, variance in DIF in the virtual environment has emerged as a variable that might affect the association between intragroup conflict and TP. The impact of globalisation and advanced technologies on the workplace may be one reason for the changing forms of work and add fresh ground for conflict, yet such a transformation might reveal a gap in the DIF levels of co-workers, which could lead to social categorisation and eventually intragroup conflict. The author adopts the conflict-distraction theory (DCT) supported by organisational modification behaviour theory (OMBT) as a theoretical basis for developing a theoretical model. An online questionnaire was developed for this study to extract empirical data. The sample size was ($n = 389$) employees within an international communication organisation's headquarter located in the Kingdom of Bahrain. This research is explanatory in nature and based on a theory testing lens. Structure equation modelling (SEM) was implemented to analyse the data. Within the ESM environment, this research found that DIF positively moderates the association between certain intragroup conflict dimensions (task conflicts (TC), relationship conflicts (RC) and process conflicts (PC)) with TP. Interestingly, DIF negatively moderates the association between status conflicts (SC) and TP. In short, this research detects that high DIF mitigates misunderstanding during communication and sharing information in digital format through ESM, which ultimately alleviates intragroup conflict at digital environments. This study contributes to the literature by highlighting the moderator role of DIF in intragroup conflict situations within an ESM environment.

Keywords: *Intragroup conflict, Digital information fluency, Enterprise social media, Task Performance.*

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List of Abbreviation

AGFI	Adjusted Goodness-of-Fit Index
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted Average
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index Course
CMC	computer-mediated-communication
CMIN/ DF	Chi Square
CR	Composite reliability Degree
DCT	Distraction-Conflict Theory
DIF	Digital information fluency
EFA	Exploratory Factor Analysis
ESM	Enterprise social media
FTF	Face-to-face
GCC	Gulf Cooperation Council
GFI	Goodness-of-Fit Index
ICT	Information communication technology
IFI	Incremental Fit Index
KMO	Kaiser-Mayer-Olkin
OBMT	Organisational Behavior Modification Theory
PC	Process conflict
RC	Relationship conflict
RMSEA	Root Mean Square Error of Approximation Quality
SC	Status conflict
SEM	Structure Equation Modelling
SPSS	Statistical Package for Social Sciences
TC	Task conflict
TLI	Tucker-Lewis Index
TP	Task performance
α	Cronbach's alpha
AI	Artificial Intelligence

CHAPTER 1: INTRODUCTION

1.1 Introduction

Due to the development in information communication technology (ICT) worldwide, the alteration in work dynamics beyond the old-fashioned arrangements has become vital (Colbert *et al.*, 2016). As a result, the blending of individuals has emerged from different regions, with distinct ethics and educational levels, working within the same entities and sharing their skills and knowledge. Whilst, in the past, merging workforces from different locations and backgrounds was considered somewhat inadvisable, recently, major companies have become less likely to require the co-location of co-workers, as they now require individuals who can utilise digital platforms (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). These platforms form a new virtual and contemporary environment for co-workers (Jimenez *et al.*, 2017).

The 21st century is the era of ICT expansion (Van Laar *et al.*, 2017). ICT has become integrated into many aspects of our lives, such as our professional life in the workplace. According to Yu *et al.* (2017), ICT has attracted considerable attention and been widely adopted in the workplace due to its positive effects in terms of the economy, quality of life and enhanced communication. Moreover, ICT may lead to better work performance from employees, a higher degree of accuracy at work, faster working, a sharper competitive edge against competitors, etc. Therefore, there are ongoing attempts to develop new methods for adopting ICT in the workplace (Wehner *et al.*, 2016; Leonardi *et al.*, 2013). One of the newest implications regarding the use of ICT as a digital commonplace in organisations is enterprise social media (ESM) (Leonardi *et al.*, 2013), which offers an exclusive platform to organisation members that provides the same features as social media (e.g. Yammer, Workplace by Facebook, Skype for Business, etc.). Moreover, ESM provides powerful communication features that facilitate the exchange of digital information using collaborative tools, such as chat, video calls, file sharing, etc. ESM describes as internal communication system that offers the features of social media for a better interaction with other users from the same group. According to McAfee (2006), ESM is an integration between Web 2.0 and Enterprise 2.0 such as wiki and blogs, to establish internal social communication among the group members. (See section 2.4.3 for more details about ESM).

Even though ESM provides opportunities for organisations, there are also challenges (Leonardi *et al.*, 2013; Jimenez *et al.*, 2017). Some co-workers may suffer from information overload (Bauer and Erdogan, 2012), generated by the ESM environment, which impairs communication. This may provoke intragroup conflict and subsequently impact negatively on the co-workers' collaboration, if insufficiently handled (Colbert *et al.*, 2016). Advocates have adopted various stances in the area of conflict within an organisational setting (also known as organisational conflict). Several researchers have argued that conflict in a work setting is inevitable (McCarter *et al.*, 2018; Rahim, 2015; Chen and Tseng, 2016; Pondy, 1967). Since human beings have different backgrounds, cultures and ethnic origins, they observe and contemplate phenomena in different ways. Lately, variance in DIF in an extensive digital information environment has emerged as a variable that might affect the association between intragroup conflict and TP (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). Scholars find DIF (as a communication aspect) significant in workplaces where there are exchange and share of information in digital format (Wang *et al.*, 2013 Çoklar *et al.*, 2017; Adıgüzel, 2011). Sharing and exchanging digital information needs harmony of the group members' digital skills to mitigate miscommunication and conflict (Jimenez *et al.*, 2017). However, this is not the case in practice whereas not all employees are digital fluent. The rapid development in ICT may be one of the reasons for the changing forms of work (van Laar *et al.*, 2017; Atteya, 2013) and add fresh ground for conflict, yet such a transformation might reveal a gap in the DIF levels of co-workers, which could lead to social categorisation (Klitmøller *et al.*, 2015) and eventually intragroup conflict (Rahim, 2015).

Insufficient communication plays a vital role in the context of intragroup conflict (McCarter *et al.*, 2018; Nordin *et al.*, 2014; Robbins, 2005). Poor communication takes different forms, and subsequently affects information exchange (Kazimoto, 2013; Nordin *et al.*, 2014). Since the workplace is moving toward becoming a digitised information base (van Laar *et al.*, 2017), successful communication will depend heavily on individuals with digital competencies, such as DIF. As reported by (Klitmøller *et al.*, 2015), huge variances in language fluency can damage group dynamics and magnify any intragroup conflict (Barner-Rasmussen and Aarnio, 2011; Welch and Welch, 2008), especially in environments where information overload exists. Hence, ESMs users who are unable to cope with the required digital fluency may feel that their opinions are being neglected (Reinares-Lara *et al.*, 2016; Zander *et al.*, 2012). Recently, an enquiry regarding the effects of DIF on workplace conflict was raised, which laid emphasis on the need to study the effects of DIF on intragroup conflict and how DIF may leverage collaboration and decrease the risk of intragroup conflict arising amongst the group members (Colbert *et al.*, 2016).

As argued by Jeffrey *et al.* (2011, pp.385), DIF is defined as “the ability to find, evaluate and ethically use digital information efficiently and effectively”. Therefore, it appears that, even in sophisticated environments, employees may possess varying levels of DIF, which could be one of the conflict triggers amongst the group members (Jimenez *et al.*, 2017; Colbert *et al.*, 2016).

Internal communication is very important in organisations (Spaho, 2013), and is considered one of the elements that help to manage or reduce any potential conflict and social fragmentation (Stahl *et al.*, 2010) through sharing thoughts, ideas and views. Nordin *et al.* (2014) emphasize the necessity of fostering collaborative communication through the adoption of exchange information among the workers and management to maintain the flow of information and new ideas. Although shifting to digital platforms offers many benefits, this alone will not prove beneficial if DIF is excluded from the context (Colbert *et al.*, 2016).

Due to the importance of studying the effects of intragroup conflict in organisational settings, which harms the performance of both individuals and organisations (McCarter *et al.*, 2018; Liu *et al.*, 2017; de Wit *et al.*, 2012), researchers have investigated a wide range of variables related to the association between intragroup conflict and performance e.g. management strategies (Wachsmuth *et al.*, 2016), cultural diversity (Korovyakovskaya and Chong, 2016), temporal leadership (Santos *et al.*, 2016) and knowledge sharing (Jiang *et al.*, 2016). On the other hand, several researchers have studied the variables within the domain of intragroup conflict and ICT, such as conflict within global virtual teams (Kankanhalli *et al.*, 2006) and the level of virtuality (Jong *et al.*, 2008). However, this research finds a lack of studies on DIF and its impact on intragroup conflict (Jimenez *et al.*, 2017; Colbert *et al.*, 2016), especially in the context of an extensive digital information environment (e.g. ESM) (Korovyakovskaya and Chong, 2016; Yuan and Jing, 2014).

The literature shows that the relationship between intragroup conflict and performance has been studied extensively, but that there exists a dearth of research on the effect of DIF on conflict in the workplace (Jimenez *et al.*, 2017; Colbert *et al.*, 2016), especially with regard to developing countries (Kilani *et al.*, 2015). In the next section, further elaboration will be presented regarding the research problem.

1.2 Background to the Research Problem

Recently, mismatching between individuals' digital skills and the communication and sharing information strategy of the organisation might lead to conflict among the group members and a lack of collaboration (Colbert *et al.*, 2016). In other words, the senders and receivers might exchange unreliable information, which will generate confusion for all parties in the organisation. This problem has evolved recently and affects the collaboration and performance amongst co-workers in organisations where an extensive digital information environment is implemented such as ESM environment. The communication aspect plays an important role in an intragroup conflict context (McCarter *et al.*, 2018; Nordin *et al.*, 2014; Robbins, 2005).

Although this research was conducted in the context of ESM, the outcomes of the research are applicable to any organisation that depends heavily on technology or extensive digital information environment and generates a high volume of digital information, which might face the same problem and eventually affect individuals' TP due to the gap between individuals' DIF levels (Jimenez *et al.*, 2017).

Thus, this research attempts to tackle this issue. This study scrutinises this gap (Jimenez *et al.*, 2017; Colbert *et al.*, 2016) by investigating the effects of DIF on the association between intragroup conflict and TP. Intragroup conflict becomes one of the vital topics in organisational studies (Liu *et al.*, 2017; Chen and Tseng, 2016). As Rahim (2015) asserts, conflict is an inevitable and natural behaviour among individuals. Although some scholars reveal that conflict might have a positive impact on groups' outcomes (McCarter *et al.*, 2018; de Wit *et al.*, 2012), others find that most of the intragroup conflict dimensions negatively reflected on group outcomes, particularly performance (Rahim, 2015; Bendersky and Hays, 2012). This research focuses on the communication aspect in general and DIF in particular as a variable that affects the dynamics of intragroup conflict in regards to task performance. The researcher selects to study the association between the dimensions of intragroup conflict and task performance as a core causal relations in this research for more than a reason: due to inconsistent findings in the literature (Jehn, 1997; Jehn and Mannix 2001; Bendersky and Hays, 2012; de Wit *et al.*, 2012, Bendersky and Hays, 2017), the logical and theoretical linkage between the concepts from communicational grounds (McCarter *et al.*, 2018; Robbins, 2005), which make the selection of studying DIF as a moderator sensible since it's an aspect of communication (Briggs and Makice, 2012; Van Laar *et al.*, 2017).

It is important to mention that one of the main reasons for conflict is miscommunication (Kazimoto, 2013; Nordin *et al.*, 2014). As mentioned earlier, there have been tremendous developments in the field of ICT that inspire most organisations to implement a variety of social networks in their workplaces (Leonardi *et al.*, 2013). Accordingly, this development requires progress in digital skills at the organisational and individual levels to cope with communication development. Nevertheless, recent studies reveal that, due to the variances in digital skills levels among co-workers, conflict might arise (Collbert *et al.*, 2016).

DIF has become the new literacy in the workplace, schools, industries, etc. (Van Laar *et al.*, 2017; Çoklar *et al.*, 2017; Jimenez *et al.*, 2017; Colbert *et al.*, 2016). Thus, is it important to study the impact of DIF on intragroup conflict in order to be able to redesign jobs and overcome the variances in DIF levels between the co-workers in an extensive digital information environment (Colbert *et al.*, 2016).

This research provides knowledge that can be reflected on practical implication. For instance, the research's model equips top management with empirical findings about the significance of leveraging the notion of DIF, especially within organisations that depends heavily on ICT to reform their recruitment policy. Also, the outcomes of the research draw an initial map to redesign jobs based on the level of DIF along with their positions, which boost the effectiveness of communication and mitigate intragroup conflict. On the other hand, social networks and artificial intelligence developers (AI) might find the perception of the research's model helpful to develop a system able to recognise users' DIF through public social media, to control mess media and misinformation that affect internal affairs.

1.3 Significance of the Research

The findings of this study extend the current literature and provide preliminary empirical evidence of the moderator effects of DIF in the context of intragroup conflict within extensive digital information environment such as ESM. In this study, the author aims to boost the understanding of the interplay between DIF and the association between intragroup conflict and TP in the ESM environment by conducting an empirical investigation. This study covers two aspects: 1- Organisational conflict with a concentration on the intragroup level of conflict, and its relationship with task performance. 2- The effects of DIF on intragroup conflict in the

context of extensive digital information environment, the case of ESM. The boundary of the research is to investigate the extent of the effect on intragroup conflict though embracing DIF in a workplace where ESM has been implemented.

The current research is important for different reasons. To the best of the author's knowledge, there is scarcity of research that has investigated intragroup conflict combined with the impact of DIF (Jimenez *et al.*, 2017; Collbert *et al.*, 2016). Carrying out this research provides significant and empirical findings which will contribute to the knowledge in this regard. Moreover, with the continuous development of communication aspects in organisations, such as ESM, this may generate information overload in the workplace (Bauer and Erdogan, 2012), which has an impact on organisational conflict, which is worthy of further investigation (McCarter *et al.*, 2018; Yuan and Jing, 2014). Thus, this research helps policy makers, administrators and managers to understand the effects of DIF in the context of conflict management from a practical perspective.

On the other hand, from a theoretical perspective, this research is studying a new moderator variable and testing it on measured relations (Baron and Kenny, 1986). Adding a new moderator to existing theory is considered a significant theoretical contribution in academia (Colquitt and Zapata-phelan, 2007; Dawson, 2014; Gaskin, 2016). The proposed theoretical model will help us to understand and visualise the impact of the moderator variable. Furthermore, the outcomes and recommendations of this research facilitate new avenues for researchers who are interested in studying intragroup conflict combined with DIF to expand the literature with additional knowledge.

1.4 Research Aim and Objectives

1.4.1 Research Aim

Previous studies have focused on the association between intragroup conflict and performance. However, few studies have investigated that impact of DIF in the context of intragroup conflict. Recently, ESM has been implemented in organisations as one of the internal communication environments which need more attention with regard to organisational conflict. Enterprise 2.0 technology has become a widespread communication platform in many organisations, which might provide a suitable context for studying DIF and its effect on intragroup conflict.

The literature reveals that there is a need to investigate the impact of DIF in the conflict context (Jimenez *et al.*, 2017; Collbert *et al.*, 2016). This research will study DIF as a moderator variable to test its effect on intragroup conflict in extensive digital information environment, the case of ESM environment. Accordingly, a theoretical model is developed to help us to understand the impact of DIF on intragroup conflict and TP. As a result, this research formulates its aim as follows:

- *To investigate the moderator impacts of digital information fluency on the association between intragroup conflict and task performance in the context of an enterprise social media environment.*

1.4.2 Research Objectives

The proposed aim is achieved by covering the following objectives:

- To critically review the literature on organisational conflict with more focus on the association between intragroup conflict and TP that arises due to variances in digital information fluency levels in the ESM environment.
- To develop a theoretical model along with assessing relevant theories to make it possible to assess scientifically the relationships between the constructs identified in the literature.
- To design a research methodology that fits the purpose of the research in order to conduct an empirical investigation to test the developed hypotheses and analyse the data.
- To interpret the empirical results and discuss the supported and unsupported relationships between the constructs proposed in the theoretical model.
- To conclude the key implications of the research findings and suggest revenues for future research.

1.5 Research Question

In this study, the author aims to expand our understanding of the interplay between DIF and the association between intragroup conflict and TP in an ESM environment by conducting an

empirical investigation. To formulate the research question, the author noted two main points:

- **First**, several previous studies emphasize the linkage between conflict and utilising computer-mediated-communication (CMC) (e.g. Friedman *et al.*, 2006; Ulijn and Lincke, 2004; Usunier, 2003). Recently, Colbert *et al.*, (2016) supported these previous studies by emphasizing on DIF as a new factor in conflict situation within the context of CMC, which open new doors for future research. It seems that there is dearth of researches on the impact of DIF in a context where CMC is employed. In this research, the author seeks to fill this gap in knowledge by undertaking empirical research that concentrates on the nature and dynamics of intragroup conflict in the context of CMC. This research finds that the ESM environment is a suitable context for this investigation (extensive digital information environment). However, the outcomes of this study are applicable to any organisation involves in extensive digital information environment, regardless of their usage to ESM as a tool. This research focuses on intragroup conflict and DIF as phenomena in an environment where information overload occurs, so these phenomena might exist in any organisation where digital information is exchanged between co-workers with major variances in their DIF levels.
- **Secondly**, there is a call to focus on workplaces that apply digital networks among their staff and study intragroup conflict (Jimenez *et al.*, 2017; Collbert *et al.*, 2016; Korovyakovskaya and Chong, 2016; Kivunja, 2014). Since ESM is one of the most recent digital networks concepts in the workplace and considers as an extensive digital information environment (Leonardi *et al.*, 2013), this appears to provide a suitable context for this research.

Therefore, in this study, the author aims to answer the following research question:

RQ: What are the moderator effects of DIF on the relationship between intragroup conflict and TP in the context of the ESM environment?

1.6 Research Approach

This research follows the positivist philosophy and adopts a quantitative approach by extracting primary data from a large international company via an online questionnaire and implementing

the convenience sampling technique. This research utilises, for the analytical aspect, the Statistical Package for the Social Sciences (SPSS) version 23.0 and Analysis of Moment Structures (AMOS). The research executes several tests to examine the reliability and validity along with the model fit. In addition, the associations between the variables of the model are examined through structural equation model analysis (SEM).

It is possible to collect data from a large organisation to answer the research question and test the research's theoretical model (Robinson, 2018; Yin, 1994; Saunders *et al.*, 2015). From the literature, it can be seen that testing a research model using hypotheses is possible using the quantitative research method (Robinson, 2018). Using the paradigm of the quantitative approach, the author proposes using an online questionnaire due to the need to collect data from a significant number of employees from different managerial levels in different locations. This approach has been followed by similar studies that share common variables to the current research, such as intragroup conflict (Santos *et al.*, 2015; Bendersky and Hays, 2012) and DIF (Çoklar *et al.*, 2017), which were all conducted under the quantitative approach and methods.

On the other hand, the nature of the research question and the main aim of the research led this research to select the positivist philosophy, deductive approach and quantitative method, to generate outcomes that help to answer the research question and fit the domain of the research (Saunders *et al.*, 2015) (for more details, see Chapter 4).

1.7 Thesis Outline

The author constructs the thesis based on the phases designed by Phillips and Pugh (2015), which comprises the following four phases, respectively: 1) background theory, 2) focal theory, 3) data theory, and 4) novel contribution. Background theory is associated with the problematic of the research, which is usually defined and supported through reviewing the literature (Chapter 2). The concept of focal theory forms the basis for developing the theoretical framework (Chapter 3). Thereafter, the theory that rules the issues of the data research approach, methodology, research instrument and protocol is data theory (Chapter 4). Also, the procedures for the data collection and the analysis process involve data theory (Chapter 5). Eventually, the novel contribution reflects the outcomes and results of the research (Chapters 6 and 7). There follows an illustration of the seven chapters of this dissertation:

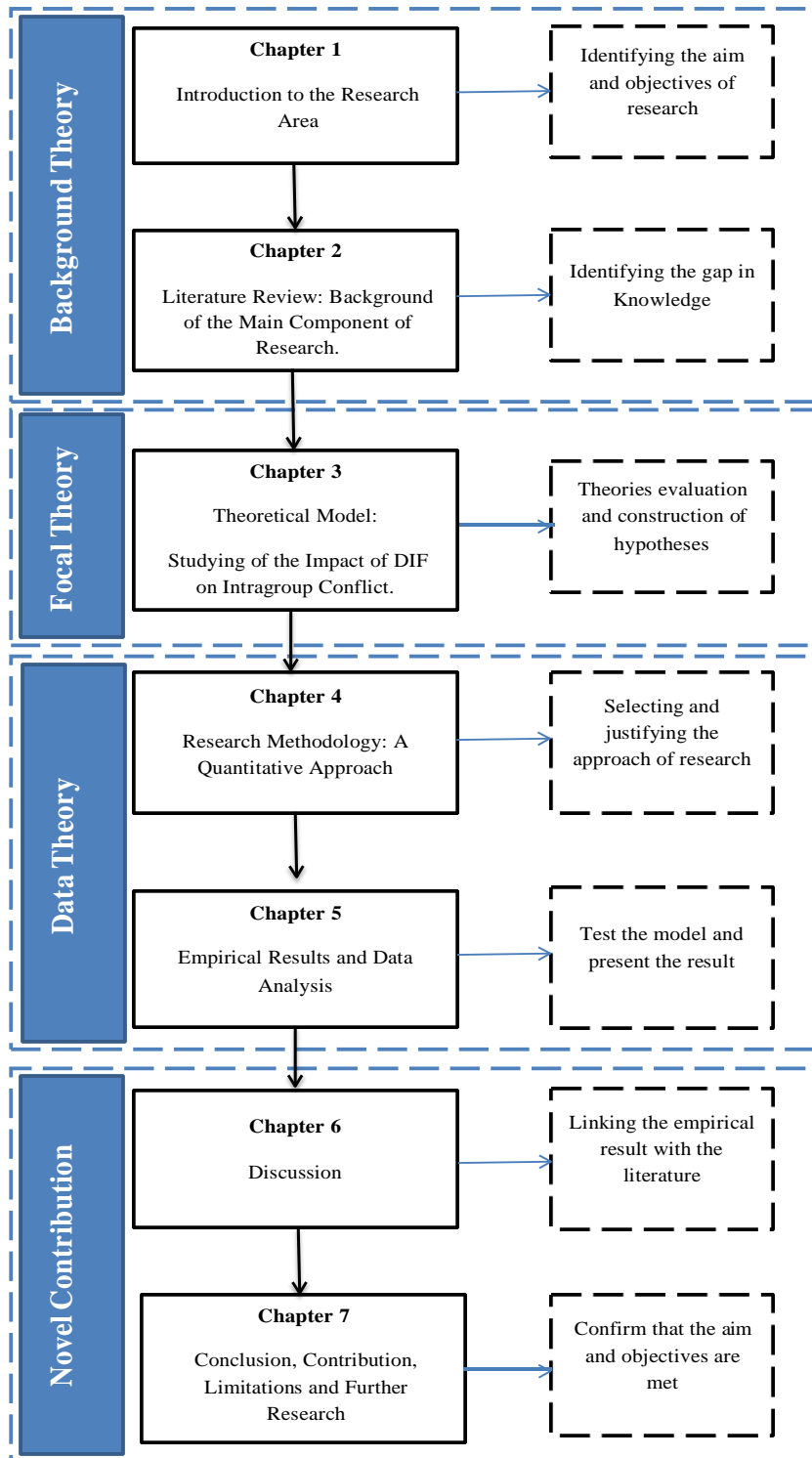


Figure 1.1: Thesis Outline

Chapter 1: Introduction

This chapter briefly provides the background and introduction of this research. It presents the problematic of the research that needs more attention from the author. In addition, it shows the significance of conducting this research with regard to a variety of aspects. Thereafter, the author identifies the main research question, together with the aim and objectives of the research. The chapter presents the scope of the research, research approach, and finally the thesis outline.

Chapter 2: Literature Review – Background Theory

Chapter 2 provides a review of the literature. The author presents and demonstrates an overview of the concept of organisational conflict. Also, it covers the taxonomies of conflict's definitions, historical views of conflict and the different levels of organisational conflict. In addition, the key dimensions of intragroup conflict are covered along with task performance. Furthermore, the chapter presents the causes of organisational conflict with a focus on the role of communication in extensive digital information environment. To achieve this, the author selects the context of enterprise social media as an extensive digital information environment, and demonstrates its features and rules, in addition to reviewing the concept of digital information fluency and its relation with the organisational conflict. Finally, the gap in the research is identified and presented.

Chapter 3: Theoretical Model – Focal Theory

This chapter illustrates the development of the theoretical framework of the research. It starts by evaluating the relevant theories and elaborating on the focal theories, then explains the associations between the main constructs of the model, which were identified during the literature stage. This chapter also includes the development of the hypotheses based on the proposed theoretical framework.

Chapter 4: Research Methodology – Data Theory

This chapter presents the method that the author is following in this research. To do so, an overview of the methodologies is presented to show how the most suitable method and research techniques were selected for this research. The chapter justifies the reasons for selecting the positivist philosophy from the rest of the research philosophies, then moves on to the research method, strategy and instrument of the research, justifying the selection of each of them. The

chapter also includes a case study protocol and a brief outline of the analysis techniques that were implemented as an introduction to the next chapter.

Chapter 5: Findings – Data Theory

After discussing the methodology, the analysis of the data and findings takes place in chapter 5. This chapter demonstrates the data analysis, which comprised performing a variety of tests and the generated findings that reflect the CFA and path analysis. It is important to mention that SEM is selected as a multivariate technique in this study to confirm the fitness of the theoretical model and examine the hypotheses. Prior to conducting CFA and path analysis, several tests were performed to confirm that the data are clean for the SEM. To do so, the author embedded in the research the reliability and validity of the research instrument, exploratory factor analysis, correlation, etc. On the other hand, the roles of the moderator variable in the theoretical framework are clarified, and the interactions are presented as well. Moreover, the direct and indirect impacts of all of the paths are identified and measured.

Chapter 6: Discussion – Novel Contribution

Chapter 6 discusses the results of the data analysis. Also, it formulates a linkage between the findings and the identified gap, and discusses the findings in line with the main research question which was developed for this research. On the other hand, the author discusses the findings that support or do not support the hypotheses of the research. To do so, the discussion is based on the linkage between the literature and the findings as justifications. The outcomes of this research show that most intragroup dimensions have significantly negative effects on task performance within an extensive digital information environment such as ESM environment. As a result of the intervention of the moderator, the increasing DIF level within an organisation could play a significant role in mitigating the negative effect of conflict on task performance. Interestingly, one of the dimensions of intragroup conflict (status conflict) shows a positive interaction with task performance and a negative interaction with DIF. Therefore, the author explains this result by linking it with a justification drawn from the literature.

Chapter 7: Conclusions – Novel Contribution

In this chapter, several contributions of this research are identified. Moreover, it illustrates the possible practical implications at the managerial level for policy makers or practitioners. There are some limitations to this research which are presented as suggestions for future research. At the end, the author confirms that the aim and objectives of the research have been fulfilled.

Based on the review of the literature conducted by the author, this research might be the first study to investigate the impact of DIF on intragroup conflict and task performance. Thus, the author believes that this research makes a novel contribution to the body of knowledge.

1.8 Conclusion

This chapter provides an overview of this research. It presents the synopsis and background to the research, identifies the problematic of the research, clarifies the significance of the research, presents the aim and allocates the objectives of the research, formulates the research question, identifies the scope of the research, illustrates the research approach followed and presents the structure of the thesis. The author finds that there is problematic in the body of knowledge which needs to be tackled. Despite the sound basis of conflict management literature, there is ambiguity when it comes to the effects of DIF in the context of conflict management. The huge development of ICT and its implication in the workplace make DIF a vital topic. Therefore, the author selects the ESM environment to study the impact of DIF on intragroup conflict within a case study.

This research aims to evaluate the moderator effects of DIF on the relationship between intragroup conflict and task performance in the ESM environment. Thus, the author develops a theoretical model to study those phenomena and test and confirm the model. In the remaining chapters, the author presents the development of the model and hypothesis that form the focal theory of the research. To conclude, this research and its results provide new aspects and will enrich the literature on organisational conflict. Also, it will bridge the literature on conflict management and digital fluency in the arena of ICT development. Several theoretical and practical contributions will be presented at the end of the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter, the author presents an overview of the concept of organisational conflict, and links it with the literature on DIF. This is an attempt to review different sources from the literature in parallel, in order to build a bridge between those concepts. It is vital to embrace the main phenomenon through developing a comprehensive understanding and identifying a clear gap in knowledge. This review provides a wider picture of the domains of organisational conflict. As a matter of fact, it is important to cover the typologies and the different conflict levels that are referenced in the literature. To bridge between different sources in the literature, it is necessary to search for a link that provides a rationale for the linkage.

The literature on conflict management discusses in depth the importance of communication (McCarter *et al.*, 2018; Rahim, 2015; Usunier, 2003; Amason *et al.*, 1995). However, the method of communication in and the development of extensive digital information environments need updating in the conflict literature. Leonardi *et al.* (2013) assert that organisations tend to employ ESM for many reasons, one of which is to enhance the efficiency of the communication among employees. Since ESM is considered an extensive digital information environment and CMC, the communication might be affected by the DIF level of the users. Therefore, the nature of the conflict that might occur in an ESM environment due to variances in the DIF levels within an organisation need to be studied further (Jimenez *et al.*, 2017; Collbert *et al.*, 2016).

As mentioned earlier, in Chapter 1, this research focuses on the moderator effects of DIF on the relationship between intragroup conflict and TP in the ESM environment. Hence, the author attempts to scrutinise the literature and narrow the spotlight onto the gap of knowledge becomes clear to present. The literature shows in different studies association between intragroup conflict and group outcomes in general and performance in particular (Jehn and Mannix 2001; Bendersky and Hays, 2012; de Wit *et al.*, 2012,). Furthermore, scholars assert on the importance of effective communication and its impact on managing conflict (McCarter *et al.*, 2018; Rahim, 2015; Robbins, 2005). Yet, there is scarcity in the literature on DIF as an aspect of communication at digital environment, and the alterations that might occur on the association between intragroup conflict and performance (Jimenez *et al.*, 2017; Collbert *et al.*,

2016). Therefore, literature of the research attempts to merge between the association of intragroup conflict and performance, and DIF as separate aspect of communication skills, to make the flow and development of the research model sensible. The structure of Chapter 2 is illustrated below in Figure 2.1:

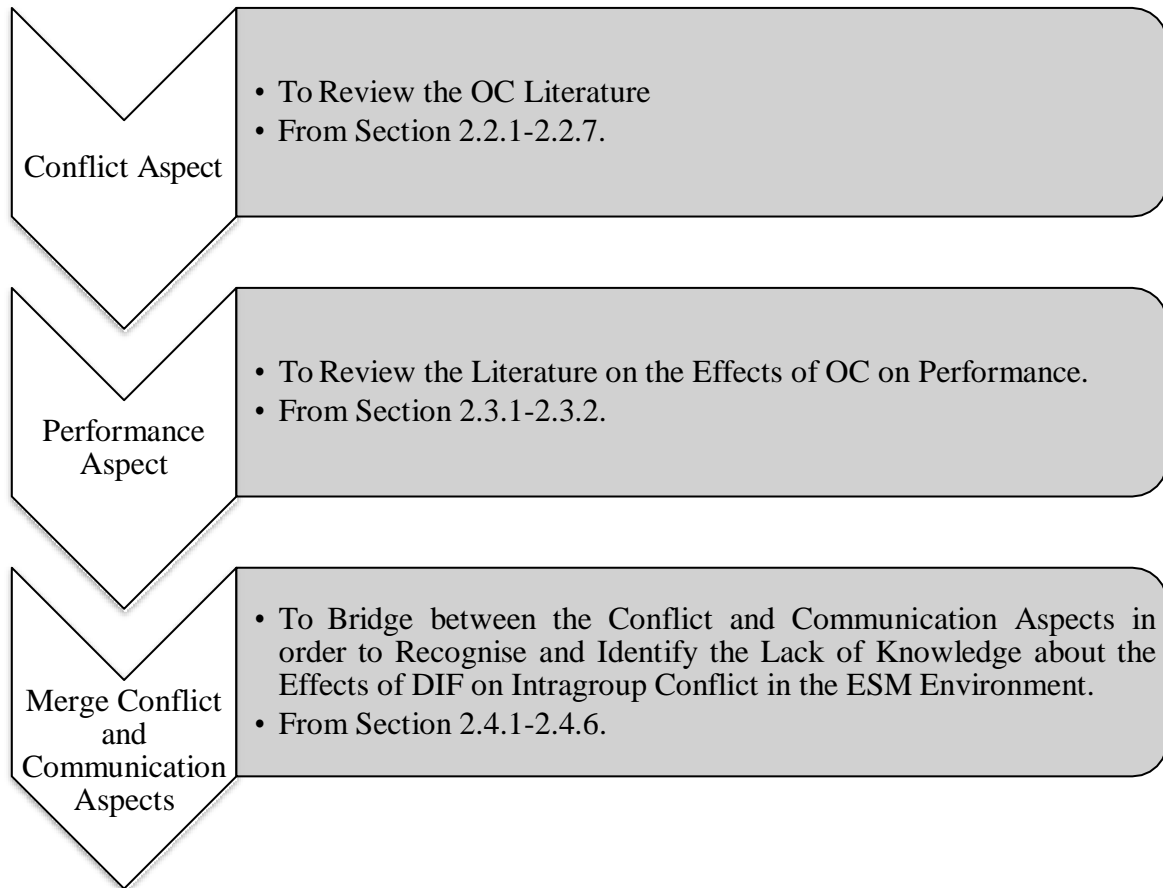


Figure 2.1: Structure of the Literature Review

At the beginning of this chapter, an overview of organisational conflict from the conceptual, historical and organisational perspectives is presented in sections 2.2-2.7. Secondly, the author presents a review of the intragroup conflict level and its dimensions in Section 2.8. Third, the relationship between intragroup conflict and performance is clarified in Section 2.9. Next, the causes of organisational conflict are reviewed, and greater concentration on the communication aspect is demonstrated in Section 2.10. Thereafter, a review of the literature of the ESM environment is presented in Section 2.11, which helps to bridge the gap between the importance of DIF and organisational conflict in Section 2.12. Finally, the author defines the gap in the literature.

2.2 Conflict Perspectives

2.2.1 Overview of Organisational Conflict

Through the review of the conflict management literature, the author finds that conflict management evolved within the domain of organisational behaviour (OB) (Schermerhorn *et al.*, 2003). This confirms that organisational conflict is inherently part of OB. Hence, models of OB have significant rules for understanding organisational conflict phenomena. Several researchers assert that conflict is inescapable behaviour within organisations (Rahim, 2015; Carpenter and Kennedy, 2001), although it can be managed by minimising its negative effects and enhancing its positive effects (DeChurch and Marks, 2001).

Conflict has described by a scholar as follow: “*disturbs the equilibrium of the organisation*” (Pondy, 1967, pp. 308). Therefore, it is important to be aware of the consequences of conflict and how it can be contained. Although conflict could be useful in certain circumstances, it hinders the performance and productivity of organisations (Rainey, 2014). Some conflict situations occur in organisations between individuals or groups when they confront threats from each other (Schulze *et al.*, 2014). Wall and Callister (1995) assert that conflict situations might arise due to opposing views, interests, cultures, goals, etc. Hence, scholars aim to understand how to manage conflict efficiently through studying the causes, types, sources and nature of conflict, stimulated by theoretical curiosity (Rahim, 2015; Burns, 1978).

It is a recognised fact that organisations require good management to operate as the main supporting body to develop societies (Hajiasghari and Gheisari, 2015). The managers of any organisation have a responsibility to achieve good performance and ensure that the organisation meets its goals. However, such performance is affected by the conflict that exists in organisations (de Wit *et al.*, 2012). Research shows that managers inevitably face conflict within organisations at multiple levels (Tal *et al.*, 2013; Ebhote and Monday, 2015), and that the reasons for such conflict differs from one situation to another (George and Jones, 2012).

Rahim (2015) clarifies that the term ‘conflict’ is used to describe an action or accident that happen between two or more people due to mismatching of goals and interests. In real life, once someone hears about opposition, arguments or disagreements among a crowd of people, a

negative image come into his/her mind. Hence, conflict is usually associated with unpleasant feelings within individuals, and hinders collaboration and performance (de Wit *et al.*, 2012).

Rahim (1983) states that conflict is inevitable and can happen to anyone. This behaviour can appear in different locations and forms, such as in teams, in groups, on the road and within universities. Organisations are not immune from horizontal or vertical conflicts, due to human nature and differences of opinion (Rahim, 1986b; Thomas, 1976). Subsequently, conflict has attracted organisational theoreticians' attention and led them to investigate the nature, sources, types and effects of conflict (Hocker and Wilmst, 1985; Kilmann and Thomas, 1975; Rahim, 1983b; Thomas, 1976; Fink, 1998).

Scholars have studied the effects of conflict within organisations and found that these have a destructive impact on individuals (Rahim, 2002). Ullah and Naeem (2012) argue that conflict could lead to a loss of interest in one's job, a lack of commitment to the organisation, increased absenteeism, job dissatisfaction and a propensity to violence. Therefore, scholars have made major changes to conflict theory (Rahim, 2002). They found that the best strategy for overcoming this issue is to mitigate the negative effects and increase the positive outcomes of conflict (Leffel and Darling, 2012; Rahim, 2002). Thus, scholars have developed a variety of models in conflict management to control rather than terminate conflict (Blake and Mouton, 1964; Rahim, 1983a; Thomas and Killman 1975).

The literature shows that communication between different parties plays a significant role in managing conflict (Rahim, 2015). According to Fleetwood (1987), sufficient communication helps to contain conflict while insufficient communication leads to destructive conflict. Moreover, Hocker and Wilmot (1985) emphasise the major role of communication in the conflict context and describe it as "the central element" in managing conflict. Thus, this research focuses on the communication perspective, as reflected in the literature review stage. The development of ICT opens up new aspects which lead to a need for further research in the conflict context (Collbert *et al.*, 2016).

In the next section, the author provides an overview of the causes of organisational conflict which helps to identify the basis of this concept.

2.2.2 Overview of the Causes of Organisational Conflict

Organisational conflict can arise for different reasons. The literature asserts that conflict is natural behaviour among individuals (McCarter *et al.*, 2018; Rahim, 2015). However, conflict within organisations depends on a set of triggers. For instance, Ebhote and Monday (2015) emphasise that organisational conflict relies on a tendency to protect interests, values and goals against the opposites in the organisation. Schellenberg (1996) explained, through different theoretical approaches, that conflict occurs due to differences in behaviour between people. Currently, organisations are a mixture of different people from different backgrounds, expertise, age, nationality, aims and character. Conflict in the workplace is normal to occur due to human mismatches in different aspects. Interpersonal conflict may produce some destructive outcomes, such as (anxiety), discouragement (frustration) and decreased productivity. Hence, it is vital to understand the reasons that lead to conflict from cognitive and affective perspectives (Dana, 1999), in order to be able to manage it affectively.

Scholars have identified a variety of reasons when they examined different situations to identify the most affective triggers behind organisational conflict. The reasons are as follow:

- First, based on the interpersonal distinctions among people, one of the reasons for conflict is that every person has his/her own characteristics such as interests, preferences, goals and values (Wall and Callister, 1995).
- Second, the literature shows that managing conflict is strongly impacted by social culture (Hofstede, 2001). For instance, a study conducted to observe American administrators working in Japan showed that different cultures can cause interpersonal conflict due to the different culture norms, especially when there is a lack of experience of working in an environment that collects multicultural employees together (Taylor, 1991).
- Third, according to Tidstrom (2009), who carried out qualitative research on two different industrial sectors in Finland, found that one of the main causes of organisational conflict is the negative contending due to limited resources and seeking

of independency. Therefore, limited resources, aligned with a lack of coordination between people, often lead to decreased cooperation and enhanced hostility.

- Fourth, some important studies in the conflict literature have identified poor or a lack of communication as one of the most significant triggers of organisational conflict. It has been argued that inefficient communication leads to being unknowledgeable about others, which accordingly leads to conflict (Pondy, 1976; Robbins, 2005).

Based on the above overview, and since this research focuses on DIF from the communication aspect in the context of conflict, this chapter allocates sections in elaborating on the role of communication in general and communication in the digital environment in particular in the domain of intragroup conflict. In the next section, the author will outline the definitions and taxonomies of conflict, which will help to build a solid understanding of this concept.

2.2.3 Definitions and Taxonomies of Conflict

Literature indicates several definitions on conflict (e.g. Ebhote and Monday, 2015; Rahim, 2010; Pondy, 1967). Even though the definitions reflect different views and angles of observations, still there are common characteristics between the definitions. According to Rahim (2005), the common characteristics shared by most of the definitions of conflict are: opposing interests between the parties, recognised disagreements, different beliefs in each party and ends by an action which frustrate the other's goals. For instance, Rahim (2010) defines conflict as an "*Interactive process manifested in incompatibility, disagreement, or dissonance within or between social entities*" (pp.18). On the other hand, Ebhote and Monday (2015) defines conflict within organisations as "*a state of friction caused by the actual or perceived opposition of needs, values and interests between people working together*" (pp. 51). The similarities between the previous definitions are obvious and share the same characteristics that have identified previously (Rahim, 2005).

It is important to realise that conflict has more than one format and direction, which indicates that (conflict) as a concept has more than one interpretation. Many scholars view conflict as a violent interaction among individuals, whereas others regard it as a dispute due to diverse views and interests (Barki and Hartwick, 2001). The phenomenon (conflict) is explained as a "main

tension” that normally happens wherever there is a need for mutuality and restraint with regard to attitude (Isaksen and Ekvall, 2010).

For a long time, scholars have been attempting to enhance their understanding of the concept of conflict from a multidimensional aspect, such as its operation, status, attitude and impression (Pondy, 1969). It is important to notice that conflict is not always about a mismatch between the ends of individuals or groups. In other words, conflict may arise even if the aims are matched but, at the same time, there is disagreement about which tools to use to accomplish a specific aim. According to Jehn (1997), it is not fixed that conflict arises if there is a dispute over the means to accomplish certain tasks. Even though ends and means are used frequently in classifying many terms and concepts, this does not mean that other antecedents of the conflict process should be neglected. Some scholars find that other elements affect conflict, such as culture, emotions and personalities (van den Berg *et al.*, 2014; Jiang *et al.*, 2013). As a result, scholars have been studying those elements in order to locate the presence of conflict as an outcome of personal and group interactions (Almost *et al.*, 2010).

Based on the above, scholars have been influenced by different schools and elements which have affected their understanding of the concept of conflict. Conflict might occur due to differences in views, interests, goals, etc. Workplaces consist of different types of personalities and multicultural employees. Therefore, our professional life is exposed to conflict on a daily basis. According to Obi (2012), workplace conflict is disputes or disagreements that employees use to add more weight and pressure each other when aiming to obtain their demands. In Table 2.1, the author attempts to gather several definitions of conflict in order to extract and present the common characteristics of this concept. This illustration shows how each scholar is affected by different elements, which are reflected ultimately in their definitions:

Authors, Years	Definitions of Conflict	Common Characteristics within the Definitions of the Term (Conflict)
(Pondy, 1967, pp.299-300)	<i>“A dynamic process between two or more individuals, incorporating five stages of conflict: latent conflict, perceived conflict, felt conflict, manifest conflict, and the conflict aftermath”.</i>	<p>1-<u>It’s between two or more individuals or groups:</u></p> <p>(Pondy, 1967; Tomas, 1976; Hocker and Wilmot 1985; Rubin et al., 1994; Jehn & Mannix, 2001; Jehn and Bendersky, 2003; Miller, 2006; Rahim, 2010; Ebhote and Monday, 2015). Note: There is conflict just between the person and himself. However, it’s studied in the psychology field.</p> <p>2-<u>It’s recognised disagreements, differences or incompatibility of:</u></p> <p>Goals, Desires, Ideas, Values etc. (Hocker and Wilmot, 1985; Putnam and Poole,1987; Putnam and Poole,1987; Rubin <i>et al.</i>, 1994; Jehn and Mannix, 2001; Jehn and Bendersky, 2003; Miller, 2006; Rahim, 2010).</p> <p>3-<u>Involves actions, interactions or interference:</u></p> <p>To be considered conflict, it should be an action by one or both parties taken in order to reach their goals. However, this action is disappointing to the other party. If the conflict lacks action, this means that it is in the latent stage (Hocker and Wilmot, 1985; Putnam and Poole, 1987; Miller, 2006; Rahim, 2010).</p>
(Thomas, 1976, pp.891)	<i>“Conflict is the process which begins when one party perceives that another has frustrated, or is about to frustrate, some concern of his”.</i>	
(Hocker and Wilmot, 1985, pp. 23)	<i>“An expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce rewards, and interference from the other party in achieving their goals”.</i>	
(Putnam and Poole, 1987, pp. 552)	<i>“The interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals”.</i>	
(Thomas, 1992, pp. 265)	<i>“Process which begins when one party perceives that another has frustrated, or is about to frustrate, some concern of his”.</i>	
(Rubin <i>et al.</i> , 1994, pp.5)	<i>“Conflict is perceived divergence of interest or a belief that the parties’ current aspirations cannot be achieved simultaneously”</i>	
(Jehn and Mannix, 2001, pp. 238)	<i>“Conflict is awareness on the part of the parties involved of discrepancies, incompatible wishes, or irreconcilable desires”.</i>	
(Jehn and Bendersky, 2003, pp.188-189)	<i>“Perceived incompatibilities or discrepant views among the parties involved”.</i>	
(Miller, 2006, pp.194)	<i>“The interaction of interdependent people who perceive opposition of goals, aims and values, and who see the other party as potentially interfering with the realization of these goals”.</i>	

<p>(Rahim, 2010, pp.18)</p>	<p><i>“Interactive process manifested in incompatibility, Disagreement or dissonance within or between social entities”.</i></p>	<p>4-It’s a Process:</p> <p>This means that conflict takes place by moving from one stage to another based on the previous relationships between the parties which reflect their previous influences on each other (Pondy, 1967; Thomas, 1992; Rahim, 2010)</p> <p>5-It’s an attempt to exert influence:</p> <p>This means that any disagreements between the parties should have the intent to influence the other party.</p> <p>6-It’s an apposing of interest:</p> <p>This happens among individuals or groups in a ‘Zero-Sum situation’(Rahim, 2005)</p>
<p>(Ebhote and Monday, 2015, pp.51)</p>	<p><i>“A state of friction caused by the actual or perceived opposition of needs, values and interests between people working together”.</i></p>	

Table 2.1: The Definitions of Conflict and Common Characteristics shared by the various Definitions

On the other hand, conflict has more than a taxonomy or typology. It differs from scholar to scholar. However, the author finds that there are similarities and repetitive criteria in most of the classifications. In Table 2.2, a brief explanation of each type is presented:

Taxonomies of Conflict	Taxonomies Criteria
<p>Guetzkow and Gyr classified conflict as '<i>substantive</i>' and '<i>affective</i>'. 'Conflict rooted in the substance of the task which the group is undertaking, and conflict derived from the emotional, affective aspects of the group's interpersonal relations'. (Guetzkow and Gyr, 1954, pp.369)</p>	<ul style="list-style-type: none"> • The literature shows that there is more than taxonomy in conflict management. All of these taxonomies are based on one of these criteria: - On the subject (task) itself - On the emotions - On the responsibilities - Related to the position of the individual who is part of the conflict within the organisation - On the path to accomplishing the task - Concern for the self or concern for others
<p>Coser categorised conflict as: 1) <i>Realistic conflict</i>, where individuals interact to concentrate on incompatible tasks to resolve problems associated with achieving their goals. 2) In <i>Non-realistic conflict</i>, individuals focus on their concerns and interests by undermining others' interests and concerns. Realistic conflict tends to be goal-oriented while non-realistic conflict tends to be emotion-oriented. (Coser, 1956, pp. 156)</p>	
<p>1) <i>Constructive conflict</i>, individuals can reach a midway solution through negotiating in a comfortable climate. 2) <i>Destructive conflict</i>, which individuals tend to be rigid and as a result organisation climate become less flexible. (Deutsch, 1973, pp. 17)</p>	
<p>Tomas categorised conflict into two aspects: 1) "<i>The process aspect</i>, of any system is the temporal sequence of events which occur as the system operates – e.g. the mental and behavioural activities of the conflicting parties". 2) "<i>The structural aspect</i> of a system is the broader system 'parameters' – e.g. the more less stable (slow-changing) conditions which shape or control the system process". (Thomas, 1992, pp.266-267)</p>	
<p>1) "<i>C-Type or Cognitive conflict</i>" refers to disagreements based on differences in ideas or opinions. The author argues that this type of conflict improves team effectiveness. 2) "<i>A-Type or Affective conflict</i>" refers to disagreements over personal issues which lowers the effectiveness of the team. (Amason et al., 1995)</p>	
<p>1) <i>Task conflict</i>: Refers to disagreements over views regarding a task. 2) <i>Relationship conflict</i>: Refers to opposition due to interpersonal incompatibility. 3) <i>Process conflict</i>: Refers to disagreements about how to accomplish the task and divide up responsibilities. (Jehn, 1997; Jehn and Mannix 2001)</p>	
<p>Bendersky and Hays identified a new type of conflict, which they labelled <i>status conflicts</i>. This has been defined as "disputes over people's relative status positions in their group's social hierarchy". (Bendersky and Hays, 2012, pp. 323)</p>	

Table 2.2: Taxonomies of Conflict

2.2.4 Historical Views of Conflict

The literature shows that the concept of conflict has been evolving for a long time. In each period of time, the view of conflict has developed. Sometimes, it considers as an evil, while some people classified it as any normal human behaviour. Some scholars went beyond the typical views to claim that conflict is beneficial for all parties. In this section, the author presents in brief the development of the views of conflict throughout history:

Traditional View (1900-1940):

Between the 1900s and 1940s was the era of the traditional view of the concept of conflict. At that time, people realised that conflict is a negative force that produces negative outcomes (Rahim, 1983a). The defenders of this view attempted to avoid conflict through focusing on the reasons behind the conflict and adjust the situation to improve the outcomes (Robbins, 1998 cited in Kimencu, 2011, pp. 39). There was almost a common view that conflict must be averted as much as possible to avoid it impairing the unity of the group. Conflict was considered a behaviour that was associated with force and devastation (Kilmann and Thomas, 1975). Therefore, based on this view, conflict was regarded as odious and to be avoided at all costs.

The Human Relations View (1940-1970):

During this period of time, the human relations view evolved and became established. This school of thought considered conflict to be a natural feature of people's lives. They argued that, whenever individuals interact and communicate with one another, there is a possibility that conflict will arise (Robbins, 1998; Thomas, 1976). Although the advocators admit that conflict is natural, it is considered a distasteful and destructive aspect that should be minimised or resolved as soon as possible (Rahim, 1983; Robbins, 1998). This view was more rational than the traditional view. In general, the human relations view of conflict is more realistic and accepted by scholars. At the same time, the balanced view of the effects of conflict give this view an advantage compared to the previous view. For instance, it is documented that conflict might enhance organisational performance in certain situations (Robbins, 2005). Therefore, the relations view asserts that conflict could be both harmful and useful at the same time (Robbins, *et al.*, 2003).

The Interactionist View:

During the 1970s, different views about conflict emerged. Throughout this phase, social systems and open system theory became visible. Therefore, this affected the view of conflict, leading to modern thought about it (Cetin and Hacifazliogu, 2004). Rahim (1983) stated that conflict within organisations is unavoidable, and might be a constructive element with better outcomes. According to this view, the concept of conflict has shifted from it being something negative to it being important in enabling organisations to perform effectively. Trying to settle a conflict goes against the organisation's natural process of improving the productivity and creativity of the members of the group (Robbins, *et al.*, 2003). However, this does not mean that all types of conflict are good for organisations, even though it appears that some degree of conflict is necessary if the organisation is to perform effectively (Rahim, 2015).

2.2.5 Phases and Styles associated with Conflict Management

In this section, the author demonstrates the process of conflict and the styles of managing conflict, based on the literature. The literature shows that the process of conflict is dynamic in nature. Therefore, managing conflict is dynamic as well. In other words, each situation might differ in terms of the actors and their positions, so the technique for managing conflict can change, based on the situation and specific circumstances. The author divides this Section into two parts, as follows:

Phases of Conflict:

According to Pondy's (1967) process model, conflict is action that evolves through several phases. These consecutive phases reflect the dynamic nature of conflict, and the phases are as follow: latent conflict, perceived conflict, felt conflict, manifest conflict and the conflict aftermath. Although the latent conflict phase is considered the starting point of conflict, in reality, the conflict does not yet exist. A variety of hidden causes between the disputants might trigger the latent conflict and accelerate the shift to the next phase (Ebhote and Monday 2015). For instance, the role of coherence or interdependence between individuals could activate the conflict. According to Williams (2011), during the conflict process, there are two main aspects (cognitive and affective). In the perceived conflict phase, the parties become aware of the conflict among them, via the cognitive aspect. On the other hand, there is another aspect, the affective aspect, which starts during the felt conflict phase and, thereafter, the individuals who

are involved in this situation start recognising the reasons for the conflict they are experiencing (the manifest phase).

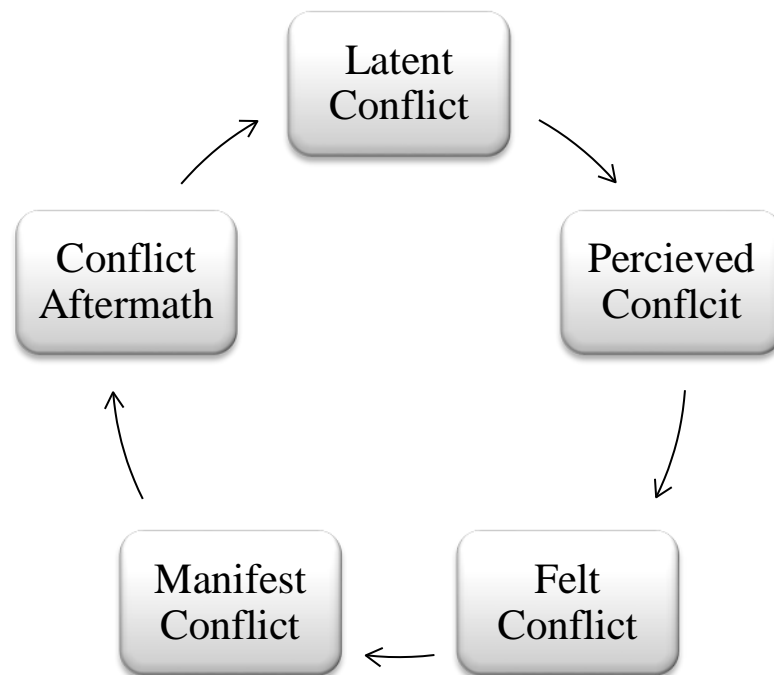


Figure 2.2: Conflict Process (Source: Pondy, 1967)

Subsequently, the manifest phase might develop and shift the situation to the conflict aftermath phase. Williams (2011) asserts that conflict aftermath is a result of the conflict episode that impacts on the style that individuals will implement during future conflicts. For example, if the disputants manage the situation by the right approach before it reaches the manifest conflict phase, the situation might be contained, with positive effects (*ibid*).

Styles for Managing Conflict:

Organisational studies have identified conflict management as an important aspect which cannot be neglected (Rahim, 2015). Brew and David (2004) assert that conflict is natural behaviour in any organisation as long as humans are essential elements. Hence, studies emphasize the impact of conflict on organisations, which decreases the negative view through stressing the benefits of conflict (Berryman-Fink, 1998; Thomas, 1976). The literature on conflict management shows that many studies have focused on how to improve the conflict management styles in order to improve the results of individuals or groups in the workplace (Burke, 1970; Kilmann and Thomas, 1975). Conflict management styles (CMSs) are defined

as “*specific behavioural patterns that individuals prefer to employ when dealing with conflict*” (Moberg, 2001, pp. 47).

To benefit from conflict within organisations, the negative impact should be mitigated and the positive impact must be developed (Rahim, 2001). Effective management and taking action at the right time can have a constructive impact on the organisation. To illustrate this, constructive conflict is assimilated in the situation when oppositionists deal with each other as legitimate entities. They are aware of the negativity of their disagreement, and so try to solve it together and attempt to reach accepted agreements regarding the outcomes (Kriesberg, 1998). In order to solve a problem, there should be cooperation and active communication between the parties. In addition, the management should know each parties’ demands so that they can reach to an outcome which is acceptable to all. Many benefits can be gained from constructive conflict, such as: increasing understanding and positive engagement, engaging in cooperation with other groups, developing communication, activating innovation, increasing the cohesion among groups, and enhancing productivity (Gmelch, 1995; Holton, 1998; Rahim, 2001). Moreover, it can help to develop the level of fairness, adequacy and contentment (Jameson, 1999) among those concerned.

Rahim (2002) developed the duel-concern model in 1992. Accordingly, five styles were developed to manage conflict: avoidance, obliging, integrating, dominating and compromising. We will now consider these styles in detail:

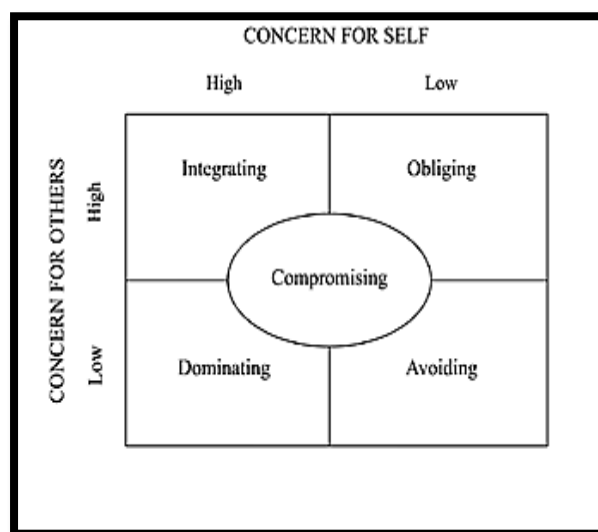


Figure 2.3: Duel-Concern Model (*Source: Rahim, 2002, pp. 217*)

1- Integrating Style:

It is clear from the Figure 2.3 that the integrating style considers others but, at the same time, also considers oneself. Notably, the integrating style has different labels the literature, one of which is the “Problem Solving Style” (Ebhote and Monday, 2015). In certain circumstances, clashes or conflict situations need more integration among the disputants in order to share ideas and thoughts regarding the problem (Rahim, 2002). The ability to solve problems differs from one individual to another. Thus, the integration style reflects alternatives that might provide an efficient solution. According to Cai and Fink (2002), the integration style may be preferable when the problem is complicated and related to strategies or long-term planning within the organisation. This style is also classified as a Win-Win resolution, which makes all parties pleased and satisfied with the outcomes. Several studies show that implementing the integration style in a conflict situation is preferred by organisations (Rahim, 2002; Cai and Fink, 2002). Hence, it is noticed that integration styles are usually correlated with positive outcomes, such as improved productivity, job satisfaction and effectiveness (Sharma and Samantara, 1994).

2- Obliging Style:

The obliging style is considered one of the styles that focuses more on the concerns of others than of oneself. In other words, this style has ‘an element of self-sacrifice’ (Ebhote and Monday, 2015, pp. 57). The individual who applies this style in conflict situations already intends to offer a solution. Even though this solution goes against his/her goals, he/she is willing to take a further step (Rahim, 2002). Therefore, one of the essential objectives for those who prefer this style is to preserve an amiable relationship with the opposition. Rahim (2002) identifies several situations which he considers are appropriate for this style; for instance: 1- when the individual lacks sufficient knowledge about the problem, 2- when he/she in a languid position so it is better to build bridges with the opposite parties, and 3- when individuals intend to apply this style to gain credit so that he may claim a payback from the other party at a later date.

3- Dominating Style:

As Figure 2.3 shows, the dominating style is when individuals have more concern for oneself than for others. A person who applies this style focuses on reaching his/her

ultimate goals and interest through utilising power and authority, while caring little about losing others ultimate goals. This style is appropriate when conflict exists between the parties and a decision taken by one of them will cause damage to the other party, so that dominating action becomes essential (Rahim, 2002). Even though the dominating style is suitable in some cases, it cannot be implemented in all conflict scenarios, especially, between two parties with equal power and authority. On the other hand, Friedman *et al.*, (2000) argue that tension and stress in the workplace are related to the employment of dominating and avoiding styles during conflict situations.

4- *Avoiding Style:*

The avoiding style is considered a technique that does not concentrate on the interests of the individual him/herself nor the other party's interests (Rahim, 2002). The main purpose in applying this style in any organisation is to avert any conflict that might be generated among individuals or groups. In addition, there is no intention or attempt to solve or mitigate the intense situation. Therefore, a person who applies this style is called an "Avoider". A sound assessment of the situation would reveal whether being an avoider is beneficial or not. When the result of confronting a problem would generate a more negative than positive impact, the avoiding style would be the right choice (Rahim, 2002).

5- *Compromising Style:*

The compromising style involves adopting a moderate position between concern for others and concern for oneself (Rahim, 2002). Individuals who prefer to adopt this style when solving conflicts make an effort to reach a settlement which satisfies all disputants. Cai and Fink (2002) mentioned that the compromising style tends to involve the equal sharing of resources, without ignoring any party, when a conflict situation arises and it is difficult to reach a collective agreement between all parties, especially when they need an interim settlement of a complicated conflict. Alternative solutions have been used that fail to satisfy one or more of the parties, in which case the compromising style provides an effective way to solve the conflict (Rahim, 2002).

Based on the abovementioned styles, there is much debate among academics regarding the most effective conflict management style. For example, Gross and Guerro (2000) found major differences in the outcomes of the integrating style and avoiding style, and that the integrating

style is more functional in conflict situations than the avoidance style. In the same line, Graham (1998) pointed out that integration will result in better outcomes than the compromise style during organisational conflict. The purpose of applying and designing effective strategies for conflict management is to reduce the dysfunction of conflict and increase the constructive function to optimise the learning and performance of an organisation. Therefore, managing conflict does not terminate the differences. However, it decreases dispute that forms as non-productive expansion (Rahim, 2002).

The reason behind indicating the Duel-Concern Model in the literature of this research is to present the differences of conflict management style. Also, to determine the type of intervention on the association of conflict and performance. This research adopts the notion of integration to mitigate the negative impact of intragroup conflict on task performance. In other words, when there are two different segments of people in a group with different capabilities (such high and low DIF), integrating style is the most affective technique for the organisation when we highly concern about both of them (Rahim, 2002; Cai and Fink, 2002). The variance in DIF among groups' members would generate intragroup conflict ultimately (Collbert *et al.*, 2016) and might affect task performance negatively (Rahim, 2015; Bendersky and Hays, 2012). The integration technique means moderating the variance of DIF until it reaches to a harmony level. The researcher believes that this approach might be affective to solve the research problem since both segments (high and low DIF employees) should be treated with high concerns from top management.

2.2.6 Levels of Organisational Conflict

Organisational conflict scholars have classified its levels based on the direction of interaction. In other words, there are differences between the nature of conflict when it happens between two different entities or within the same entity (Deutsch, 1990). To discuss the levels of conflict, it is vital to mention Rahim and Bonoma's (1979) work that extended the idea of classifying conflict interactions to levels between two or more people. This extension by Rahim and Bonoma (1979) is considered the base of the levels of conflict in organisations (Rahim, 1986). On the other hand, the literature shows that other scholars have classified the levels of conflict based on the organisational behaviour perspective, which talks about exploring conflict as a holistic term which occurs at the multilevel, without mentioning the reasons and origins of particular conflict situations (Rahim, 2015).

According to Deutsch (1990), the levels of conflict differ from one level to the other: personal (internal conflict within a person based on the paradoxical aims and tasks that he/she plans to accomplish), interpersonal (conflict between two persons due to e.g. mismatched goals, manners and interests), and intergroup (conflict between more than one group). In addition, the fourth level is intragroup, which happens when there is incompatibility between two or more individuals from the same group (de Wit *et al.*, 2012).

In the following sub-sections, the author reviews the literature and presents in detail the features and definitions of each level:

Intrapersonal Conflict Level

Operationally, this level of conflict happens deep down in the human brain, which reflects conflict in thoughts, opinions, decisions, feelings and values. In fact, this level of conflict takes place inwardly within the person him/herself due to disappointment or incompatible goals (Wood *et al.*, 2010; Schermerhorn *et al.*, 2008). Accordingly, confronting emotions such as disappointment acts as a barrier to the accomplishment of the individual's aims (Luthans, 2008). Luthans (2008) points out that the negative outcome of disappointment or frustration impacts on the spirit of individuals and their satisfaction at work. On the other side, frustration can also have positive outcomes in particular circumstances. For example, it might push an individual to work hard and develop skills to enhance his/her performance. Eventually, it depends on the character of the person (Schermerhorn *et al.*, 2003). According to Schermerhorn *et al.* (2003), there are three types of intrapersonal conflict: 1) approach-approach conflict, which happens when an individual becomes confused by having two equally positive options, 2) avoidance-avoidance conflict, when the person faces two equal negative options, and 3) approach-avoidance conflict, which occurs when two options have both positive and negative effects.

Interpersonal Conflict Level

This level of conflict takes different shapes. It might occur among two or more individuals, or it could arise between an individual and a representative of a group. For instance, interpersonal conflict can happen between colleagues, managers and subordinates, family members and the members of a team. Luthans (2008) refers to interpersonal conflict as one of the regular issues that can arise within any organisation. It is considered a dynamic process that arises when the

parties are involved in undesirable experiences which cause emotional reactions which affect each one's goals (Barki and Hartwick, 2004). With this in mind, negative impacts will have stronger consequences than positive ones, unless managed effectively (Adomi and Anie, 2006). Thus, interpersonal conflict is a critical issue for many people and organisations because it has a profound effect on individuals' feelings (Liu *et al.*, 2010; Newstrom, 2007; Davis and Newstrom, 2002). Also, it spreads rapidly among individuals (Wood *et al.*, 2010; Rollinson, 2005).

Intergroup Conflict Level

Intergroup conflict refers to multilateral disputes between two or more units, directorates or organisations, which are related directly or indirectly to the tasks, mission or resources (Rahim, 2010). It must be remembered that all types of groups are somewhat susceptible to conflict (Downs, 1968).

Moreover, some scholars have distinguished between the group and the members of the group. In other words, some researchers realise that what is positive for the group may not always be positive for the members of the group. For instance, Campbell (1965) noticed that "*group-level territoriality has always required that the soldier abandon for extensive periods the protecting of his own wife, children, and home*" (pp. 24). Furthermore, there is a gap regarding the interests of the individual members of a group and the collective interest of the group. It is obvious that the advantages connected to the consequences of intergroup conflict, such as political power, status and ego, are difficult to be excluded, in spite of their contribution to their group's effort (Rapoport and Bornstein, 1987).

Intragroup Conflict Level

Intragroup conflict is defined as an action that becomes apparent due to incompatibility or mismatches among the group members (McCarter *et al.*, 2018; De Dreu and Gelfand, 2008). Intragroup conflict is considered a form of organisational conflict and is currently attracting research attention (De Dreu and Weingart, 2003; Jehn and Bendersky, 2003). Several studies related to intragroup conflict present the negative and positive effects of conflict on the efficiency of the team (De Dreu and Weingart, 2003; Hambrick, 2007). Also, a number of studies scrutinise the antecedents of intergroup conflict, such as the characteristics of groups, for example the size and diversity of the groups (Pelled *et al.*, 1999), task attributes (Mooney, Holahan, and Amason, 2007), and group working operations (Moye and Langfred, 2004).

Recently, de Wit *et al.* (2012) conducted reliable research by utilising a meta-analysis to analyse 116 empirical studies related to intragroup conflict. The study shows that there might be a paradox regarding intragroup conflict's impacts. In other words, this study finds that, in some circumstances, intragroup conflict could have a positive impact (de Wit *et al.*, 2012). However, other studies show that this result is inconsistent, which re-confirms that intragroup conflict has a negative impact on performance (Dimas and Lourenco, 2015; De Dreu *et al.*, 2003; Thatcher *et al.*, 2003).

Also, scholars attempt to study intragroup conflict through testing variables as moderators or mediators to see their effects (de Wit *et al.*, 2012; Dimas and Lourenco, 2015). For instance, Dimas and Lourenco (2015) examined the conflict management styles as a moderator of intragroup conflict and effectiveness. Researchers are studying new variables as moderators to add to the knowledge and reveals new findings (Baron and Kenny, 1986).

Since this research concentrates on the level of intragroup conflict, the author will now review the literature on the dimensions of this level.

2.2.7 Dimensions of Intragroup Conflict

Scholars of conflict have attempted to classify intragroup conflict into several models and dimensions (McCarter *et al.*, 2018; Guetzkow and Gyr, 1954; Jehn, 1995; Amason and Sapienza, 1997; Jehn and Mannix 2001). For instance, the dimensions might be developed based on the nature of the origin of the disagreement, such as substantive and emotional (Schermerhorn *et al.*, 2003). Others have developed different dimensions based on the concern for the self or for others (Rahim, 2001). As stated by Schermerhorn *et al.*, (2003), substantive conflict refers to major contentions between individuals or groups regarding the methods, aims and outputs of specific work tasks. On the other hand, emotional conflict is about the interpersonal obstacles that appear due to negative feelings, such as anger, suspicion, and panic (*ibid*). However, there exists considerable conceptual overlap between these different forms of conflict (Dirks and Parks, 2003).

The literature on conflict management shows repeatedly that most scholars base their studies on diversity-conflict model (McCarter *et al.*, 2018) which divided to four dimensions: task conflict, relationship conflict, process conflict and status conflict. From a historical point of

view, Jehn (1992, 1994) identified task and relationship conflict and developed scales to measure them. Later, process conflict was identified (Jehn *et al.*, 1999). More recently, Bendersky and Hays (2012) introduced a new dimension of intragroup conflict, which is status conflict.

In the following sections, the author analyses these dimensions as stated in the literature:

Task Conflict Dimension

Researchers find that intragroup conflict includes several dimensions that can generate this situation. One of the most widely debated dimensions is task conflict (Jehn, 1992; Jehn, 1994). Task conflict is disagreements about the content of a task and work goals, such as the distribution of resources, procedures and interpretation of the facts (Jehn, 1995). It includes differences in viewpoints, ideas and opinions related to the task itself.

The literature shows that there are two contrary conclusions regarding task conflict. The first opinion asserts that task conflict can be beneficial with regard to group outcomes (Jehn, 1995). However, the second opinion demonstrates that task conflict can harm group outcomes (Raver and Gelfand, 2005). Recently, there has emerged a distinction between proximal and distal group outcomes (de Wit *et al.*, 2012). Hence, the findings related to task conflict and group outcomes differ based on the previously stated distinction. For instance, the proximal outcomes, (e.g. satisfaction) may be affected negatively due to a negative evaluation by other group members, which can be clarified through self-verification theory (Swann *et al.*, 2004). On the other hand, the distal outcomes, (e.g. group performance) may be affected negatively by task conflict due to the cognitive load and so ultimately affect the organisation's effectiveness and decision making (De Dreu, 2008). In addition, task conflict can generate job dissatisfaction and a lack of team work (Kabanoff, 1991).

From a positive perspective, several studies show that task conflict might positively affect the outcomes of groups, such as innovation (De Dreu, 2006) and critical evaluation (Nemeth, 1995), which ultimately affect the distal outcomes, such as group performance (Amason, 1996), not to mention the fact that task conflict reflects the members' voice regarding their opinions about the task on which they are working (Simons and Peterson, 2000).

Since there are two different conclusions reached by several studies, scholars have attempted

to confirm the conditions that lead task conflict to benefit or harm the group (Goncalo *et al.*, 2010; Mannes, 2009), but there remains no clear, certain conclusion about the impact of task conflict on group outcomes, such as task performance (de Wit *et al.*, 2012). As asserted by de Wit *et al.* (2012), task conflict's impact on performance could change based on many conditions, such as: the correlation between task conflict and relationship conflict, the level of conflict at the managerial level and the nature of the performance. Nevertheless, there is a tendency for task conflict to have a negative rather than a positive impact on group outcomes.

Relationship Conflict Dimension

This dimension of intragroup conflict exists when there is interpersonal incompatibility among the group members, including personality clashes, tension, animosity and annoyance (Jehn, 1995; Simons and Peterson, 2000). In general, relationship conflict produces negative individual emotions, such as anxiety, mistrust, resentment (Jehn, 1995), frustration, tension and a fear of being rejected by the other team members (Murnighan and Conlon, 1991).

The literature shows that some scholars have named this type of conflict in different ways (Affective Conflict) (Amason and Sapienza, 1997), but this concept is always related to thoughts and feelings about relationships with others during conflict situations. This type of conflict is considered emotional conflict, so it affects individuals and organisations through draining the ability and power of people and deflecting them from their priorities (Schermerhorn *et al.*, 2003), not to mention the fact that this situation produces an ego threat (Baumeister, 1998), which might escalate the level of hostility between the parties to the conflict. Thus, relationship conflicts create obstacles to conflict management (De Dreu and Van Knippenberg, 2005).

As stated by De Dreu (2006), relationship conflict might impair the group performance due to diminishing the members' ability to engage in collaborative problem solving. On the other hand, the time spent solving problems outside the context of the tasks could be spent more wisely on task accomplishment (Evan, 1965). Some scholars have studied the conditions in which relationship conflict has less of a negative impact on the group outcomes. They found that the employment of the correct conflict management strategy reduces the negative impact of the distal and proximal group outcomes (Tekleab *et al.*, 2001; De Dreu and Van Vianen, 2001). In addition, when the group members are less emotional about the negative impact of their relationships, the level of conflict might be lower (Jehn *et al.*, 2008). Recently, Jung and

Lee (2015) challenged the literature and found that relationship conflict has a positive impact on creativity when the relational self is outstanding. However, this positive impact on the group outcomes might occur under very narrow conditions.

Process Conflict Dimension

Process conflict is considered one of the intragroup conflict dimensions that were revealed after task and relationship conflict, respectively (Jehn *et al.*, 1999). This dimension of conflict refers to disagreements about how a task should be accomplished, co-workers' responsibilities and delegation (Jehn, 1997; Jehn and Mannix, 2001; Jehn and Bendersky, 2003). For instance, when a group member disagrees about the responsibilities assigned to him/her, which might lead to confusion and disturb the system of work. Process conflict is associated with lower morale, decreased productivity and poor team performance (Jehn, 1999). As a matter of fact, most of the time, task and process problems are examined together under the same tag: "task conflict" (De Dreu and Weingart, 2003). However, scholars have found that task conflict and process conflict have different characteristics and so it is preferable to distinguish between them (Jehn *et al.*, 1999).

Although process conflict has been found to affect group function negatively for a longer period of time than any previous dimensions (Greer *et al.*, 2008), it could be less deleterious regarding group performance under certain conditions (Behfar *et al.*, 2011). According to Jehn and Mannix (2001), process conflict might boost the crucial ability to re-evaluate tasks and processes. Moreover, Jung and Lee (2015) find that process conflict might become beneficial regarding creativity if the independent self is invigorated. However, these features tend to emerge during the early stages of preparing for a certain task (Goncalo *et al.*, 2010). Nevertheless, a meta-analysis study reveals that process conflict is more likely to hinder the performance of the group members (de Wit *et al.*, 2012).

Status Conflict Dimension

To the best of the author's knowledge, status conflict is the latest dimension to be introduced related to intragroup conflict. Bendersky and Hays (2012) introduced status conflicts as a new dimension of intragroup conflict, defining status conflict as "*disputes over people's relative status positions in their group's social hierarchy*" (Bendersky and Hays ,2012) pp.323. Compared to the previous dimensions of intragroup conflict, status conflict is unconnected to the task problems, interpersonal issues or disagreements about responsibilities. Status conflict

is linked to the disagreements that arise due to the social hierarchy positions of the members of the group. Based on the previous definition, status conflict may harm the organisation due to its effect on information sharing, especially within the organisation (Bendersky and Hays, 2012). On the other hand, alliances and competitive behaviour might occur when status conflict exists within groups. Van Dijk (2007) and Bendersky and Hays (2012) assert that alliances and competitive behaviour are less common during task conflict, relationship conflict and process conflict. As a result, this affects the sharing of information and impairs task performance (Bendersky and Hays, 2012).

In contrast, new research finds that status conflict may be less detrimental regarding group performance if we consider the level of preliminary and subsequent status agreements (Bendersky and Hays, 2017). Thus, in some situations, status conflict might positively affect task performance based on different moderator variables. In Figure 2.4, the author presents an illustration of the previous studies that shows the impact on the group members and linkages between the dimensions of intragroup conflict. The following illustration shows also that the mentioned dimensions of intragroup conflict are connected with each other. However, most of the recent studies consider them as independent and separate constructs:

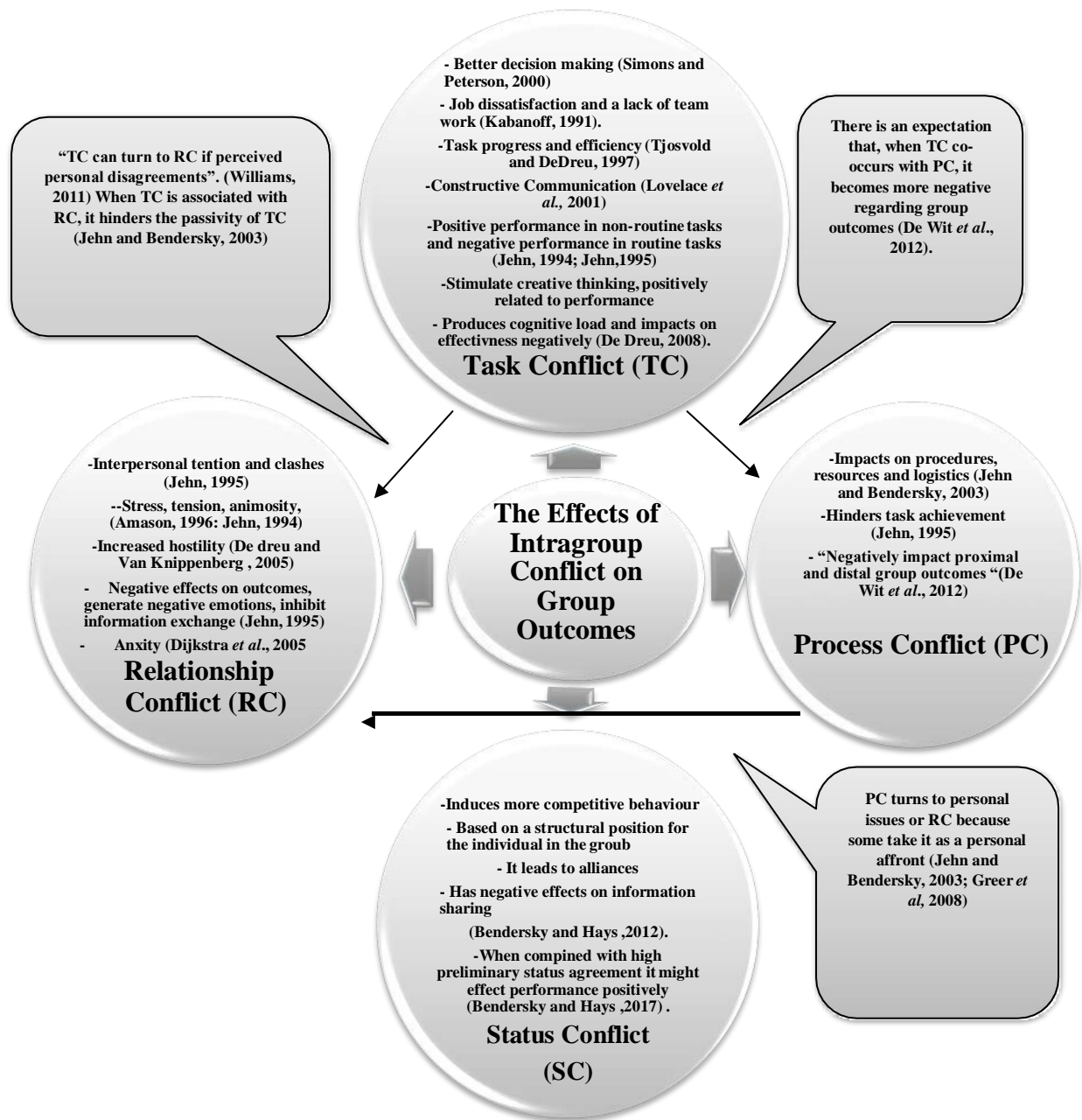


Figure 2.4: Illustration of the Dimensions of and Linkages between Intragroup Conflict with their Effects on the Group Members based on Previous Studies

2.3 Performance Aspects

2.3.1 Types of Organisational Conflict Effect on Performance

Although there is a tendency for conflict to have a negative impact on individuals and workplaces, it cannot be denied that it can also have a positive impact (McCarter *et al.*, 2018). The literature shows that there are two orientations of conflict: ‘Constructive/Functional’ and ‘Destructive/Dysfunctional’ (De Wit *et al.*, 2012). Notably, the variance between these orientations appears as outcomes without affecting the origin of the conflict in both scenarios. For instance, in a dispute between two or more parties, they might discuss various opinions and adopt the differences in order to formulate a better decision. This process leads to what is called constructive conflict. On the other hand, disputants who adopt destructive conflict prefer to attack each other and block differing views, which ultimately affects the organisation negatively (Whetten and Cameron, 2012).

Figure 2.5 shows that the horizontal axis refers to the intensity of the conflict. Low and high levels of intensity of conflict can both have destructive consequences. In contrast, the vertical axis refers to the impact on performance, and shows that a normal level of conflict leads to constructive consequences. The author reviews the related constructive and destructive conflict in more depth:

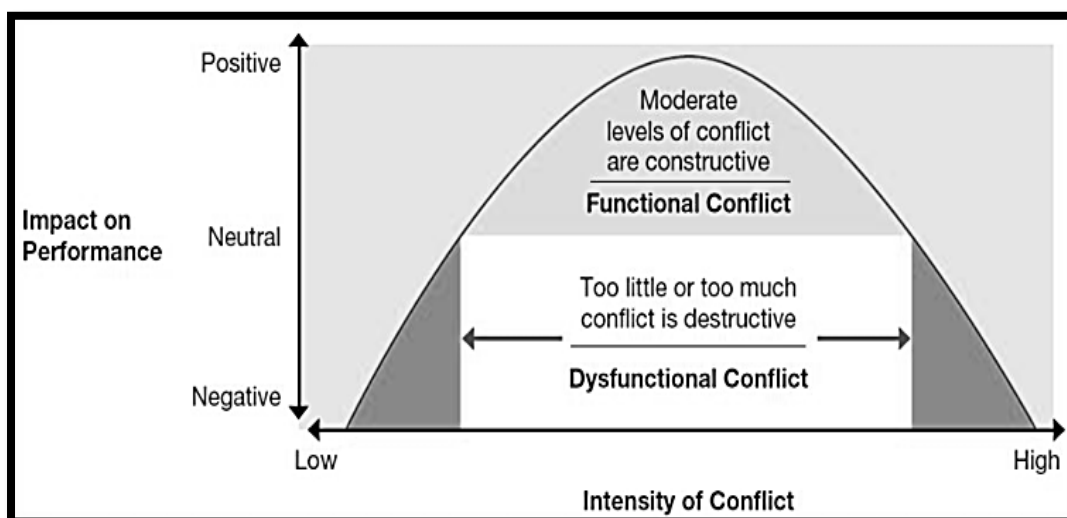


Figure 2.5: Functional and Dysfunctional Conflict on the Curve of the Relationship between Conflict and Performance (Source: Schermerhorn and Wright, 2008)

Constructive Effects

Constructive consequences of conflict might occur when there are slight variances between the parties. Constructive conflict can improve creativity and enhance performance among individuals, groups and organisations. Several studies show that conflict might have positive outcomes (Wood *et al.*, 2010; Robbins and Judge, 2008). Al-Rajhi (2008) argues that constructive outcomes can be generated by organisational conflict, which are illustrated as follows: it leads to thinking differently in order to achieve better work; it leads to improved and more developed ideas due to the differences in the views of the employees; it enhances the inclusive understanding between employees during conflict situations; it makes it possible to face issues and deal with them appropriately, rather than neglecting them; and it allows the organisation to examine the ability and skills of the employees in the area of conflict management.

According to Levine and Thompson (1996), conflict is a behaviour that can benefit the workplace if the employees recognise that they are completing each other. Developing employee relations in an organisation means encouraging employees to understand their differences (Rubin and Levinger, 1995). Furthermore, the literature shows that disputes between employees can constructively build new ways of thinking and the search for alternatives to solve the problem (Levine and Moreland, 2006), which provides better direction and understanding to boost the quality of the decisions and level of participation in the workplace (Tjosvold, 1997).

Destructive Effects

Tjosvold *et al.*, (2005) argue that there are two side effects of conflict, and that it can be constructive or destructive, depending on the nature of the conflict. Destructive conflict is another orientation of conflict, which has a negative impact on individuals and organisations. Destructive conflict harms people as well as organisations; for example, conflict can be destructive when hostility or opposition exists among individuals, which makes it difficult for them to cooperate at work. According to Robbins (1998), conflict affects organisations and individuals negatively if it lasts for a long time without proper management. In addition, conflict which has a destructive orientation limits the organisational performance and reduces productivity. A study on the causes of destructive conflict within organisations concluded that the intention to waste others' work leads to destructive conflict (Kinicki and Kreitner, 2008).

Moreover, destructive conflict can lead to wasted energy, decreased team cohesion and the spread of negative emotions in the workplace environment (Schermerhorn *et al.*, 2003). Individuals in a situation of dysfunctional conflict tend to attack, which decreases the team effectiveness (Hurt and Abebe, 2015) and also leads to high organisational costs (Kotlyar and Karakowsky, 2006). As a procedure for mitigating negative effects, Thomas (1996) suggested some helpful points for reducing dysfunctional conflict: declare the conflict of interest, concentrate on diagnosing the interpersonal and intergroup levels issues, stress the importance of the intervention process, and emphasise collaboration at the managerial levels.

2.3.2 Intragroup Conflict and Performance as a Group Outcome

Scholars have been researching widely the impact of intragroup conflict on group outcomes such as performance (McCarter *et al.*, 2018). The previous investigations have led to controversial findings. In other words, some studies indicate a beneficial but overall destructive impact while others find that intragroup conflict only impairs the performance of individuals or groups. By analysing the grounds of conflict, it seems that previous researchers established an understanding that low to moderate levels of task conflict can benefit the group outcomes due to boosting innovation among the group members (Amason, 1996; Jehn, 1995; Simons and Peterson, 2000). Yet, relationship conflict has been found to harm group outcomes in general and performance in particular due to generating hostility, interpersonal doubts and mistrust, that lead to lower group cohesiveness (Amason, 1996; Jehn, 1997; Jehn and Mannix, 2001).

According to Rahim and Bonoma (1979), the impact of task conflict on job performance can be charted as an inverted-U shape. Hence, they assumed that a reasonable level of conflict might be beneficial regarding job performance. For instance, recently-established work groups normally experience a period of conflict during the development of the structure, policies, regulations and purpose, and this process is likely to benefit the performance of the groups if it is contained in the task context (Tuckman, 1965). Nevertheless, conflict may accumulate to a certain stage and then become negative regarding performance. The correlation among the dimensions of intragroup conflict might form an inverted-U shape, especially between task and relationship conflict (Amason, 1996; Mooney *et al.*, 2007; Tidd *et al.*, 2004). Therefore, the benefits generated by task conflict vanish when it is highly associated with relationship conflict and ultimately impair performance (Rahim, 2002; Greer *et al.*, 2008).

In the modern intragroup conflict literature, there exist more studies about the association between intragroup conflict and performance. For example, De Dreu and Weingart's (2003) meta-analysis found that both cognitive and affective conflict had negative effects on group outcomes like performance. Also, De Wit *et al.* (2012), in their meta-analysis, revealed that intragroup conflict harmed group performance. According to Jehn *et al.* (2008), in their study, cognitive and affective conflict negatively influenced the group outcomes, and collectively decreased the level of trust and cohesion among the group members.

Researchers who have investigated intragroup conflict have identified a wide range of variables in general based on the relationship between conflict and performance, such as management strategies (Wachsmuth *et al.*, 2016), cultural diversity (Korovyakovskaya and Chong, 2016), temporal leadership (Santos *et al.*, 2016) and knowledge sharing (Jiang *et al.*, 2016). On the other hand, some researchers have studied the variables within the domain of intragroup conflict and ICT, such as conflict within global virtual teams (Kankanhalli *et al.*, 2006) and the level and teams' virtuality (Jong *et al.*, 2008). Most studies tend towards this conclusion: intragroup conflict is negatively connected with performance as a group outcome.

2.4 Merging the Conflict and Communication Aspects

2.4.1 The Role of Communication within Organisational Conflict

Poor communication is considered one of the most important sources of almost any conflict situation (McCarter *et al.*, 2018; Robbins, 2005). Sufficient communication before, during or even after a conflict situation can help to contain the dispute and minimise its negative impacts. To identify the role of communication within an organisational conflict situation, scrutinising the reasons for the communication failure is vital. To do so, the process of communication should become clear for the parties.

As reported by Hener (2010), various circumstances lead to communication failure within organisations. For clarification, if a piece of a painting is missing, it will be unable to deliver its intended message. Likewise, hiding a piece of information or sending ambiguous information destroys the whole communication process and leads to incorrect decisions.

Communication is defined as an interaction between two or more individuals to exchange information, emotions or behaviour in order to enhance the collective understanding from a social and psychological perspective (Varey *et al.*, 2002). Adejimola (2009, pp.3) defined the concept of communication according to the following six points: “(1) *It is seen as a process, (2) It takes place between two or more people, (3) There has to be a message, which is sent from one person to another, (4) That message is sent through a medium, (5) The received message will generate or provoke appropriate behavior or reaction, (6) Communication is the bedrock of any social system*”. Therefore, it can be seen that it is important to share information at the right time and stage to get the best out of this process, whether for individuals or organisations. Otherwise, it will be unbeneficial communication.

There exists an interdependent relationship between communication and conflict (Hener, 2010); communication has the ability to produce, increase or avoid conflict. Thus, communication plays a very important role in the conflict management strategies. Moreover, there exists a reciprocal relationship between communication and conflict (Alhassan *et al.*, 2014), which means that the quality and amount of information exchanged at the right time and at the right stage affects the conflict resolution.

In addition, Adejimola (2009) emphasises the importance of exchanging information in order to reduce conflict through minimising doubt and suspicion and maximising the level of confidence between the parties. As a matter of fact, poor communication increases conflict within the organisation’s members. Hence, having an ability to monitor potential conflict and share it with other parties helps to control and manage the tension, fear and suspicion. Also, sufficient communication gives the management the ability to recognise different ideas and thoughts, which gives them a realistic picture of their employees’ desires and thoughts in light of the organisation’s direction.

Although media and communication platforms can generate conflict if employed for the purpose of spreading anecdotes or generating problems (Adejimola, 2009), the media offers vital benefits, such as: sharing information, spreading awareness and enlightening the public. There are various communication platforms that serve particular purposes. In this research, the focus is on ESM as an internal communication environment within the organisational domain. ESM is considered a new method of communication between organisational members, which provides its users with a digital environment in which to communicate, similar to social media.

Therefore, the author selected this environment in order to study the interactions between group members in the domain of intragroup conflict.

A recent study asserted that the communication medium in the context of conflict management has different levels of effectiveness in terms of emotional delivery (Chen and Tseng, 2016). Chen and Tseng (2016) studied the difference between face-to-face communication (FTF) and computer-medium-computer (CMC) in the context of conflict management. They found that CMC operates better in a dysfunctional conflict context while FTF operates better in functional conflict contexts (*ibid*). As explained earlier, dysfunctional conflict is a result of tension in relationships between two or more parties due to personal issues which leads to distractive conflict. Since ESM is considered a type of CMC, it might have similar or different impacts on the group members in conflict management situations (Remco de Jong *et al.*, 2007; Correia, 2008). ESM has a wider variety of features than other communication media, which motivated the author to focus on it as a digital environment in the context of conflict management and test new phenomena which might lead to different results than were found in (Chen and Tseng, 2016)'s study.

Thus, in the next section, the author will review the literature on the various types of electronic communication media used in organisations, as well as the literature on ESM to understand the concept and background of this specific medium.

2.4.2 The Effects of Communication Media in an Organisational Conflict Context

Many different communication media and styles have been used within organisations to facilitate networking and communication. Some of these are classic while others have been developed only recently. However, there are some differences and commonalities between those media and styles. For the purpose of explanation, the author will label these media to Face-to-face (FTF) and computer-mediated communication (CMC).

FTF communication is one of the classic, traditional styles for sharing information and communication. Several scholars have classified FTF as the best communication method due to its effectiveness in terms of the interactive delivery of emotions to other parties (Poole *et al.*, 1992). In addition, the FTF communication style increases the level of socio-emotional conversation through physical interaction among the participants (Böhlke, 2013; Stryker and

Santoro, 2012). There is no doubt about the richness of FTF due to the embedded facial expressions and body interactions (Kock, 2007).

Scholars have analysed the features of FTF and summarised them as six merits (Clark and Brennan, 1991), which are: Sequentially, Audibility, Co-temporality, Co-presence, Simultaneity and Visibility. Sequentially refers to the ability to maintain the flow of conversation without breaking the sequence of the dialogue. Hearing the sounds and voices surrounding the communicators is a very important characteristic of FTF communication, which is referred to it as 'Audibility'. Co-temporality is one of the merits of FTF that refers to the ability to receive information directly from the speaker. Co-presence gives individuals the same sense of the environment while they are connecting with each other. Simultaneity means the ability to fulfill dual functions in the same time, which is talking and hearing simultaneously. Lastly, the ability to allow people to see each other during their dialogue it called Visibility.

Comparatively, CMC have been developed to facilitate communication by decreasing the cost and creating a flexible communication mood compared to FTF (Salaberry, 2013). For instance, these benefits become obvious during the complex decision-making setting, where CMC may be employed to improve the sharing of data from multi-sources (Monzani *et al.*, 2014). Simultaneously, it is possible to exchange private information (Thomas, 2013) with particular participants through closed dialogue windows, no matter how far apart the interlocutors may be.

Lee (2009) presents five communication media that are commonly used in the workplace and compares them with the features of FTF (Clark and Brennan, 1991) and e-mail (Friedman and Currall, 2003). Accordingly, the author developed Table 2.3 by adding ESM and its features. The author combines two further features from previous research on ESM: Persistence and Social Learning (Leonardi *et al.*, 2013). The purpose of Table 2.3 is to assess the workplace's communication media in order to check which one of them covers most of the existing features collectively and is worth to be an environment for studying intragroup conflict. On the other hand, the comparison between the media listed in Table 2.3 reveals how ESM differs from the other communication media in the organisational context. Also, the table functions as an introduction to the similarities and differences with the other media. It provides a clearer

understanding of the features of the ESM environment and its connection with the field of organisational conflict management.

It is clear that email has become essential in the workplace as a communication tool. The reason for the expansion of the usage of email among employees in organisations is due to its reviewability and revisability (Watson-Manheim and Belanger, 2007). Even though email is widely used within organisations, it lacks the interaction and social learning with others that is generated by many features of ESM (Leonardi *et al.*, 2013). For instance, emails and phone calls usually take place via private channels, which make interaction and knowledge sharing difficult (Cross *et al.*, 2003). In addition, audio and video conferencing might cover some of the features listed in Table 2.3. However, it might be difficult for audio and video files to be recorded, stored and available at any time to other parties, as it occurs in the ESM environment (Treem and Leonardi, 2012).

In contrast, ESM possesses almost all of the features of FTF along with the other listed media. However, ESM might fail to provide the Co-presence feature, like FTF meetings, which means that ESM cannot make the users feel as if they are in the same environment as the other party. On the other hand, in some ESM software, the visibility feature is provided through video calls, such as Lync, Skype for Business, Yammer, etc. (Wilson, 2015). Moreover, ESM is distinct from the other media in offering social learning and persistence for all users in the ESM environment (Leonardi *et al.*, 2013).

Medium Features	Co-presence	Visibility	Audibility	Co-temporality	Simultaneity	Sequentiality	Reviewability	Revisability	Persistence	Social learning
Video Conference		✓	✓	✓	✓	✓				
Telephone			✓	✓	✓	✓				
Audio Conference			✓	✓	✓	✓				
Email							✓	✓	✓	
FTF	✓	✓	✓	✓	✓	✓				
ESM		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 2.3: Illustration of the Communication Media’s Assessment in the Workplaces

2.4.3 Enterprise Social Media: As a Communication Environment in the Workplace

The rapid expansion of the Internet has changed how co-workers interact in the workplace. The era of Enterprise 1.0 has abandoned. Recently, the technology of Enterprise 2.0 became quickly established and widely known. Enterprise 1.0 remains popular and some people find it adequate to accomplish daily tasks. In short, Enterprise 1.0 refers to the technology that allows users to communicate and operate in one communication direction, such as email. In contrast, Enterprise 2.0 refers to the applications employed in the workplace that integrated Web 2.0 technology, such as wiki and blogs, to establish internal social communication among the group members. Farrell *et al.* (2008) found a process for communication between departments in environments where ESM was used. Therefore, it seems likely that the use of ESM within organisations will increase, along with incompetency in dealing with such a style of work during the initial stages (DeloitteVideo, 2013). Hereafter, the author reviews the literature on ESM, its features and its challenges in the workplace.

Understanding the Concept of Enterprise Social Media

Due to the advantages and significant impact of social media on businesses, computer programmers find the idea of modifying particular digital platforms to serve as external and internal communication tools beneficial (Leonardi *et al.*, 2013). Generally, organisations that employ social media have an external multipronged strategy (Piskorski, 2011) which helps to connect them with external parties, such as customers, salespeople and anyone else who is interested in their business. Many social networks have been used by enterprises for the purpose of communicating with the public, such as broadcasting messages via popular social media forums such as Facebook or microblogging on Twitter (McCorkindale, 2009; Macnamara and Zerfass, 2012). Not to mention, social media becomes an experiment field for artificial intelligence (AI) developers to help on analysing data, images, tweets, hashtags, etc. (Nunavath and Goodwin, 2018; Frey *et al.*, 2018). Similarly, AI applies on ESM to help top management and employees to find, organise and link data together. Moreover, AI can be used to reduce the probabilities of uploading inappropriate words or images that might consider offensive for others (Patton *et al.*, 2013; Frey *et al.*, 2018) which may provoke conflict.

On the other hand, using social media within the workplace has another function. Nowadays,

social media have been used to enhance the internal interaction between the members of an enterprise too. Recently, this type of integrated electronic platforms is spreading rapidly and being used by organisations due to its social network benefits (McAfee, 2009). However, some people remain confused about the distinction between social media and enterprise social media due the fact that there is little difference between them and the similarity of the applications content on certain platforms. To differentiate between these two digital platforms, Leonardi *et al.*, (2013) define ESM as:

“Web-based platforms that allow workers to (1) communicate messages with specific co-workers or broadcast messages to everyone in the organisation; (2) explicitly indicate or implicitly reveal particular co-workers as communication partners; (3) post, edit, and sort text and files linked to themselves or others; and (4) view the messages, connections, text, and files communicated, posted, edited and sorted by anyone else in the organisation at any time of their choosing” (pp.2).

Based on the definition above, it is clear that different electronic tools match the first three features mentioned, such as email. However, ESM is distinct from other electronic communication tools as it allows users/members of the organisation to use the previously mentioned features collectively and also access the information at any time (Treem and Leonardi, 2012). Moreover, the literature shows that ESM has affordances that make it different than other communication tools. For instance, one of the most important affordances is that it provides a suitable environment for social learning (Leonardi *et al.*, 2013) through making information sharing and communicative action visible and traceable. Treem and Leonardi (2012) emphasised Visibility and its importance when seeking to locate information. It is common to find two employees who work in the same department or organisation but do not know what tasks the other does or how to do them due to the usage of private communication channels, such as telephone or email (Cross *et al.*, 2003). With the escalation of specialisation within organisations, employees have become used to working in an unsociable environment and the communication has become invisible to others. Hence, the employment of ESM provides a friendly platform which make social learning and tracing communicative action for this purpose affordable (Leonardi *et al.*, 2013).

An important feature provided by ESM is the persistence of the information exchanged via the platform. Bregman and Haythornthwaite (2003) explained that persistence refers to the fact that

information remains accessible by other parties in the same matrix, even after the communicators themselves have logged out. The persistence of communication in ESM gives the users the freedom to observe all interactions at any time within the enterprise, which provides an opportunity to learn and gain experience.

The literature shows that the ESM environment equips users with two types of knowledge: Meta-Knowledge (Ren and Argote, 2011) and Instrumental Knowledge (Huber, 1991). In a theoretical study, Leonardi *et al.*, (2013) conceptualised that these types of knowledge can be gained from using ESM and referred to Meta-knowledge in ESM as the knowledge gained from the users, that helps them to identify which other members possess this specific knowledge. On the other side, instrumental knowledge helps to explain how to carry out a specific task within the organisation. The above mentioned characteristics are indicators of virtual social interactions among co-workers, which form as a suitable environment to study intragroup conflict as a phenomena.

Features and Challenges within the Enterprise Social Media Environment

In general, the Enterprise 2.0 technology shares mutual characteristics called SLATES which McAfee (2006) defined in detail. SLATES stands for six features: Search, Links, Authoring, Tags, Extensions and Signals. Through analysing the literature, it could be said that ESM platforms have the ability to allow users to search for information and find it more easily within an organisation. It also links the content internally, with an emphasis on the importance of presenting information in a structured way. In addition, this platform abridges the user's knowledge, which reflects the organisation's knowledge, and this feature is called Authoring. Plus, classifying the contents via a hashtag or more. Accordingly, the users can identify the category of the topic. This process or system is called Folksonomy. Extension refers to the ability to identify the activities and behaviour of the users, based on which the platform can offer recommendations in response to enquiries. Last and not least, one of the features of Enterprise 2.0 is Signals, which reflects the ability to notify users via their home page when there is an update on the content. SLATES helps to transfer the way in which social networks operate to the workplace and business world.

Social network sites are classified into six groups based on the objectives for using them, which builds a structure called S.O.C.I.A.L (Riemer and Richter, 2012), which stands for Socialising, Organising, Crowdsourcing, Information sharing, Awareness creation and Learning and

linkages. Socialising refers to the informal communication between the users when discussing subjects related to the work relatively freely, which means that organisations that apply this tool should understand the philosophy behind this type of communication and its power (Ferrari, 2012). Organising in general refers to coordinating and arranging the tasks, meetings and other decision making, whilst crowdsourcing refers to contributing to the organisation by using the technique of brainstorming via the platforms to foster creativity ideas and solve problems (Stewart *et al.* 2010). One of the merits of social networks is the ability to upload and store files or even share links via the platforms so that these can be visible and available to all users. This is described as Information Sharing. Also, it can be used for Awareness Creation in order to make the users aware of the tasks and activities that others are undertaking in the workplace, which increases the level of cooperation among them (Riemer and Richter, 2012). Moreover, Learning and Linkage unites users with similar interests or backgrounds in a discussion, which forms more links within the enterprise. Collectively, this enhances the learning process indirectly through sharing knowledge and background across the social network (*ibid*).

Even though the ESM environment offers useful features for organisations (Riemer and Richter, 2012), managers who intend to apply it in the workplace face many difficulties and challenges. Technical, organisational, ideological and environmental challenges are associated with ESM adoption. As reported by Cook (2008), the integration of ESM with the current information systems may produce technical challenges for organisations. The data generated through blogging via ESM could be difficult to recapture because it tends to be disorganised (Passant, 2007). In addition, Grace (2009) emphasized the importance of assessing the security and control issues prior to implementation and identifying how these can be controlled.

Moreover, organisational challenges often arise during the integration of ESM into the workplace. For instance, a rigid chain of command in the workplace can affect ESM adoption. According to Chui *et al.*, (2009), the organisational structure may obstruct technology adoption. Scholars find that a classic hierarchy can negatively affect the work unit. For instance, Leadbetter (2008) argued that there is no need for an internal hierarchy (formal hierarchy) to act as a unit. Other scholars found that working under the classic hierarchy impedes innovation and agility (Tapscott and Williams, 2006). On the other hand, exaggerated apprehension among the top management about the dangers of using social networks in the workplaces is another organisational barrier to ESM adoption (White and Lutters, 2007). A top management that lacks

an understanding of the philosophy and advantages of Enterprise 2.0 technology can limit the adoption of ESM (Chui *et al.*, 2009).

It is equally important to counteract any ideological or cultural challenges. Employing ESM as a new work style in organisations may provoke sensitive political or religious interactions within the ESM environment (Riemer and Richter, 2012). Accordingly, this will lead to unhealthy divisions inside the organisation, so the IT team needs to regulate and control the ESM environment. Also, when the culture of an organisation is not ready to an open communication environment to the exchange opinions both horizontally or vertically, the integration of ESM may prove difficult (Hofstede, 2001).

2.4.4 The Importance of Digital Information Fluency in the Enterprise Social Media Environment

As discussed earlier, the ESM environment is an integrated communication platform that allows co-workers to share knowledge, opinions and interests and also complete certain tasks digitally in a friendly, professional environment (Leonardi *et al.*, 2013; Turban *et al.*, 2011; McAfee, 2009). The literature asserts that ESM becomes the glue that links the employees together and generates an environment that enhances collaborative and knowledge sharing (Bebensee *et al.*, 2011; Richter *et al.*, 2012), especially when working as groups or teams (Drakos *et al.*, 2013). Scholars identify important aspects that need to be considered before implementing new technology in the workplaces. For example, Nosek and McManus (2008) focus on theoretical and technical obstacles, while others propose an approach called POST, which stands for People, Objectives, Strategy and Technology (Li and Bernoff, 2008).

In addition, Turban *et al.*, (2011) developed a model which covers the opportunity, risk, fitness and validity aspects as an approach to evaluating social networks before they are employed in the workplace. However, the literature rarely discusses the importance of DIF within organisations or its effect in terms of facilitating communication and managing intragroup conflict (Colbert *et al.*, 2016). Zhang *et al.*, (2010) assert that ESM is spreading widely in organisations due to its benefits related to knowledge sharing, effective communication, setting an open climate policy, etc. Accordingly, the users need a high level of digital competency in order to be able to deal with the high volume of digital information. The literature shows that different studies have developed various dimensions that collectively conceptualise DIF (Wang

et al., 2013 Çoklar *et al.*, 2017; Adıgüzel, 2011). Nevertheless, it is mainly studied in the education and library context, while neglecting its implementation within organisations (Colbert *et al.*, 2016).

According to Colbert *et al.*, (2016) and Çoklar *et al.*, (2017), DIF is an important competence, especially currently, when the majority of workplaces depend heavily on ICT, such as ESM. Being fluent in dealing with digital information reflects an ability to search, evaluate and implement digital information in order to obtain sufficient results to fulfill the aims of the organisation. The review of the DIF literature found the repeated use of the terms ‘Digital Natives’ and ‘Digital Immigrants’ (Şorgo *et al.*, 2017; Kivunja, 2014), where the former refers to children who are surrounded by computers and video games and the latter refers to children who are unfamiliar with computers and technology. Kivunja (2014) defines digital natives as those who were born post-1980 and digital immigrants as those who born pre-1980. The research argues that this terminology is not generalisable to all individuals on the basis that not all individuals who are born after 1980 are fluent in digital information, and vice versa. Thus, this research will disassociate year of birth from DIF, and limit its focus to debating DIF and its dimensions.

The tremendous development in the field of ICT has caused immense changes in the workplace, such as cross-administrative networking, decentralised decision making, information exchange and the adoption of flexible working (Partnership for 21st Century Skills, 2008). The current progress within ICT is affecting fundamentally the speed of the changing economy, yet ICT alone cannot generate a knowledge-based economy. This can be established by forming eligible human capital in the workplace (Kefela, 2010; Lanvin and Kralik, 2009). Nowadays, workplaces that depend heavily on ICT require highly skilled digital information workers to tackle the complex co-operative tasks. Accordingly, individuals are expected to select the appropriate knowledge from the available information sources.

Since most of the information is available in digital form, workers do not require sufficient technical competence alone but also need excellent skills in order to cope with the constantly shifting workplace (Carnevale and Smith, 2013; Ahmad *et al.*, 2013). Managing digital information becomes important in this arena and individuals need to gain such competencies in order to join the digital workforce, which are called digital information fluency. Twenty-first century digital skills have different names in the literature that can be used interchangeably,

such as digital information fluency, information literacy, etc. (Van Laar *et al.*, 2017; Ilomäki *et al.*, 2016; Gallardo-Echenique *et al.*, 2015).

Colbert *et al.*, (2016) assert that the variations in digital information fluency levels may impact on the conflict and collaboration among individuals who work in groups for the same organisation. Nowadays, some organisations depend heavily on the new internal platforms to communicate and share the work, e.g. T-Mobile, Shell, 7-Eleven, Commonwealth Bank, etc. (Leonardi *et al.*, 2013). This type of environment is called ESM, which is an internal platform, offers the advantages of social media and applies exclusively to the staff members while at work (Leonardi *et al.*, 2013). Briggs and Makice (2012) define digital fluency as “*An ability to reliably achieve desired outcomes through the use of digital technology*” (pp.64). However, the previous definition is quite comprehensive, and the author finds Barr *et al.*’s (2005) definition of DIF better suited to this research: “*the ability to find, evaluate and ethically use digital information efficiently and effectively*” (pp.33). Currently, the usage of technology in a strategic manner requires participation from all levels of the organisation.

Various scholars allocate different dimensions to DIF, such as: educational, demographic characteristics, psychological and social influences (Wang *et al.*, 2013). However, Çoklar *et al.* (2017) and Adıgüzel (2011) allocate different dimensions, which are found to be more closely related to the management discipline. Since Wang *et al.* (2013) assert that psychology is one of the aspects of DIF, it led the author to eliminate their dimensions from this research because it takes this research into a different discipline. Figure 2.6 shows the aspects of digital information fluency that are considered in this research, with further elaboration on the next page.

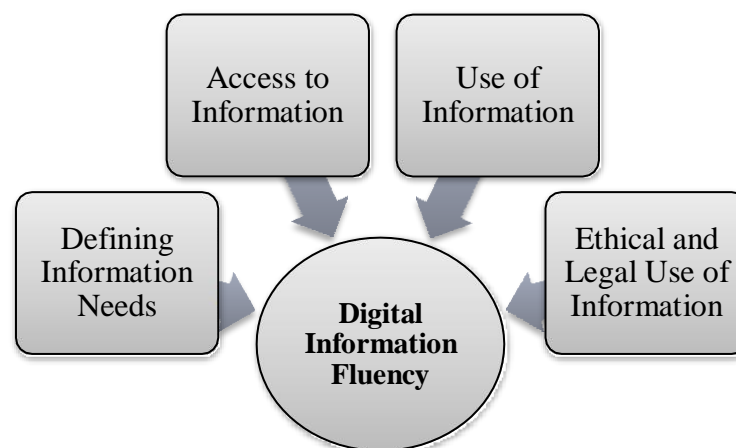


Figure 2.6: Aspects of Digital Information Fluency (Sources: Çoklar *et al.*, 2017 and Adıgüzel, 2011)

Defining Digital Information Needs:

Handling digital information needs advanced skills to suit an environment that adopts communication development. One of these competencies is being able to define the digital information needed at work (E. van Laar *et al.*, 2017). When there is ambiguity regard the information needed to solve a problem, this would be reflected in how electronic searches for desired information are conducted. Thus, it is vital to distinguish between a precise, clear area of enquiry and being common and general. Somerville *et al.* (2008) emphasise the importance of defining the required information before making the enquiry, as this affects the efficiency of reaching the targeted outcomes. Recent studies show that individuals who lack the capability to define the information needed utilise invalid tools, which makes it impossible to collect valid information (Ahmed *et al.*, 2016; Snow and Katz, 2009). Van Laar *et al.* (2017) clearly emphasise this dimension of digital information fluency, and clarify that this aspect needs more consideration in future research.

Access to Digital Information:

“Access” ability refers to assembling and/or examining information in digital settings (Somerville *et al.*, 2008). Accessing information becomes possible for individuals all over the world. With the rapid development of ICT, there is a need to develop co-workers’ skills in accessing information from a variety of databases, which may need different techniques based on the type of database and information concerned. Siddiq *et al.*, (2016) stress the importance of understanding how to access digital information, and classify this as one of the 21st century skills. Although digital information has become accessible, accessing digital information for professional or academic purposes might need further consideration (Snow and Katz, 2009). Currently, searching for information might lead to online sources such as: web pages, enterprise social media, databases, online discussion groups, emails, etc. Hence, the inquirer who seeks particular information should understand the techniques of linking and generating search terms (keywords) in order to hunt for appropriate knowledge (*ibid*). Some recent studies consider the ability to access digital information a significant dimension for measuring the digital information literacy of individuals (Çoklar *et al.*, 2017; Adıgüzel, 2011).

Use of Digital Information:

Different models have embedded the usage of information in a variety of digital information fluency measurements (Çoklar *et al.*, 2017; Smith and Paton, 2014; Adıgüzel, 2011; Smith and

Paton, 2014). However, the implementation of information is divided into different characteristics, such as: analytical, restoration, assessment and knowledge. Therefore, the author reflects these characteristics in the measurement items (see Chapter 4). In a different context, such as pedagogy, some scholars illustrate the impact of using the available information with regard to learning or educational opportunities (Smith and Paton, 2014; Mengual-Andres *et al.*, 2016). Comparatively, co-workers in digital environment organisations might find that employing information appropriately affects collaboration and potential conflict management (Colbert *et al.*, 2016). Moreover, open communication, such as via the internet, offers platforms for everyone to contribute freely of the information published. Thus, Ferrari (2013) stresses the importance of exercising extra caution when dealing with digital information. Eventually, it depends on how digitally fluent an individual is.

Ethical and Legal use of Digital Information:

For individuals to be recognised as digital information fluent, they must ensure that they are using digital information legally and ethically. To do so, this particular proficiency must include an ability to demonstrate awareness of the legal and ethical perspectives when using ICT (Claro *et al.*, 2012; Janssen *et al.*, 2013). Janssen *et al.*, (2013) illustrate the key components that must be embedded in the legal and ethical perspectives and be taken into consideration during the usage of ICT:

- 1- Being responsible during ICT usage: actions and behaviour in the digital environment should lie within the legal, ethical and cultural limits as well as social responsibility. To achieve this, early recognition of the risks associated with the digital environment is vital. Risks might rise if any action or behaviour fails to comply with the legal and ethical aspects.
- 2- Recognising the social impact of ICT: digital information impacts on the social aspects of individuals. Therefore, ICT should be analysed and evaluated prior to usage in order to avoid any illegal unforeseen circumstances.

Hence, it is important to embed the legal and ethical aspects as one of the dimensions of digital information fluency, since this is related to the daily use of individuals and may affect their decisions prior to any application (Çoklar *et al.*, 2017; Janssen *et al.*, 2013).

Based on the above, this research focuses on studying DIF as a moderator of intragroup conflict and task performance. Intragroup conflict, in most cases, damages the performance of organisations (De Wit *et al.*, 2012; Jehn, 1995). Although some studies show a positive impact for certain types of conflict (De Wit *et al.*, 2012), overall, organisational conflict had a destructive impact in many respects (Bendersky and Hays, 2012). Hence, the author focuses on the importance of DIF in intragroup conflict situations in an ESM environment, which might act as a moderator (Colbert *et al.*, 2016; Korovyakovskaya and Chong, 2016; Kivunja, 2014).

2.4.5 Development of Digital Information Fluency as a Phenomenon

The literature on DIF reveals that various terms have been used in research to label individuals' competence regarding utilising IT (van Laar *et al.*, 2017), such as digital skills (Jara *et al.*, 2015), digital literacy (Gilster, 1997), 21st century-skills (Herde *et al.*, 2016), computer literacy (Ktoridou and Eteokleous-Grigoriou, 2011), information literacy (Aharony and Bronstein, 2013), IT literacy (Ferro *et al.*, 2011), digital literacy (Caviglia and Delfino, 2015), digital competence (Li and Ranieri, 2010), etc. According to Wang *et al.*, (2013), these terms are used interchangeably. However, other studies suggest that “digital fluency” or “digital information fluency” (Wang *et al.*, 2012; Briggs and Makice, 2012; Colbert *et al.*, 2016; Jeffrey *et al.*, 2011) are the most representative terms that reflect this competence. Since this study focuses on digital information generated via ESM, the author defines DIF according to Jeffrey *et al.*, (2011): “*the ability to find, evaluate and ethically use digital information efficiently and effectively*” pp.385. Although other scholars have offered other definitions of DIF, they are neither comprehensive nor detailed. For instance, Briggs and Makice (2012) define digital fluency as is “*an ability to reliably achieve desired outcomes through the use of digital technology*” pp.46. Hence, this study adopts (Jeffrey *et al.*, 2011)'s definition.

According to Briggs and Makice (2012), the development of DIF involves four stages (see Figure 2.7). The first stage is called “Anti digital literacy”, when a person denies that the new technology offers any benefit and refuses to engage with or gain knowledge about it. The second stage is called “Pre digital literacy”, when a person becomes more open to learning about the new technology. Pre-literacy is established based on three reasons: 1- Being ignorant and left behind, 2- Realising later the importance of a particular technology, 3- The desire to compete by learning about this particular technology. The third stage is called “digital literacy”,

which is when a person knows what to do with a particular technology and how. However, he/she lacks sufficient skills to employ this technology and obtain sufficient results. The last stage is called “Digital fluency”, when individuals are very familiar with what the technology does and how to use it. Digital fluent individuals are able to employ the technology in a strategic and systematic way to achieve the organisation’s goals.

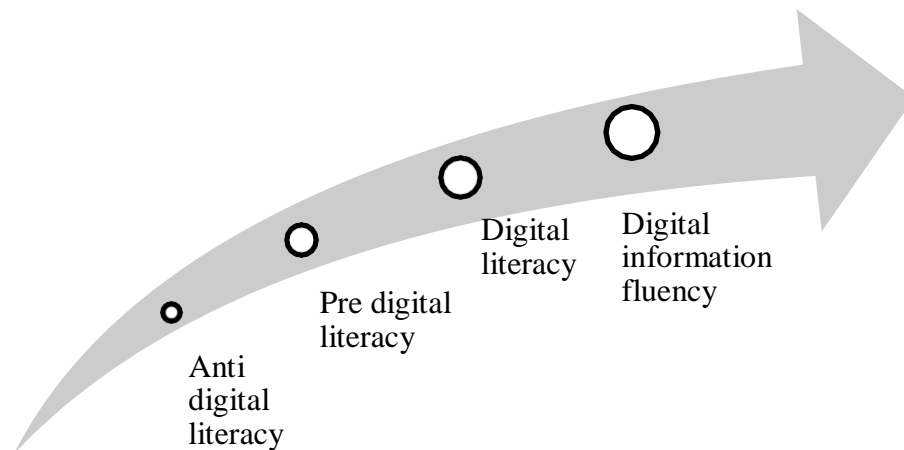


Figure 2.7: Stages of Digital Information Fluency Development (Source: Briggs and Makice, 2012)

Based on the above, it appears that being digital fluent means being able to find, generate, evaluate and ethically employ digital information to achieve the desired outcomes (Jeffrey *et al.*, 2011). Thus, DIF falls into the same category of digital skills (Van Laar *et al.*, 2017) even though, from a level perspective, it is beyond digital literacy (Briggs and Makice, 2012).

2.4.6 Digital Information Fluency in the Context of Intragroup Conflict

As discussed earlier, many reasons can generate intragroup conflict in organisations (Rahim, 2015). One of the most significant reasons is a lack of sufficient communication (Robbins, 2005). Communication can be established in many ways, either FTF or CMC (Salaberry, 2013; Stryker and Santoro, 2012). In this research, the author focuses on ESM as an environment of communication which is categorised as CMC (Leonardi *et al.*, 2013). Recently, the ESM environment has spread quickly and is widely employed in the workplace (McCorkindale, 2009; Macnamara and Zerfass, 2012). The volume of digital information produced in ESM environments is very high, which might lead to “information overload” (Schick *et al.*, 1990; Bauer and Erdogan, 2012). No doubt those workplaces that adopt an ESM environment require fluent individuals to deal with the digital information overload sufficiently. In real life, co-

workers have a variety of DIF levels, from low to high. Therefore, conflict between digital fluent and non-fluent co-workers is expected to occur in workplaces where ESM is implemented (Colbert *et al.*, 2016). As reported by Haas *et al.*, (2015), the tremendous development of ICT provides an opportunity to shift to digital workforces and work from different locations at low cost. However, the significant diversity between the DIF levels of different co-workers can lead to an imbalance and intragroup conflict, which requires jobs to be redesigned to leverage DIF (Colbert *et al.*, 2016).

According to Varey *et al.*, (2002), communication is a process of exchanging information between two or more parties, who could be classified as senders and receivers. To achieve adequate information exchange, certain competencies are required, such as: speaking, reading, writing, listening, etc. In the ESM environment, where exchanging information occurs in a digital format, DIF is one of the criteria that must be considered in the workplace (Briggs and Makice, 2012). Scholars assert that qualifications alone are insufficient to match the competences needed in the workplace (Soule and Warrick, 2015; Cobo, 2013). DIF is one of the skills that can be gained due to collective factors rather than limiting it to the educational context (van Laar *et al.*, 2017). In addition, when incompatibility exists in terms of DIF in the digital environment, communication might be affected, which can lead to conflict (Colbert *et al.*, 2016). Individuals tend to resist fundamental changes and new ways of thinking (Hays, 2014). When organisations change their style of working, its likely confronted by ignorant of this development due to difficulties in absorbing it (Kivunja, 2014). Accordingly, conflict might arise among the employees, which called “cognitive conflict” in the workplace (*ibid*).

Recent research reveals that there exists an association between communication competency and conflict management (Sabanci *et al.*, 2018). As reported by Xu *et al.*, (2018), the existence of new technology media like social media platforms might lead to conflict with the classical styles of judgment. Another study shows that language fluency levels are associated with trust interrelations among group members and ultimately conflict in daily life activities (Barner-Rasmussen and Björkman, 2007). Similarly, there is an indication that DIF levels might affect the communication process and so lead to conflict or harmony (Colbert *et al.*, 2016). Based on the literature, the author created Table 2.4, to help to bridge the gap between DIF and intragroup conflict.

Levels of DIF in the ESM Environment		Communication Consequences in the Context of Intragroup Conflict
Sender	Receiver	
High	High	Employ information for the right segments and time – the communication process is in harmony and decreases ambiguity.
High	Low	Valuable information might be available, but there is incompetence or a waste of information. This situation might be healthy in encouraging low DIF individuals to learn from high DIF individuals – the communication process partially fails and might provoke intragroup conflict in the future due to ambiguity.
Low	High	
Low	Low	Weak information or a shortage of information in ESM – no benefit is gained from ESM, and there is a high potential for intragroup conflict arising due to the weak exchange of information.

Table 2.4: Analytical Illustration of the Linkage between Variations in DIF Levels and Intragroup Conflict

After critically reviewing the literature, this research can now identify the gap in knowledge.

2.5 Identifying the Literature Gap

After reviewing the literature, the author highlights that there is lack of knowledge about the impact of DIF in ESM environments in the context of intragroup conflict. The intragroup conflict literature asserts that the studies in this domain have produced controversial results (Liu *et al.*, 2017; de Wit *et al.*, 2012). However, there is a tendency among academics to view this behaviour as inevitable and more likely to affect the performance of groups and individuals (Rahim, 2015; de Wit *et al.*, 2012; Bendersky and Hays, 2012). Even though several models have attempted to conceptualise and test the association between intragroup conflict and performance (de Wit *et al.*, 2012; Wachsmuth *et al.*, 2016; Hanif *et al.*, 2016), none have included the effects of DIF on intragroup conflict (Colbert *et al.*, 2016), that might occur in social networks (Korovyakovskaya and Chong, 2016) such as ESM (Leonardi *et al.*, 2013). Thus, three important points need to be highlighted:

- First, the incentive for focusing on this domain is its importance both academically and practically. Although there are many studies on intragroup conflict, scholars remain investigate regard this phenomena from different perspectives (Liu *et al.*, 2017). In

addition, intragroup conflict in general (Rahim, 2015) and digital fluency within social networks in particular (Colbert *et al.*, 2016) are important phenomena in professional life. Therefore, bridging these two empirically would contribute to knowledge both theoretically and practically.

- Second, the literature shows that the implementation of ESM has become widespread in organisations. This environment suffers from a dearth of studies and so requires more investigations (Leonardi *et al.*, 2013). One of the important aspects that needs more investigation is the negative impact of intragroup conflict that might arise within digital social networks (Yuan and Jing, 2014) due to the variances in the DIF levels among the group members (Colbert *et al.*, 2016).
- Third, there are studies reveal that considering DIF as an aspect of communication in digital environment might boost the performance of the users during the usage of social networks (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). Ultimately, this call corresponds with other studies to conduct further studies to merge between communication and performance in the context of intragroup conflict (Korovyakovskaya and Chong, 2016; Yuan and Jing, 2014).

This research investigates the impact of DIF levels on the relationship between the dimensions of intragroup conflict and task performance. Since the literature asserts that communication within an information overload environment needs digital fluent individuals (Treem and Leonardi, 2012; Colbert *et al.*, 2016; Briggs and Makice, 2012), significant diversity in individuals' DIF levels might lead to communication failure (Colbert *et al.*, 2016). Although diversity in the workplace offers advantages, this might turn into conflict unless managed effectively (Bauer and Erdogan, 2012).

Therefore, based on the above, the author fills this gap and contributes to the body of knowledge by conducting empirical research to answer the research question (as set in Chapter 1). Table 2.5 shows some of the studies that support the current literature gap:

Position Statement and Recommendations/ Source	Analysis of the Literature Gap
<p><i>“Workforce will share the workplace with an older cohort of co-workers less comfortable with technology; organisations will also need to reconcile the conflicts that may arise as these groups collaborate. Research is needed to determine how to design jobs in ways that best leverage digital fluency and to explore how variance in digital fluency impacts conflict and collaboration in diverse groups”.</i> (Colbert et al., 2016)</p>	<p>There is a call to study the intragroup conflict that might be generated due to a mismatch between DIF levels. It could take place in digital environments, such as ESM. Variances in DIF might affect collaboration and the outcomes of the groups in such workplaces.</p>
<p><i>“Prior researchers found a negative relationship between the relationship type of conflict and perceived performance in culturally diverse work groups. However, the present study did not confirm this findings and further research is needed to prove this relationship. Latest advances in technologies stimulate global business development. In response to the demands of globalisation, businesses employ virtual groups and teams, meaningful findings could be obtained by replicating this study in the virtual workforce”.</i> (Korovyakovskaya and Chong, 2016)</p>	<p>There is a gap in the body of knowledge in terms of studying the impact of intragroup conflict on performance when it comes to digital platforms in organisations, especially when implementing new technologies as a new communication means, such as ESM.</p>
<p><i>“Thirdly, additional factors may help conflict boost team effectiveness and these factors should be actively explored in future research. Finally, it is of great value to study from the perspective of social network analysis. It is a promising question that needs to be explored in future research because knowledge communication between members from different research teams is in essence the transition process of cooperating and communicating in networks”.</i> (Yuan and Jing, 2014)</p>	<p>Social networks such as ESM are considered a new environment within the relationship between conflict and team performance which needs to be explored.</p>
<p><i>“We encourage scholars to continue the work begun here by continuing to think about different metaphors for understanding ESM use, and exploring how those metaphors allow us insight into various processes that are important to organizations. Theoretically motivated investigation of social media technologies in the workplace is now an imperative for the fields of communication, management, and information systems”.</i> (Leonardi et al., 2013)</p>	<p>The literature shows that there exists a dearth of studies related to the ESM environment. One of the aspects that need to be investigated is intragroup conflict within this environment.</p>

<p><i>“The level of team virtuality can thus play a role in conflict management. Since the development of virtual communication is an ongoing process, it is important to further elaborate this concept. Especially the relations between the level of team virtuality, process conflict, task conflict, task interdependence, and perceived team performance can be further examined. Future research should incorporate the developments of new media and ways of communicating”.</i> (Remco de Jong et al., 2007)</p>	<p>There are many virtual communication tools available, each of which has different effects on conflict and performance. Thus, the ability to use these tools is considered a new variable for studying the relationship between intragroup conflict and performance.</p>
<p><i>“By gaining a better understanding of how teams tolerate ICT and what roles these technologies play in team conflict more effective strategies of use may be suggested. A natural line for future research is to consider more deeply how technologies can be used in collaborative situations, investigating not only the kind of technologies that are more suitable, but also the strategies of use that are more successful. Another possibility is to re-examine the role of ICT in team conflict management in the context of virtual teams, when opportunities to meet face-to-face are limited”.</i> (Correia, 2008)</p>	<p>There is a call to investigate the role of ICT in the context of conflict management. ESM would be a good example of ICT to be tested in the context of intragroup conflict, yet ESM is just a tool for communication. DIF is the ability to use ICT effectively.</p>

Table 2.5: Analysis of the Literature Gap

Based on the analysis of the literature gap, this research mainly focuses on the following aspects: conflict aspects, performance aspect, virtual environment aspect, organisational behavioural aspect and the ability to be applied in different contexts and at the intragroup level. Consequently, the most relevant theories in the literature are identified as well, and they are: distraction-conflict theory, organisational behaviour modification theory, social conflict theory, trait activation theory, social identity theory and realistic conflict theory. The author attempts to determine the main aspects at the end of the literature to be used as orientation during the theories evaluation stage which shifted to Chapter 3. The author aims in Chapter 2 to merely review the literature and articulate the background of the main concepts of the literature without addressing and evaluating the theories. To prevent confusions, the author postpones the theoretical aspect to the next chapter to preserve the process of developing hypotheses in accordance with the focal theories.

2.6 Conclusion

In this chapter, the author critically reviewed the literature on organisational conflict and focused on the intragroup conflict level. Accordingly, bridging between the intragroup conflict literature and DIF literature becomes possible, ultimately making it possible to identify the research gap and emphasise the research problem. The literature asserts that intragroup conflict among co-workers has both negative and positive impacts on group outcomes (Rahim, 2015). However, the negative impact on group outcomes seems to outweigh the positive impact (De Wit *et al.*, 2012; Bendersky and Hays, 2012). Chen and Tseng (2016) and Yu *et al.* (2017) emphasised that intragroup conflict is a significant issue, which is why it has received widespread attention from academics and practitioners to date.

The author began this chapter by reviewing a wide range of definitions, types, historical views, effects and management techniques of organisational conflict. This process enhances our understanding of the concept of conflict. On the other hand, by reviewing the literature and publications of most of the key authors working in the domain of intragroup conflict (Rahim, 2015; De Wit *et al.*, 2012; Jehn, 1994, 1995; Bendersky and Hays, 2012), it was found that several causes might spark conflict within organisations. It seems that variations in DIF levels may generate misunderstanding and a lack of collaboration which ultimately leads to conflict (Colbert *et al.*, 2016). This research focuses on the intragroup conflict that might arise in the ESM environment due to the significant gap in the DIF levels among the group members. This is an issue in the workplace, which might lead to insufficient communication among the group members (Robbins, 2005) and plays an important role in generating conflict in digital environments.

The literature contains extensive investigations of the relationship between the dimensions of intragroup conflict and group outcomes (De Wit *et al.*, 2012). However, there is dearth of studies that focus on intragroup conflict in digital environments due to variations in the DIF levels of the individual group members (Colbert *et al.*, 2016). Therefore, the author aims to investigate the moderating impact of DIF on the relationship between intragroup conflict and task performance. After reviewing the literature, the author is now able to identify the main constructs for building a research model. Also, the domain and notion of the research became clearer. Hence, in the next chapter (Chapter 3), the author evaluates the theories that could be used as the focal theory/theories for the research's theoretical framework. The critical review

of the literature provides a solid base for the research by helping to develop the hypotheses associated with the main constructs.

CHAPTER 3: THEORETICAL MODEL

3.1 Introduction

The previous literature review identified gaps that need further consideration. The research problem identified by reviewing the literature underline that: (a) the existed theoretical models that formulate the relationship between intragroup conflict and performance neglected the difference DIF levels existing among co-workers, especially in ESM environments; (b) intragroup conflict has become an important topic for academics and practitioners, and it needs more attention after the huge development of the digital and communication aspects, such as implementing ESM in the workplace. The author reviewed the literature and presented the findings in Chapter 2 accordingly. Subsequently, to extend the investigation about this problematic in the literature, Chapter 3 sets out to develop a theoretical model to investigate the moderator effects of digital information fluency on intragroup conflict. The theoretical model is based on previous groundwork in the literature. It is related to the associations between intragroup conflict dimensions and group outcomes. This study underpins the relationship between the intragroup conflict dimensions and task performance by adopting distraction-conflict theory along with the organisational modification behaviour notions as the theoretical basis.

Section 3.2 presents the evaluation process of the related theories in the domain of this research. This will help to understand the reason for choosing Distraction-Conflict Theory (DCT) and Organisational Behaviour Modification Theory (OBMT) as the focal theories, based on the main research aspects. Section 3.3 clarifies the theoretical perspectives and notions of DCT and OBMT, which provide the narrative of the focal theories. Thereafter, in Section 3.4, the author starts to build the blocks of the theoretical model for developing the research hypotheses, where in Sections 3.4.1-3.4.4 the hypotheses and reflections on the associations of the dimensions of intragroup conflict with task performance are constructed. Figure 3.2 illustrates the author's thoughts and ideas by using the rich picture model approach, which helps to build the proposed theoretical framework at the end of the chapter. Consequently, in Section 3.5, the author introduces DIF as a moderator variable on the relationship between the intragroup conflict dimensions and TP. Furthermore, Section 3.5 elaborates on the dimensions of DIF (Sections 3.5.1-3.5.4) and Section 3.5.5. hypothesises on the moderator effects. Finally, Section 3.6

proposes a theoretical model for studying the moderating effects of DIF in the context of intragroup conflict in an ESM environment, while Chapter 3 is concluded in Section 3.7.

3.2 Evaluation of the Theories related to the Research Context

This research depends on several important grounding works (e.g. Rahim, 2001; Bendersky and Hays, 2012; Jehn, 1997; de Wit *et al.*, 2012). Previous research studies focused on the linkages among the research variables, which is taken into consideration in this research. However, the author needs to fortify the theoretical model by underpinning the theories that fit the context of the research. Hence, this section assesses the theories that are most closely related to this topic, based on the key aspects of the research. The author intends to develop a theoretical model based on the review of the literature that indicates the main gap. Based on the gap identified in Chapter 2, this study intends to fill this gap by presenting a theoretical model to introduce DIF as a moderator of intragroup conflict in the context of the ESM environment (Jimenez *et al.*, 2017; Collbert *et al.*, 2016). On the other hand, Korovyakovskaya and Chong (2016) and Yuan and Jing (2014) assert the importance of investigating conflict within social networks in the workplace. Therefore, the author takes these future research recommendations into consideration prior to constructing the research model.

With this intention, it is important to embrace the relevant theories in the literature and cross-check them along with the key aspects of the research. Consequently, six theories were found to be closest to the aspects of this research. Therefore, this research develops a taxonomy in Table 3.1 to demonstrate the comparative strengths and weaknesses along with the research aspects of these theories in order to identify the underpinning theories. Etymologically, the term “Taxonomy” is derived from Ancient Greek, and can be divided into two parts: 1- *Taxis*, which means an ‘arrangement or division’, and 2- *Nomos*, which means ‘law’. Thus, when these two parts are combined, the word means “the laws of divisions” (Enghoff, 2009). Usually, the purpose of developing taxonomies is to establish recognition, comparison, description or assessment (*ibid*). In this research, the taxonomy helps to assess the relevant theories based on the key aspects of the research.

To do so, the author allocates the key aspects of the research that emerged from the literature (See Table 3.1). The relevant theories will be evaluated through a cross-checking process based

on the following aspects: conflict aspects, performance aspect, virtual environment aspect, organisational behavioural aspect and the ability to be applied in different contexts and at the intragroup level. Consequently, the most relevant theories in the literature are identified as well, and they are: distraction-conflict theory, organisational behaviour modification theory, social conflict theory, trait activation theory, social identity theory and realistic conflict theory. It's important to mention that Duel-Concern Model posits the base on the association between conflict and performance (See Chapter 2). The Duel-Concern Model was mentioned in the research's literature to articulate the position of DIF as external variable (mediator, moderator, independent or dependent variable). Thus, the Duel-Concern Model likely to be referred to it to determine and explain the best conflict management technique based on the notion of the research. Yet, it neglects the rest of the main aspects of the research. On the other hand, it is important to note that this research finds the aforementioned theories to be strongly relevant to the key aspects of the research, although this does not mean that there exist no further relevant theories. Due to the research constraints, the assessment is based on the above theories alone, after reviewing the literature to ensure that they are relevant to the current research.

Theories Key Aspects	Distraction-Conflict Theory	Organisational Behaviour Modification Theory	Social Conflict Theory	Trait Activation Theory	Social Identity Theory	Realistic Conflict Theory
Conflict	✓	⊙	✓	✓	⊙	✓
Performance	✓	✓	✗	✓	✗	✗
Virtual Environment	✓	✓	⊙	⊙	✓	⊙
Organisational Behaviour	✓	✓	✓	✓	✓	✓
Can be Used in Different Contexts (Transferable)	✓	✓	✓	✓	✓	✓
Intragroup Level	⊙	✓	⊙	✗	⊙	✗

Table 3.1: Assessment of the Relevant Theories

✓ = Supported

✗ = Not supported

⊙ = Partially supported

The table shows an assessment of some of the relevant theories in the literature. Linking each theory with the key aspects of the research provides an indicator of its suitability and makes it possible to identify the most appropriate theories to be applied as theoretical lenses. In this section, the author merely evaluates each theory and links each one with each key aspect to examine whether or not it covers the majority of the required aspects. This assessment utilises three symbols to indicate the match between the theory and the specific aspect, as follows: ✓ = Supported, ✗ = Not supported, ⊕ = Partially supported. To clarify more on the assessment, it follows this process: the theories that show full corresponding based on the key aspects of the research would be considered as a focal theory. Yet, if the listed theories don't show full match, then it might be possible to select two theories that can support the other and fill the missing aspects (George and Jones, 2012; Colquitt and Zapata-Phelan, 2007). Based on the above illustration, this research will briefly assess each theory:

Distraction-Conflict Theory

DCT helps us to understand the social facilitation process by studying the attentional conflict impact on individuals' performance (Baron, 1986). DCT emerged from social facilitation theory (Zajonc, 1965) and both theories cover the hypothesis of social facilitation effects. However, DCT embraces the conflict aspects between co-workers, which is considered a key aspect of this research. In addition, DCT covers performance as an output in the theory which supports the notion of this research as well. On the other hand, DCT has been found to be applicable in digital environments (Prokopec and Supérieure, 2013), which underpins the context of this research. Since DCT is applicable in different contexts, it matches the criteria of the research, too. George and Jones (2012) assert that DCT is considered one of the theories that fits the organisational behaviour paradigm and can be used at the intragroup level. In addition, DCT is still considered a solid theory for explaining workplace conflict, which has been adopted very recently in a similar domain (Liu *et al.*, 2017).

Organisational Behaviour Modification Theory

OBMT is a theory that is used to study the modification process regarding behaviour at the individual or organisational level (Stajkovic and Luthans, 1997). The literature shows that OBMT is labeled as "reinforcement theory" in some contexts (George and Jones, 2012). The notion of this theory is suited to the study of negative behaviour in an organisation through applying an intervention which might positively enhance the output, such as performance (Stajkovic and Luthans, 1997). This research finds that this theory matches most of the key

aspects of this study, such as its suitability for a virtual environment (McKinsey and Company, 2012). Most importantly, the notion of the theory's process can be adopted in this research since the moderator variable will act as an intervention into behaviour at the intragroup level; namely, intragroup conflict. Ultimately, the relationship between the input (intragroup conflict) and output (TP) will be evaluated. This research finds that OBMT underpins the research.

Social Conflict Theory

Social conflict theory is a well-established theory that has been repeatedly used in many fields, such as social science, politics and economics (Engels and Marx, 1848). Marxists hypothesise that conflict accrues among individuals or dominant groups due to a desire to defend their own systems based on the control of sources and power. The evaluation shows that this theory is used widely to clarify and establish an understanding of the concept of conflict (Bystrova and Gottschalk, 2015). However, it seems that it is not very closely linked to the performance aspect. Moreover, the author finds unsolid ground between this theory and the digital environment aspect.

Trait Activation Theory

Trait Activation Theory is considered one of the theories that support the relationship between conflict and performance (Rahim, 2001). Rahim (2001) mentions the inverted U-shape relationship that exists between conflict and performance, based on a theoretical base referring to trait activation theory. However, this does not explain the changes in the dominant response behaviour of the parties in a virtual environment. Trait activation theory explains the effect of the trait of the individual on performance based on the context (Judge and Zabata, 2015), yet it could be unclear and generic when it considers individuals' traits to be constant and unchangeable over time or in different environments. Therefore, this theory might be unsuited to the context of the intragroup level in the workplace.

Social Identity Theory

Social Identity Theory was established by Tajfel (1981) and is defined as "*that part of individuals' self-concept which derives from knowledge of their membership in a social group (or groups) together with the value and emotional significance attached to that membership*" (pp. 255). Yee Wei Au (2010) asserts that Social Identity Theory is appropriate for studying the digital environment and the intergroup level. However, it was found to be only partially suitable for studying the intragroup level as, although it could covers the conflict and

organisational behaviour aspects (Hewstone and Greenland, 2000), it is less relevant with regard to the performance aspect.

Realistic Conflict Theory

Realistic Conflict Theory is driven by the Marxist notion. The theory was established in the 1960's and rearticulated in the 20th century. Sherif (1966) considers it one of the most remarkable empirical researches related to realistic conflict theory. Based on the assessment above, the theory focuses on conflict aspects at the intergroup level between individuals or groups. However, it fails to explain the interaction within the intragroup level and the association between conflict and performance. The assessment found that this theory is partially suitable for application in the context of the digital environment. However, it concentrates on the hostile attitude among individuals rather than the psychological factors (Campbell, 1965).

To conclude, the previous assessment of the relevant theories shows that DCT and OBMT are the most suitable theories to form the focal theories of this research.

3.3 Theoretical Perspectives

The author aims to investigate the role of DIF in the association between intragroup conflict and TP in the context of the ESM environment by conducting an empirical investigation. The literature asserts that these concepts have been studied in different contexts. However, there is a dearth of research on the effects of DIF on intragroup conflict in the workplace (Collbert *et al.*, 2016). As such, it is vital to expand on the previous studies regarding the relationship between the intragroup conflict dimensions and performance. Investigating the interplay of digital information fluency as a moderator in the context of conflict management might make a theoretical and empirical contribution towards extending the knowledge in this discipline. Hence, a rich picture model was developed to help this research to illustrate the thoughts in visual form (see Figure 3.1). A rich picture model is applied in research as an initial step to visualise a situation through diagrams that reflect the author's ideas (Sutrisna and Barret, 2007).

Therefore, the DCT and OBMT stages are utilised in the rich picture model to form a foundation for the proposed model at the end of Chapter 3. The author finds that DCT with the support of OBMT helps to generate a novel model and hypotheses. The rich picture model is divided into three stages as follows:

First stage:

The conflict aspect seems to match the first stage. The author finds that intragroup conflict situations should be investigated through four dimensions: task conflict, relationship conflict, process conflict and status conflict. Hence, the dimensions of intragroup conflict should be studied as natural human behaviour in the workplace (Rahim, 2001).

Second stage:

Since the author has defined the research context (the ESM environment), an intervention would occur via DIF in the research context among the co-workers. Thus, it seems that DIF would act as a moderator variable. The intervention might change the association and antecedents of conflict and performance. In addition, the domain response of conflict on performance might be changed due to the variance in DIF.

Third stage:

Based on the literature, there are connections between engaging in conflict situations among the members of the same group and their performance as groups or individuals. Hence, it should be kept in mind that the output of this study is related to task performance, which needs ultimately to be evaluated after the intervention stage.

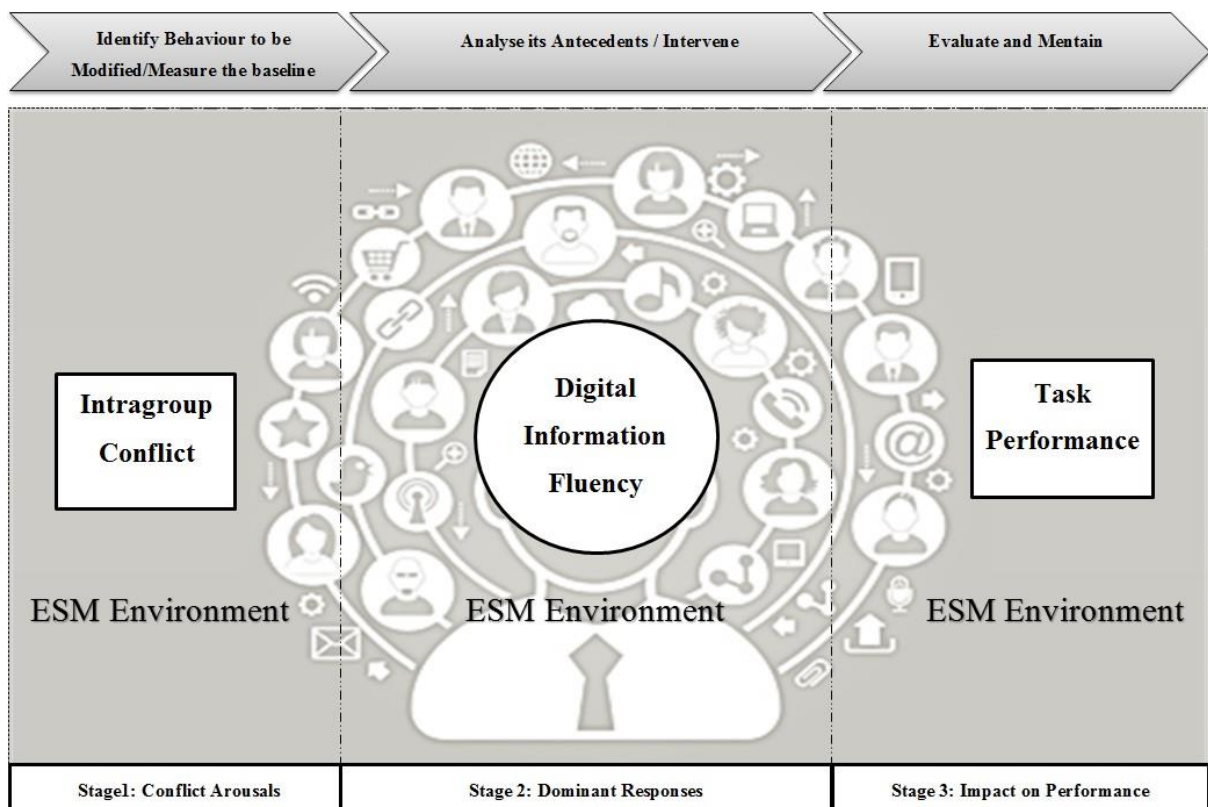


Figure 3.1: Rich Picture Model of the Research (Abstract Model)

Intragroup conflict is described as an action that becomes apparent due to incompatibility or mismatches among the group members (De Dreu and Gelfand, 2008). Intragroup conflict is considered a level of organisational conflict and it seems to be attracting increased scholarly attention recently (Liu *et al.*, 2017; Rahim, 2015; De Dreu and Weingart, 2003; Jehn and Bendersky, 2003). Conflict is a natural and inevitable behaviour among group members (Rahim, 2015). Several studies of intragroup conflict present both the negative and positive effects of conflict on the outcomes of groups, such as performance (De Dreu and Weingart, 2003; Hambrick, 2007). In addition, a number of studies scrutinise the antecedents of intergroup conflict, such as the characteristics, size and diversity of the groups (Pelled *et al.*, 1999), task attributes (Mooney *et al.*, 2007) and group working operations (Moye and Langfred, 2004).

Furthermore, scholars have attempted to study intragroup conflict by testing variables as moderators to assess their effects on the association with group outcomes (de Wit *et al.*, 2012; Dimas and Lourenco, 2015). For instance, Dimas and Lourenco (2015) examine conflict management styles as a moderator of intragroup conflict and effectiveness. Researchers are studying new variables as moderators to add to knowledge and reveal new findings (Baron and Kenny, 1986). Investigating the role of DIF in the context of conflict management might add a theoretical and further empirical contribution to this discipline. Therefore, the author employs the notion of DCT (Baron, 1986), supported by OBMT (Stajkovic and Luthans, 1997), to underpin the theoretical model. The author finds that DCT with the support of OBMT helps to conceptualise the relations between the model's constructs and so generate a novel model and hypotheses.

DCT emerged from social facilitation theory (Zajonc, 1965) and both theories tackle social facilitation effects. However, DCT differs in that it embraces the conflict aspect between co-workers, which could be applied to information overload in an ESM environment, which is considered a key aspect of the research. In addition, DCT covers performance as an output in the theory, which fits the research model's output as well. On the other hand, DCT has been found to be applicable in social networks (Prokopec and Supérieure, 2013), which underpins the context of the research. George and Jones (2012) assert that DCT is considered one of the theories that fit the organisation behaviour paradigm and can be implemented at the intragroup level. On the other hand, OBMT helps to conceptualise modifying conflict as a behaviour

through a moderator intervention in the context of this research.

The group members' involvement in virtual worlds shares similarities with the real world (Jimenez *et al.*, 2017). This view might be put forward by critics, due to a belief in the dissimilarity between social dynamics in the physical and computer-generated worlds. Therefore, critics argue that the social science theories might be unsuitable for studying individual behaviour in virtual worlds. However, contradictory arguments advocate the applicability of certain social theories in the virtual world (Goel *et al.*, 2013). The literature embraces the applicability of social theories in the virtual world via a variety of disciplines, such as philosophy, computer science and neuroscience.

According to Berger and Luckman (1966), the basis of realism is considered to be socially developed rather than absolute. From a philosophical point of view, this research believes that the existence of a subject occurs due to our experiences, which are entrenched in the context of our communications with others. The virtual world has the ability to transfer feelings and experiences as in a real-world environment. Watching a virtual car would reflect a person's thinking about a real car due to the cognitive relations generated in his/her consciousness (Berger and Luckmann, 1966). Therefore, programmers adopt existing analogies to explain what users can see and hear in the virtual world.

On the other hand, computers behavior literature asserts that some virtual environments have an ability to offer a sense of reality, such as transferring emotions via perception tools to interact with individuals (University of Sussex, 2015). The technique for transferring emotions is still in the initial stage but aural-virtual and sense of smell perceptions have been applied for a while. Moreover, the many-to-many interaction feature in the virtual environment already allows individuals to recognise the availability of a person based on his/her avatar status (Schroeder, 2002).

Moreover, scholars in neuroscience advocate that the virtual context impacts on the perceptions of a person as in the real world, due to what called the "neuro mirror" (Lindstrom, 2008). In other words, when a person observes others doing similar actions, this generates arousal. Even though the performance takes place in a virtual environment, it activates the same mirror neurons. Thus, performing actions in a virtual environment connects virtuality to reality in emotional terms.

Therefore, this research argues that social theories such as DCT and OBMT are supported by different literature to study behaviour such as intragroup conflict in virtual worlds, such as the ESM environment.

Workplaces can benefit from the notion of social facilitation when tackling intragroup conflict, especially in an online context. The interactions among employees in an ESM environment can generate social facilitation, where the presence of the users is associated with variation in DIF levels and has a strong effect on behaviour and performance (Rafaeli, 2002). Many organisations have launched ESM to achieve the above-mentioned goals (Brandel, 2008). ESM is designed to enhance the quality of a group's communication through the exchange and analysis of digital information, which reflects positively on performance and knowledge sharing among employees (Leonardi *et al.*, 2013; Kim *et al.*, 2010). The notable spread of ESM has led to an increase in the number of studies investigating the impact of ESM usage in the workplace (Jimenez *et al.*, 2017; Leonardi *et al.*, 2013). However, there is still a lack of knowledge regarding the effects of DIF on intragroup conflict and TP in an ESM environment (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). Therefore, this study attempts to develop a theoretical model in order to study the dynamics of mitigating the risk of intragroup conflict affecting performance in an ESM environment due to variations on DIF level.

To conclude this section, this research finds that DCT and OBMT are well-established theories that match the key aspects of this research. Hence, the notions of these theories will be implemented as theoretical bases for studying intragroup conflict as behaviour in the ESM environment (Liu *et al.*, 2017; Stajkovic and Luthans, 1997). In the following sections, the associations of the model's constructs will be elaborated further, with each section concluding by developing a hypothesis to be tested.

3.4 The Association between Intragroup Conflict and Task Performance

3.4.1 Task Conflict and Task Performance

TC is regarded as one of the main dimensions of intragroup conflict (Jehn, 1994; Jehn, 1995). Jehn and Mannix (2001) define it as “*an awareness of differences in viewpoints and opinions pertaining to a group task*” (pp.238). Scholars have produced varying findings pertaining to

TC and group performance (de Wit *et al.*, 2012). For instance, TC might be constructive in certain circumstances in regard to routine tasks, but impair group performance in regard to non-routine tasks (Jehn, 1995). However, it seems that TC tends to affect performance negatively and can evolve into personal disagreements within the group (De Dreu and Weingart, 2003). Some investigations of TC suggest a positive correlation with performance based on distinguishing between distal group outcomes and proximal group outcomes (de Wit *et al.*, 2012); for example, it has been found that TC can provoke innovation, productivity and effectiveness with regard to distal outcomes (Ancona and Caldwell, 1992; Van der Vegt and Bunderson, 2005; de Wit *et al.*, 2012). However, this is only in specific circumstances, when the correlation between TC and RC is weak (de Wit *et al.*, 2012).

In contrast, when TC is shifted to RC, the hostility that characterises RC (Jehn, 1995; Jehn and Bendersky, 2003) may inhibit any positive impact of TC from emerging (Mooney *et al.*, 2007; Yang and Mossholder, 2004). As De Dreu and Weingart (2003) assert, TC can be constructive under very specific conditions, which are rare, so this area needs more evidence and research. Therefore, we find the assumption that categorises TC as being associated positively with performance to be weak, and therefore hypothesise:

H1: Engaging in TC affects TP negatively in the context of the ESM environment.

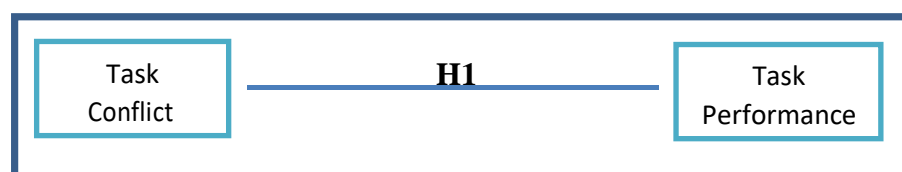


Figure 3.2: The Relationship between TC and TP

3.4.2 Relationship Conflict and Task Performance

RC is interpersonal friction due to inharmonious relationships among the group members (Jehn, 1997, Jehn and Mannix 2001). Usually, it causes tension, annoyance and hostility among the workforce (Amason, 1996; Jehn, 1994). In general, RC combines with an individual's outcomes negatively (de Wit *et al.*, 2012; Jehn, 1995).

Several studies have analysed the causes of this negative impact on individual and group performance. For instance, Jehn (1995) shows that RC produces negative emotions and refusal

among workers, which ultimately hinders information exchange. Furthermore, interpersonal friction leads to employee anxiety (Dijkstra *et al.*, 2005) and causes hostility between employees (De Dreu and van Knippenberg, 2005). In this context, the hostility and anxiety produced by RC hinder the employees' cognitive functioning, which creates a prejudiced assessment of information (Roseman *et al.*, 1994). Consequently, the information exchanged will be biased, not to mention the time and energy that will be wasted due to focusing on the friction rather than the core tasks (Medina *et al.*, 2005), which might make employees slow to cope with changes, such as the adoption of new technology (Simons and Peterson, 2000).

Amason (1996) emphasises how interpersonal friction triggers negative emotions among individuals, which is referred to as "emotional conflict". Therefore, RC harms performance and group operations due to its destructive nature that feeds personal incompatibility rather than enhancing TP (Amason, 1996). De Jong *et al.*, (2008) find the virtual communication context insignificant regarding the negative affect of RC on team performance. Therefore, the author assumes that the ESM environment will not alter the negative affect on TP either. Subsequently, this provides grounds for proposing the following hypothesis:

H2: Involvement in RC affects negatively TP in the context of the ESM environment.

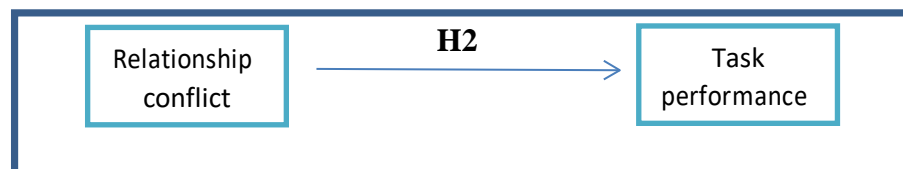


Figure 3.3: The Relationship between RC and TP

3.4.3 Process Conflict and Task Performance

There are several indicators that suggest the existence of a third dimension of intragroup conflict, namely PC (Jehn *et al.*, 1999). PC has been found to affect team performance directly (Behfar *et al.*, 2011). The similarity between PC and TC is that both are considered conflict-based work; however, PC tends to evolve during procedural-, logistical- and responsibility-related disagreements with regard to the accomplishment of tasks (Jehn and Bendersky, 2003). According to Jehn (1997), PC harms work output and negatively influences collaboration, especially with regard to the responsibilities of co-workers. PC can, however, be less

detrimental to group performance under certain conditions (Behfar *et al.*, 2011); for instance, when the conflict concerns who is liable for what and how tasks should proceed, this may facilitate a crucial reassessment which might enhance the group performance (Jehn and Mannix, 2001). Generally, PC does not help to enhance group performance, as found in a reliable meta-analysis study of intragroup conflict (de Wit *et al.*, 2012). In addition, PC was found to be negatively correlated with performance in virtual environments as well (De Jong *et al.*, 2008). Based on what has been illustrated above, this leads us to hypothesise:

H3: Engagement in PC negatively affects TP in the context of the ESM environment

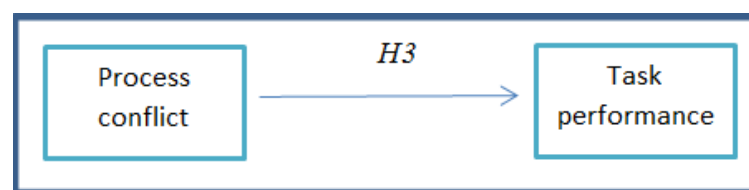


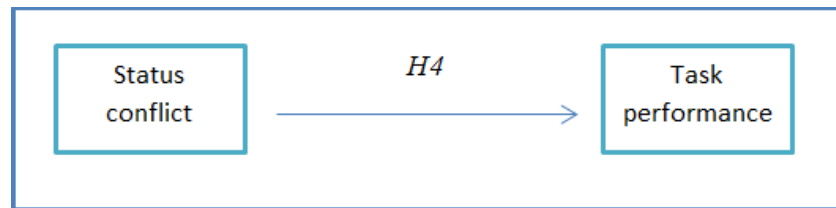
Figure 3.4: The Relationship between PC and TP

3.4.4 Status Conflict and Task Performance

Bendersky and Hays (2012) argue that scholars have neglected the fourth type of intragroup conflict, which they named “SC”. SC is defined as “disputes over people’s relative status positions in their group’s social hierarchy” (pp.323) (*ibid*). Several scholars claim that SC generates competitive behaviour among individuals and has more distributive effects on group performance. In addition, the characteristics of SC are inclined to affect information sharing negatively, which ultimately reflects on the group performance (Toma and Butera, 2009).

There is an explanation for the competitive characteristic of SC. Primarily, SC has a longer, more inherent impact than other categories of conflict due to the forms of dominance of SC interactions (Blau, 1964). Moreover, SC involves other co-workers more than the other dimensions of conflict due to the impact of the entire network on social relationships (Ridgeway and Walker, 1995). Therefore, it is more likely that increased competitiveness will affect the group processes and, consequently, prove detrimental to TP.

It seems that SC has a negative effect on performance as well. As Bendersky and Hays (2012) state, SC can affect the information sharing process among the group, which can eventually prove detrimental to TP. Hence, the discussion above led the author to hypothesise:

H4: Involvement in SC negatively affects TP in the context of the ESM environment**Figure 3.5:** The Relationship between SC and TP**3.5 The Moderator Effects of Digital Information on Intragroup Conflict in the ESM Environment**

Scholars have widely discussed the effects and contributions of moderator variables in the field of behavioural science (Dawson, 2014; Colquitt and Zapata-Phelan, 2007). Baron and Kenny (1986) define a moderator variable as a “*variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable*” (pp. 1174). Moderators play a vital role in the management, behavioural and social sciences due to their significant contribution to the body of knowledge. In general, the moderator variable should produce an association between two variables (independent and dependent) that either enhances or decreases the relationship (Dawson, 2014).

Colquitt and Zapata-Phelan (2007) clarify, in their well-organised taxonomy, the level of theoretical contribution by studying the effect of a new moderator on an existing relationship or process. Adding a new moderator to an existing relationship, which is linked with existed model, allocates this research in the high theoretical contribution area (*ibid*). Colquitt and Zapata-Phelan (2007) tracks the trend of theoretical contributions within academic articles over five decades, and one of the findings of this study asserts that introducing new moderator on existed relationships considers high theoretical contribution. Other scholars support this opinion and emphasis on the importance and the value of studying and introducing new moderator variables (Skarlicki *et al.*, 1999; Dawson, 2014; Gaskin, 2016). Figure 3.6 demonstrates the theoretical contribution of introducing a new moderator to existing relationships, which is categorised as expanding to knowledge and forms as a high theoretical contribution:

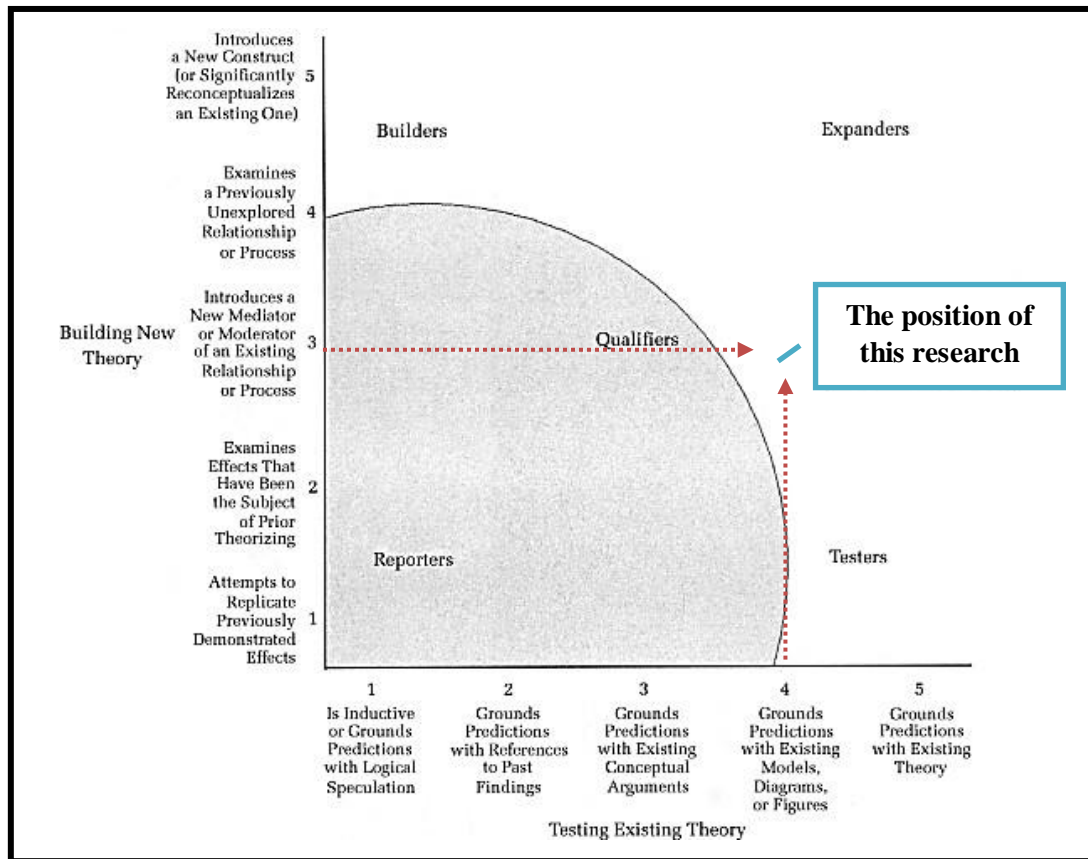


Figure 3.6: A Taxonomy of Theoretical Contributions for Empirical Articles
 Adopted and Modified from (Source: Colquitt and Zapata-Phelan, 2007)

Through reviewing several studies related to intragroup conflict and group outcomes, it emerged that several scholars have studied the effects of different moderators within this relationship (Jehn and Bendersky, 2003; de Wit *et al.*, 2012; Ordio Dimas and Lourenc, 2015), but none of them have studied the moderator effects of DIF level within organisations on intragroup conflict and TP. Recent research reveals the importance of studying the effect of DIF in the context of conflict management (Colbert *et al.*, 2016). Therefore, the authors of this research intend to contribute theoretically and empirically by filling this gap in the body of knowledge.

Digital information needs to be managed and implemented differently compared to classic and documentary information (Barr *et al.*, 2005). Nowadays, individuals search for information via search engines, and it requires a high level of digital skills to browse a tremendous amount of digital information. Therefore, an individual’s digital skills need to be robust in the workplace in order to be able to deal with the digitalised environment and, furthermore, maintain the

rhythm of the work in harmony with the standards of his/her co-workers. Briggs and Makice (2012) define digital fluency as “*An ability to reliably achieve desired outcomes through the usage of digital technology*” pp.64. However, the previous definition was very comprehensive. Thus, we found Barr *et al.*'s (2005) definition of DIF better suited to this research: DIF “*is the ability to find, evaluate and ethically use digital information efficiently and effectively*” pp.33. Nowadays, the usage of technology in a strategic manner requires participation from all levels of the organisation. As mentioned in Chapter 2, various scholars have identified different dimensions of DIF, such as its educational, demographic, psychological and social influences (Wang *et al.*, 2013). However, Çoklar *et al.* (2017) and Adıgüzel (2011) identify different dimensions, which were found to be more closely related to this research.

In order to elicit assumptions regarding the moderator effects of DIF, it is vital to underpin it and link it with the focal theory (Andersson *et al.*, 2014). As illustrated earlier, the aim of the research is to study the potential effects on the dominant response of intragroup conflict and TP due to the intervention of DIF. DCT (Baron, 1986) was found to support the constructs and notion of this research. The mass flow of digital information along with weak DIF might lead to misunderstanding and misinterpreting the information generated by the users in an ESM environment. DCT hypothesises that co-workers could face conflict when working with each other, due to distraction. As a result, the mass flow of digital information in an ESM environment might lead to conflict as well.

Scholars find that ICT impacts positively on the performance of individuals via accelerating accuracy and minimising the time required to fulfil tasks (Yu *et al.*, 2017). In particular, virtual platforms have a significant impact on group performance (Jimenez *et al.*, 2017). Indeed, ICT requires DIF among the employees if they are to use the generated information strategically and adequately (Briggs and Makice, 2012). Recent research has revealed that 21st century digital skills (or DIF) have a positive impact on the performance of individuals and organisations (Koc and Barut, 2016), which means that employing ICT without maintaining the level of DIF within the workforce will diminish the positive impact of ICT. Since, in this case, we selected ESM as an environment in which to test the impact of DIF in the context of conflict and performance, we hypothesise:

H5: DIF has a positive impact on TP in the ESM environment

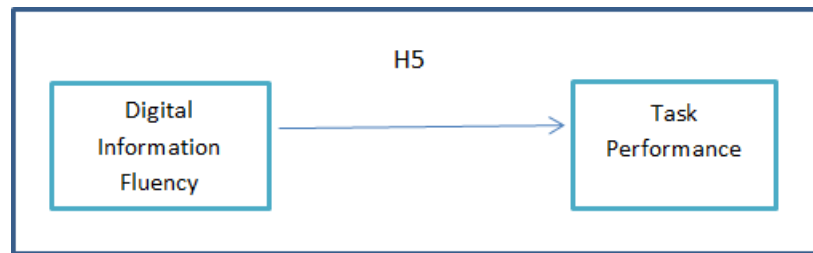


Figure 3.7: The Relationship between DIF and TP

Nowadays, digital workforces form part of organisations with other co-workers, who might feel uncomfortable about dealing with digital information and technology. A wide range of variation among the DIF levels of co-workers might lead to conflict (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). On the other hand, it is also essential to clarify the assumption of the interaction between the independent and dependent variables in the presence of the moderator. For example, since TC refers to mismatched viewpoints and ideas related to the task, this might interact negatively with TP due to the destructive impact on the proximal and distal group outcomes (De Dreu and Weingart, 2003b; Raver and Gelfand, 2005). Although several scholars have found the relationship between TC and performance to be complex in nature (de Wit *et al.*, 2012; Hanif *et al.*, 2016), we tend towards the assumption that TC impacts negatively on TP (Jehn, 1995; Carnevale and Probst, 1998).

Colbert *et al.* (2016) indicate that conflict might occur among co-workers if there exist huge variances in their DIF levels. In an environment in which ESM is implemented, idea sharing and collaboration need digital fluent individuals to employ this tool effectively and strategically (Leonardi *et al.*, 2013). Since ESM is considered a computer-mediated communication (CMC), the intervention of DIF regarding the association between TC and TP might inhibit the shift to personal issues and contain it in the task context (Martínez-Moreno *et al.*, 2012). CMC needs a high level of DIF in order to share ideas more effectively, which reflects positively on conflict management. Thus, the author hypothesised:

H5a: The negative relationship between TC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low

Similarly, the association between RC and TP is likely to be correlated negatively due to generating hostility (De dreu and van Kanippeberg, 2005), diminishing collaboration and

exchanging information (Nesterkin *et al.*, 2016; Jehn, 1995) and producing tension and negative emotions in the environment (Amason, 1996; Jehn, 1994). RC involves incompatibility between two or more members of the same group, due to personal issues (de Wit *et al.*, 2012). In general, RC has a significant negative impact on the group members, which generates a lack of trust, anxiety and ego threat (Dijkstra *et al.*, 2005). Hence, the author presumes that the relationship between RC and TP is negatively associated.

As illustrated earlier, the ESM environment needs solid digital competencies among the co-workers. (Leonardi *et al.*, 2013) explain that ESM, as a communication environment, helps to share ideas and work by using the features of social media. However, ESM alone does not generate harmony between employees (Jimenez *et al.*, 2017). Individuals in this environment need to develop their digital network skills in order to become coherent and able to communicate in harmony. Moreover, communicating through a virtual environment is likely to convey rigid feelings (Jimenez *et al.*, 2017). Therefore, once information is not being delivered clearly, its message might be misinterpreted. Moreover, some individuals dislike using technology, which might lead to incompatibility with workers who tend to depend on technology, such as ESM (Colbert *et al.*, 2016). Digital environment is vulnerable to misunderstanding and producing tension between the users due to lack of physical contact (Chen and Tseng, 2016). Uploading wrong file, information, image, symbol or even a jock in the wrong place or time could lead to relationship conflict (Nesterkin *et al.*, 2016; Jehn, 1995) which produces hostility and lack of trust.

Thus, we assume that better digital fluency within the employees of an organisation that employs ESM makes it easier to manage interpersonal relations in a digital environment. Therefore, we hypothesise:

H5b: The negative relationship between RC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low.

Moreover, disagreements among colleagues regarding the procedures or techniques associated with a specific task hinder task achievement and negatively affect outputs (De Wit *et al.*, 2012; Jehn, 1995). Behfar *et al.* (2011) state that engaging in PC within a group at work impairs the group performance. It is important to understand the reason for the negative effects of PC on performance. As Jehn and Bendersky (2003) assert, PC generates interpersonal influences

which reduce the degree of respect and ability among individuals at work. Thus, PC might develop into a personal issue and harm the group performance due to its long-term impact on the whole group (Greer *et al.*, 2008).

The digital nature of the ESM environment entails sharing expertise and procedures (Leonardi *et al.*, 2013), which might provoke process conflict. In other words, sharing information and knowledge through digital environment about the core business and procedures of an organisation requires awareness about the source of information, legal opinion, and authorization (Çoklar *et al.*, 2017 and Adıgüzel, 2011) to control process conflict via digital environment (De Wit *et al.*, 2012; Jehn, 1995). Undoubtedly, this kind of environment requires coherence in digital skills to remain symmetric. Otherwise, conflict and misunderstandings might arise among co-workers (Colbert *et al.*, 2016). Recent studies confirm the necessity of investigating social networks at work in the context of conflict (Korovyakovskaya and Chong, 2016; Yuan and Jing, 2014). Consequently, an ESM environment significantly depends on the employees' digital information skills to establish effective communication and avoid ambiguity. Hence, we hypothesise:

H5c: The negative relationship between PC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low

According to Bendersky and Hays (2012), SC generates a negative impact on information sharing and leads to alliances. In addition, SC promotes competitive behaviour among the group members (Kark and Van Dijk, 2007), which in turn negatively affects the group outputs. Since SC is related to the position in the social hierarchy, competitive behaviour might result (Bendersky and Hays, 2012). Therefore, SC is likely to be negatively associated with TP. Given that conflict arises in a workplace where ESM is employed, exchanging digital information depends on the co-workers' digital information skills. To clarify, during communication with another group member through ESM, the position of social hierarchy should be considered. The language and the way you approach someone is differ from senior to operative position. Therefore, the lack of digital literacy skills as an aspect of communication might lead to escalate SC and lead to lose trust. Once the information is not circulating and alliances begin to emerge, TP will ultimately be affected negatively. However, enhancing the co-workers' digital skills might reduce the SC due to the open climate underpinned by ESM. Therefore, the author hypothesises:

H5d: The negative relationship between SC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low

In summary, the previous hypotheses form the theoretical assumptions. One of the research objectives is to test and confirm these hypotheses and reveal a novel model. To do so, in the next chapter, the author defines the method, strategy and data collection instruments that were employed to extract the research's primary data. After clarifying the hypotheses of the research, Section 3.6 presents the theoretical model which forms the final proposal prior to the testing stage.

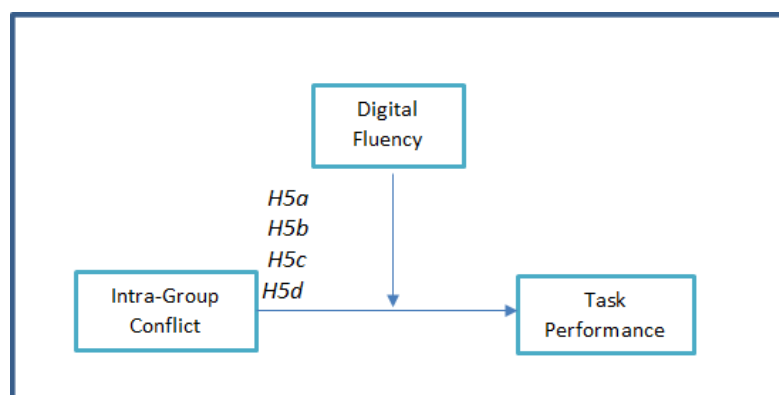


Figure 3.8: The Interventions of DIF on the Associations of Intragroup Conflict and TP

3.6 The Proposed Theoretical Model

The literature review made it possible to identify vital studies on the organisational conflict spectrum (Pondy, 1967; Jehn and Mannix, 2001; Jehn, 1997), and also helped to develop a clear understanding and vision regarding the concept of intragroup conflict and its dimensions (Rahim, 2001; Jehn, 2016; de Wit *et al.*, 2012). Therefore, the main building blocks of the theoretical model have been identified and consequently linked. By scrutinising the literature, this research identified a problematic that shows the necessity of researching conflict in the digital networking environment (Jimenez *et al.*, 2017; Korovyakovskaya and Chong 2016; Yuan and Jing 2014). Furthermore, (Colbert *et al.* 2016) stress the importance of considering the variances in DIF levels among co-workers as a new variable to be studied in the field of conflict management. Thus, the author attempts to contribute to the body of knowledge by studying the role of DIF in intragroup conflict and TP within the ESM environment.

Social science and management studies confirm that testing the role of a new moderator on an existing model is considered a high theoretical contribution (Dawson, 2014; Colquitt and Zapata-phelan, 2007). An assessment was made regarding which focal theories to adopt based on the key criteria, which led to the selection of DCT and OBMT. In the next page, this research presents the theoretical model of the research (Figure 3.9):

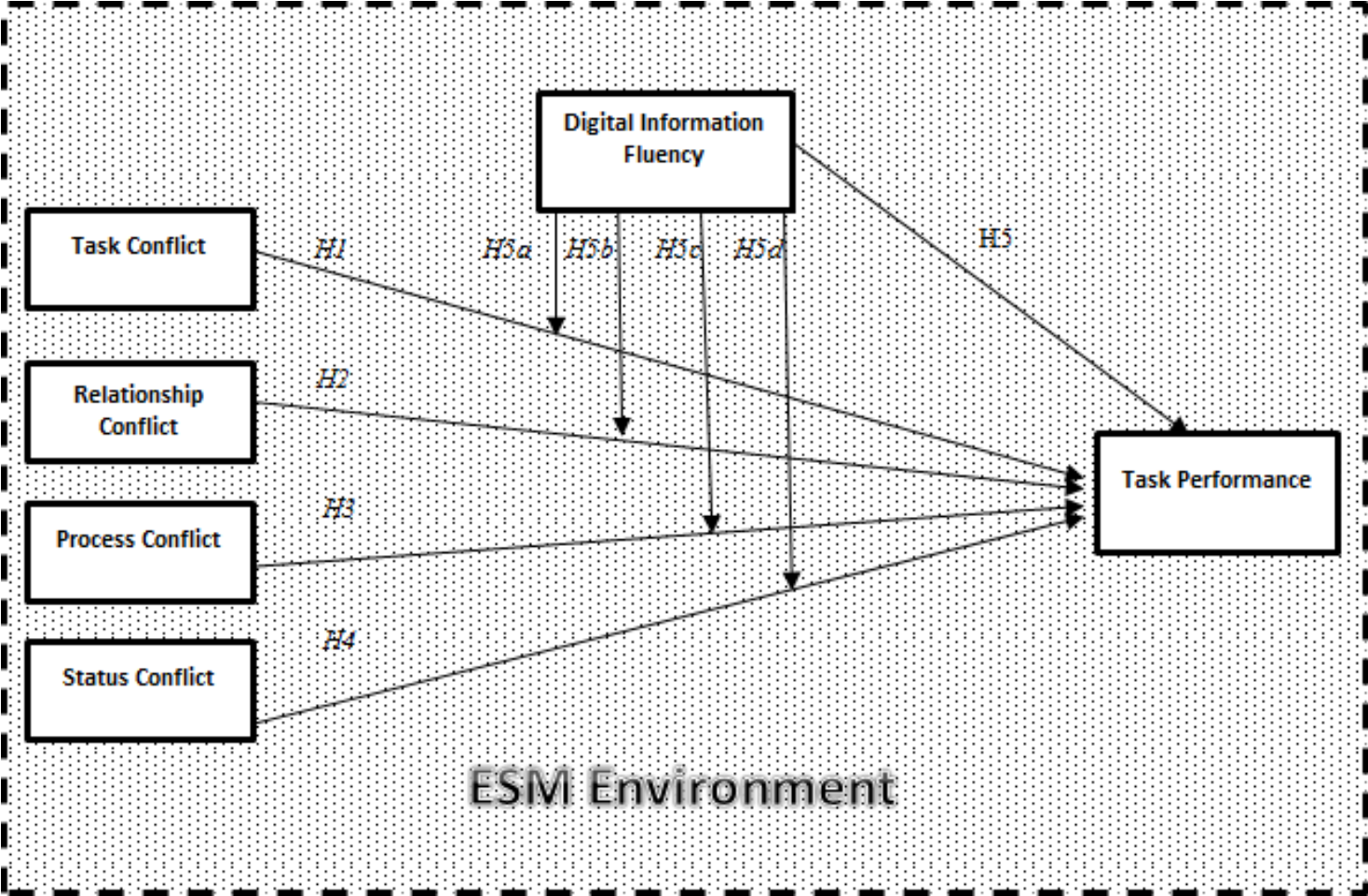


Figure 3.9: The Proposed Theoretical Model

Figure 3.9 shows that this research allocates clear model constructs and defines the hypotheses. To the best of the author's knowledge, intragroup conflict consists of four dimensions: TC, RC, PC and, more recently, SC (De Wit *et al.*, 2012; Bendersky and Hays, 2012; Jehn, 1995). This research finds that these dimensions are linked to group outcomes (Bendersky and Hays, 2012). Therefore, the author hypothesised that those four dimensions might have been related to task performance as well. This study supported the theoretical assumptions made in the literature, as explained earlier. Since workplaces have developed and become managed through social networks, such as ESM, so it is vital to study conflict within such environments. Since this research identifies the necessity of studying DIF in the context of intragroup conflict (Jimenez *et al.*, 2017; Colbert *et al.*, 2016), it is worth employing DIF in the research model as a moderator variable.

By using the rich picture model (see Figure 3.1), the author demonstrates the theories and stages that support the current theoretical model, such as DCT and OBMT. By undertaking a cross-checking analysis of related theories, DCT and OBMT were found to be applicable for this research (see Section 3.2). At the same time, this research finds clear support from the literature that supports the use of DCT and OBMT as the theoretical basis for similar domains (Liu *et al.*, 2017; Stajkovic and Luthans, 1997)

It is important to emphasise the context of the research, which is workplaces that implement ESM platforms as a form of internal communication. The research selects the ESM environment due to a lack of knowledge about conflict management in the social networking environment (Korovyakovskaya and Chong 2016; Yuan and Jing 2014). In addition, it investigates DIF organisations that require their members to be very familiar with high level communication technology, which form the sample for this study (Colbert *et al.*, 2016). The main purpose of managing conflict is to decrease the negative aspects and increase the positive aspects of conflict situations. Hence, this investigation might reveal new results that may help academics and practitioners to leverage DIF's conflict and collaboration aspects among groups working in an ESM environment.

3.7 Conclusion

This chapter presents the theoretical model for this research. The author assessed and evaluated the relative theories in order to select the focal theory. Moreover, the author detected any associations between the constructs in order to form the hypotheses. In addition, the author hypothesised the moderator's effect on the relationship between the intragroup conflicts dimensions and TP. The literature shows the necessity for investigating the interplay of DIF in conflict situations in an ESM context. This research aims to reveal a better understanding of the moderator effects of DIF on the relationship between intragroup conflict and TP in the ESM environment.

Based on the author's knowledge, this research is considered the first study to examine the interplay of DIF among individuals during conflict situations within the ESM context. Although the relationship between the dimensions of intragroup conflict and group outcomes have been studied widely (de Wit *et al.*, 2012; Bendersky and Hays, 2012; Jehn, 1997), the impact of DIF with regard to conflict and performance remains unexplored (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). On the other hand, as recommended by Korovyakovskaya and Chong (2016), there is a necessity for future research to study conflict situations and their effect on performance in the context of new technology usage within organisations, such as the ESM environment. Moreover, the literature reveals that scholars in the conflict management field have been criticised for overlooking the development in communication and digital aspects in their studies (Korovyakovskaya and Chong, 2016; Yuan and Jing 2014; Correia, 2008). In addition, there is a lack of research on intragroup conflict in Arab countries in general and Gulf Cooperation Council (GCC) countries in particular (Kilani *et al.*, 2015).

To conclude, by positing the research model, this chapter has fulfilled its aim, and the model is ready to be tested. The theoretical model aims to study combinations of different phenomena based on the aforementioned gap in the literature. The next chapter covers in detail the methodological aspects of this research.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

At the beginning of this chapter, a general demonstration of the methodologies employed in the fields of business and management is presented. Accordingly, the author assesses the philosophies and approaches in order to ascertain the most appropriate methodology for attaining the research's aim and objectives. Primarily, the purpose of this research is to examine the impact of DIF on the association between intragroup conflict and TP in the ESM environment. Based on the previous studies, the author develops a theoretical model which contains six constructs and nine hypotheses. To test the effects of DIF in the context of intragroup conflict, an online questionnaire was developed to measure these effects. The questionnaire was distributed within a major organisation that implants ESM. The participants were asked to respond to a number of items in order to measure the different constructs and examine their associations through the proposed theoretical model. This chapter outlines the data collection procedures and provides a brief description of the statistical analyses methods that were used in this research study.

This research employs a quantitative data collection method using a case study strategy. The questionnaire was developed on the basis of previously validated scales and questionnaire instruments. The wording technique for the questionnaire, that included items to measure the constructs of the proposed framework, was adapted as necessary from previous published literature to fit the context of this study. The data analyses for the final theoretical model will be carried out using Structured Equation Modelling (SEM) via Analysis of Moment Structures (AMOS) software. The major reason for adopting this statistical approach is that it allows the author to model and predict the correlations between the constructs in the hypothesised manner.

In the following sections, the methodology employed will be described in detail. Section 4.2 provides the philosophical perspective of this study. Section 4.3 describes the research approaches and the justification for their selection. Section 4.4 highlights the primary research methods and provides a justification for choosing a quantitative approach for the study. Section 4.5 defines the research strategy for this study. Section 4.6 emphasises the case study strategy, outlining its significance and types, together with a justification for adopting single a case and

also identifies the unit of analysis for the case. Section 4.7 outlines the sampling strategies. Section 4.8 defines the population and sample size. Section 4.9 illustrates the research design. Section 4.10 explains the usage of the questionnaire in research, the data collection procedures, the questionnaire design, the instrument measurements and the pilot testing of the surveys. Section 4.11 clarifies the process of the pilot study and its results. Section 4.12 presents the protocol for the case reports and the ethical consideration relevant to this study. Section 4.13 briefly discusses the data analyses technique used to validate the proposed theoretical model. Finally, Section 4.14 concludes this chapter.

4.2 The Research's Philosophical Perspective

A research philosophy indicates the beliefs and assumptions that help to identify the most appropriate method for collecting and analyzing the data (Bryman and Bell, 2015; Saunders *et al.*, 2015). Knowledge could be developed by formulating a new theory or developing a solution to a specific issue in a particular context. The research philosophy outlines the author's notions based on the angle of viewing the world. Accordingly, these assumptions help to identify the path to adopting a sufficient research strategy and the methods that form part of that strategy (Bryman and Bell, 2015; Saunders *et al.*, 2015).

Collis and Hussey (2009) state that there are two principal assumptions: the ontological assumption and the epistemological assumption. The ontological assumption represents the nature of reality, while the epistemological assumption represents an adequate knowledge in a field of study (Bryman and Bell, 2015; Saunders *et al.*, 2015). Moreover, Mayer (1997) asserts that the epistemological assumption is the major philosophical assumption that directs the research. Undoubtedly, the epistemology is critical for any research since it determines the selection of the most appropriate research strategy and methods for conducting empirical studies (Orlikowski and Baroudi, 1991). There are three substantial epistemologies that researchers can adopt: positivist, interpretive and critical (Straub *et al.*, 2005). Positivist tends to perceive the world objectively and illustrate it through quantifiable features as independent of the author's instruments, whereas interpretivists maintain the assumption that the social reality is as multiple and subjective as a mind set (Collis and Hussey, 2009). On the other hand, critical researchers have a tendency to evaluate the social reality under exploration critically and transform it accordingly (Orlikowski and Baroudi, 1991). In the following sections, all three epistemologies will be discussed in greater detail together with a

justification of the most suitable option for this current study.

4.2.1 Positivist

Collis and Hussey (2014) clarify that positivist researcher adopts the assumption that reality is viewed objectively, based on measurable properties, and is independent of the researcher's instruments. Predominantly, positivist researchers seek to test a theory in an attempt to generate an additional predictive understanding of the phenomenon. In sum, positivist researchers are "*premised on the existence of a priori fixed relationships within phenomena which are typically investigated with structured instrumentation*" (Orlikowski and Baroudi, 1991, pp. 5). Since positivist researchers tend to rely on the assumption that a social phenomenon is measurable, positivist research is more likely to be associated with quantitative methods and data (Collis and Hussey, 2014). This research investigates the moderator effects of DIF on intragroup conflict and its impact on TP. To achieve this, the author developed a theoretical model containing six measurable constructs along with nine hypotheses based on previous studies found in the literature. As a result, this study selected a positivist paradigm to conduct the research as the major focus is on testing a theoretical model in an attempt to increase our understanding of the impact of DIF on workplace conflict and so, ultimately, TP.

4.2.2 Interpretive

Interpretivism is a paradigm that relies on the belief and awareness that the social reality tends to be subjective and varied in nature. Thus, the social reality is influenced by the act of examining it (Collis and Hussey, 2009). This paradigm requires the belief that a strategy is required in order to be aware of the differences between individuals and objects of the natural sciences, and thus entails the social scientist realising the subjective meaning of social science (Bryman and Bell, 2007). Interpretist researchers presume that individuals construct and link their own subjective and intersubjective meanings as they interact with the real world around them. By the same token, Orlikowski and Baroudi (1991) underline that the purpose of these interpretive researchers is to comprehend a phenomenon through approaching the meanings that the participants allocate to it. To achieve this, the qualitative method has been used extensively among interpretivist researchers with the aim of grasping social phenomena. In our case, the interpretive paradigm is irrelevant to this research as it focuses on studying the complexity of social phenomena by adopting an interpretive vision, as opposed to the positivist

approach which focuses on measuring social phenomena statistically (Collis and Hussey, 2014). Since this research focuses on measuring a social phenomenon, that is, empirically validating a theoretical model consisting of nine measurable hypotheses, the interpretive paradigm is not the most suitable option here.

4.2.3 Critical

Confronting the contemporary situation of the social reality is usually associated with the critical theory approach (Rubin and Babbie, 2015). Critical theory has an important function in evaluating the social system and recognises any controversies which might exist in the construction of the research (Orlikowski and Baroudi, 1991). Moreover, Orlikowski and Baroudi (1991) explain that criticalists tend to conceptualise the social reality of power relationships, which is assumed to be an outcome produced by the people under investigation (Orlikowski and Baroudi, 1991). Also, the critical approach tends to interact with the participants in a modality that allows the respondents to demonstrate their thoughts against any change (Tolman and Brydon-Miller, 2001). Consequently, researchers who adopt a critical approach are often influenced by several social factors, such as political influence and culture (Orlikowski and Baroudi, 1991). As the current research aims to investigate the impact of DIF on intragroup conflict in the ESM environment, it is concluded that the critical paradigm is unsuitable for this study. To conclude this section, the primary epistemological paradigms have been reviewed, including the positive, interpretive and critical epistemologies. Finally, the positivist paradigm proved the most suitable for the current research, as it provides the appropriate assumptions and strategies for collecting the primary data and formulating the theoretical framework. In the following subsection, the research provides the rationale for adopting the positivist paradigm.

4.2.4 Rationale for Adopting the Positivist Paradigm

By reviewing several assumptions that are labelled the positivist, interpretivist and critical paradigms, the former was identified as the most appropriate for the current research. Therefore, this research considered the positivism philosophy to be more applicable and more in line with the assumptions made for the current study. Foremost, in harmony with the ontological theory of reality adopted by positivists (Collis and Hussey, 2009), it is assumed in this study that the reality of a phenomenon like intragroup conflict and its dimensions,

associated with the performance, already exists, regardless of our awareness of its existence. Secondly, in harmony with the epistemological assumption (Bryman and Bell, 2007), it is also assumed that investigating a concept like DIF, intragroup conflict or TP will not have any impact on the presence of those relationships. Thirdly, as mentioned by Collis and Hussy (2009) and Bryman and Bell (2007), researchers' choice of which research paradigm to apply is constrained by the necessity for that paradigm to suit the nature of the research and the research problem. Consequently, this research's aim is to investigate empirically the effects of employees' varying DIF levels on intragroup conflict and TP, and the positivism paradigm appears more consistent and supportive with regard to achieving this aim (Bryman and Bell, 2015; Saunders *et al.*, 2015).

The selection of an appropriate research paradigm is directed by the following factors (Cohen and Manion, 1994):

- The unity of the research's characteristics with the research paradigm of social science.
- The construction of the researchers' assumptions and how these are transformed into research hypotheses.
- The timescale and accessible sources for implementing the research project.
- The justification and evidence from the associated literature.

Taking these factors into consideration, the positivist paradigm was selected for this research. The primary reason for this choice was the fact that this study aims to test a moderating variable by using an existed theory. This intention led this research to recognise that it stands in the area of observable social reality. To achieve this aim, the research examines the hypothetical inter-relationships and links them to a set of dependent and independent variables. As Robson (2018) and Saunders *et al.* (2015) clarify, the central research questions will lead the author to the correct philosophy. The author believes that the positivist epistemology is an appropriate philosophy for studying these relationships, as it embraces a number of supporting data collection techniques (including case study and questionnaires in addition to other tools) that can supplement and extend the research project.

4.3 Research Approach

Although selecting the most suitable paradigm for research is critical, choosing the approach of the study is equally important (Robson, 2018; Saunders *et al.*, 2015). There are two key research approaches generally used by scholars: the deductive approach and the inductive approach (Bryman and Bell, 2007; Collis and Hussy, 2009).

4.3.1 The Deductive Approach

In general, by selecting a deductive approach, scholars employ well-established knowledge about a specific phenomenon and then develop the research hypotheses that will form the main topic for an empirical investigation during the ensuing phases of a research project (Bryman and Bell, 2007; Saunders *et al.*, 2015). Using the positivism paradigm will guide a scholar to rely on the available literature in order to develop a theory and hypotheses that require verification through the practice of statistical analysis (Collis and Hussy, 2009). In practical terms, the deductive research moves from broad to detailed knowledge (Collis and Hussy, 2009). As Bryman and Bell (2007) reveal, six phases are normally incorporated in the deductive approach: (1) theory, (2) hypothesis, (3) data collection, (4) findings, (5) hypothesis confirmation or rejection, and (6) revision of the theory. This process is described in detail in Figure 4.1 below:

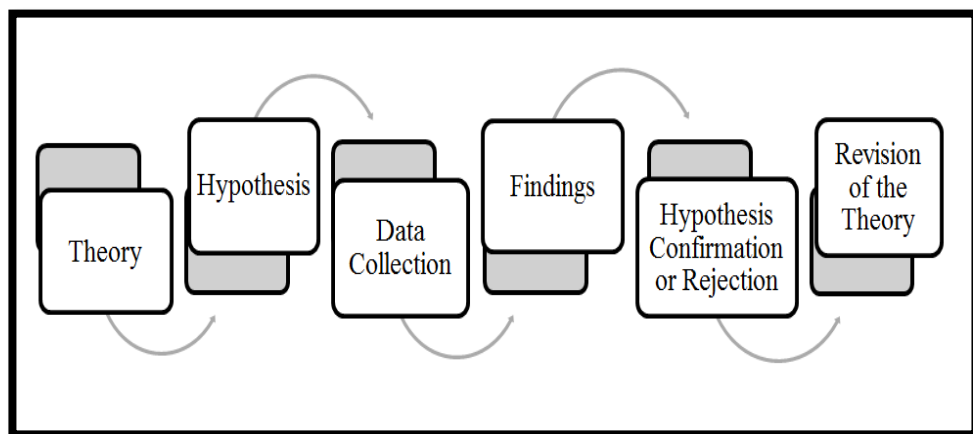


Figure 4.1 Phases of the Deductive Approach (*Source: Bryman and Bell, 2007, pp. 11*)

4.3.2 The Inductive Approach

Following the clarification of the deductive approach, this section briefly presents the inductive approach, which is oriented in the opposite direction to the deductive approach. In other words, scholars who adopt the inductive approach usually begin with real observations of a particular phenomenon and use the outputs to generate theory (Bryman and Bell, 2014). Hence, inductive approach adopters are more likely to rely on their own observations than a specific theory, which means that different patterns will formulate their theory. As Collis and Hussy (2009) assert, the inductive approach adheres to the following structure: observation and findings that provide a basis for the theory, which means that the dynamic of the inductive is from the specific to the general.

4.3.3 The Rationale for Adopting the Deductive Approach

It is essential to choose the structure or approach that best suits the nature of the research. Hence, a clear justification of this choice should be presented. This study posts the constructs of the research model (TC, RC, PC, SC, TP and DIF) based on the lenses of DCT and OBMT. Hence, this research already establishes based on a theoretical bases which matches the path of deductive approach. In a similar context, Collis and Hussy (2009) underline the necessity of selecting a research approach that will promote the attainment of the research aim and objectives. This research aims empirically to test and validate a theoretical model, the constructs of which are based on existing knowledge that helps to develop the associated hypotheses. Consequently, given the focus and nature of the current study, the deductive approach that underlines the measurement and empirical investigation of the theories and interactions between the constructs seem more appropriate than the inductive approach (Bryman and Bell, 2007; Saunders *et al.*, 2015). Moreover, this approach is more appropriate for use with a large population in order to allow the generalisation of the results in a similar context (Robson, 2018; Saunders *et al.*, 2015). Overall, these considerations justified the adoption of the deductive approach for this study.

4.4 Research Method

The literature on management studies' methodology reveals two primary research methods, categorised as quantitative and qualitative. As Bryman and Bell (2015) and Saunders *et al.* (2015) illustrate, some scholars conduct research by applying only one of these methods (Mono Method) while others use them jointly (Mix Method). The selection of the research method is related to the main question and the objectives of the research. In the following sections, these two key research methods will be demonstrated and then justified, based on evidence from the literature.

4.4.1 Qualitative Method

Qualitative research tends to explore and develop an understanding through interpreting individuals or groups phenomena (Creswell, 2009). Additionally, qualitative research stresses individuals' statements during the data collection and analysis stages (Bryman and Bell, 2007). Qualitative research is more likely to be associated with the inductive approach, where the theory is a result of research (Collis and Hussey, 2014). Likewise, Bryman and Bell (2011) explain how, under the inductive approach, the author extracts generalizable inferences from the perceptions or conclusions to shape a new theory. Generally, qualitative research is linked with the interpretivist philosophy, where researchers explore a phenomenon within its specific context, and accordingly employ an emerging design during the process (Collis and Hussey, 2014). Qualitative studies can choose from a selection of research strategies, which are categorised as: grounded theory, narrative research, case study and ethnography (Saunders *et al.*, 2015). However, some of the strategies that are usually associated with qualitative research, such as case study, may be suitable for some quantitative research (Yin, 2013).

4.4.2 Quantitative Method

Quantitative research tends to test theories by investigating the correlations between variables (Creswell, 2009). Also, quantitative research depends on statistics during the data collection and analysis stages (Bryman and Bell, 2007). Furthermore, it consolidates a deductive approach which shows clearly that the theory directs the research (Collis and Hussey, 2014). As mentioned earlier, adopting a deductive approach starts with selecting a theory related to the research hypothesis, which is followed by the data collection and findings stage, and ultimately confirms or rejects the hypotheses of the theory (Bryman and Bell, 2007).

In light of the quantitative approach, there is a linkage with positivism, which is principally an effort to test the theory in order to enhance the predictive understanding of the phenomenon (Robson, 2018; Saunders *et al.*, 2015). Collis and Hussey (2014) reveal that most quantitative studies involve experiments and surveys as the research strategies, but quantitative researchers can employ a case study strategy through using questionnaires if it fits the research's context, aim and main question (Saunders *et al.*, 2015; Bryman and Bell, 2015).

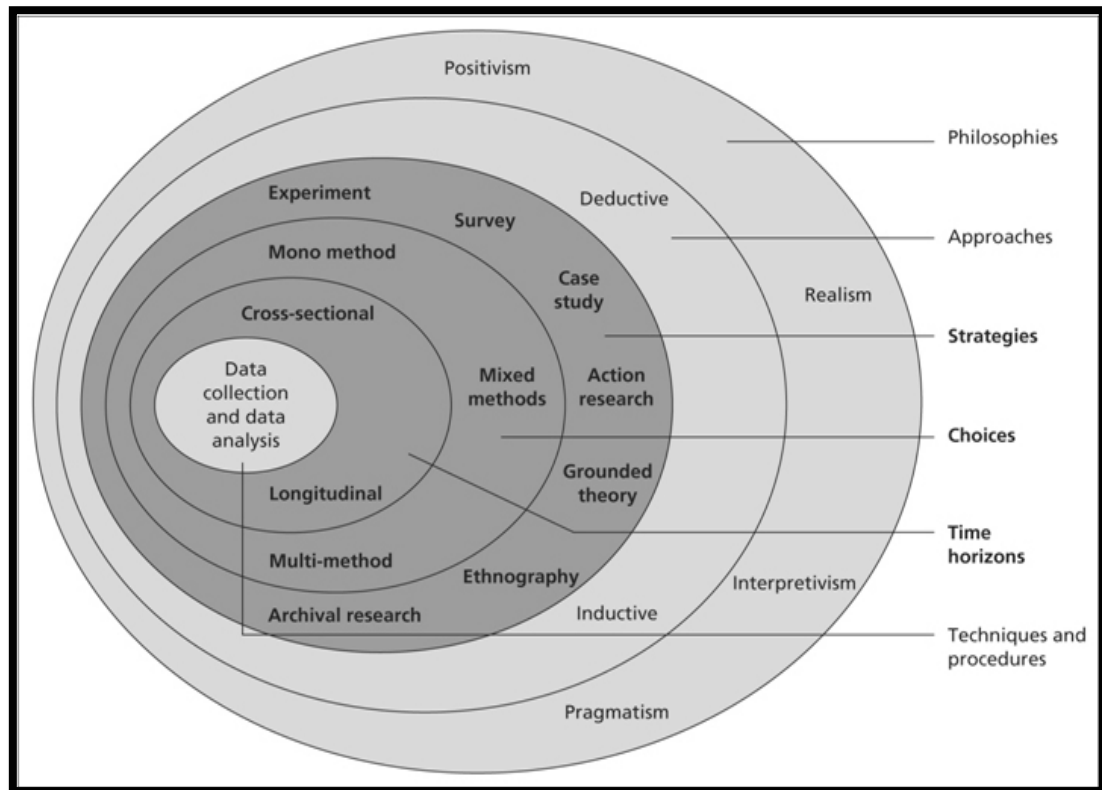


Figure 4. 2 Research Onion (*Source: Saunders et al., 2015*)

As demonstrated in Figure 4.2, Saunders *et al.* (2015) present the research onion, each layer of which represents an important aspect of the methodology. In addition, the research onion draws a clear distinction between mono method, mixed-method and multi-method research. However, these choices will eventually embed either quantitative or qualitative research, or a mixture of the two. As discussed earlier, the choice of method should be related to four areas: characteristics, the role of the theory, the research philosophy and the research strategy.

After evaluating the research philosophies, approaches and choices, the current research selects the quantitative method accompanied by a deductive approach. Under these approaches and

philosophies, it is important to emphasise that the intention is to test empirically nine hypotheses in order to identify whether they are confirmed or rejected. On the other hand, it is equally essential to note that the qualitative method is inadequate for this research as it does not involve collecting data initially and developing a theory ultimately. However, qualitative data might be suitable for future research after modifying the aim and research question. Moreover, the epistemological orientation of this investigation directs the author towards the positivist category. In light of this, the author allocates the objectives of this study, as one of the primary goals is to investigate the developed theoretical model to see if it can test the impact of employees' varying DIF levels on intragroup conflict. Therefore, the quantitative method fits this design. This research also developed measurement instruments for each of the six constructs (TC, RC, SC, PS, TP, and DIF), which were identified from prior studies, in order to develop a questionnaire to extract the data. The following section will provide a justification of the research method choice.

4.4.3 Rationale for Adopting the Quantitative Method

Quantitative research methods are a rational choice where the research outcomes will show if the theoretical assumptions are approved or declined. It is the choice of method which tends to apply statistical techniques to conclude if the hypotheses are valid, based on aggregated variables. Opinions and attitudes are demonstrated by numbers, which is recognised as a convincing feature for understanding the function of a specific concept. Considering the nature of an explanatory research question which is looking for numeric data, adopting the quantitative research method fits the context of the investigation (Robinson, 2018; Saunders *et al.*, 2015). Statistical applications are regularly used to conduct the data analysis, such as SPSS (Statistical Package for Social Sciences) (Creswell, 2003). Hence, quantitative methods have been found to support the testing of casual relationships concerning intragroup conflict and its dimensions (TC, RC, PC and SC), TP and DIF, as presented in Table 4.1.

As Table 4.1 shows, most of the previous studies that examined variables similar to those assessed in the current research apply questionnaires to extract their primary data. Using a questionnaire as an instrument is justified and has been identified as a suitable tool for extracting primary data for the variables studied in the current research. Equally importantly, questionnaires have been perceived as a sufficient tool for the same research variables. These variables have been tested in different countries and cultures by extracting data through

questionnaires. Additionally, the questionnaire as an instrument has shown resilience across various managerial levels. Thus, it is regarded as a flexible and reliable tool for the data collection stage.

Title	Construct(s) Related to the Current Research	Authors, Year	Sample Size	Context	Instrument
“The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance”	Intragroup conflict (TC and RC)	Jehn and Mannix, 2001	153 students	Three different business schools in the USA	Questionnaire survey (in three different time periods)
“Why is Your Team More Creative Than Mine? The Influence of Shared Mental Models on Intra-group Conflict, Team Creativity and Effectiveness”	Intragroup conflict (TC, RC, PC)	Santos <i>et al.</i> , 2015	735 Individuals	Management simulation	Questionnaire survey
“Status Conflict in Groups”	TC, RC, PC, SC and performance	Bendersky and Hays, 2012	Two samples: - 134 people - 240 people	Middle managers enrolled in a part-time MBA course at a West Coast University	Online questionnaire survey
“Information literacy and digital nativity as determinants of online Information search strategies”	DIF	Çoklar <i>et al.</i> , 2017	398 students volunteered to participate	2 Turkish universities	Questionnaire survey
“The relationship between transformational leadership, task performance and job characteristics”	TP	Bacha, 2014	100 Employees	Workers in an industry sector (in Northern France, Paris and its suburbs)	Questionnaire survey

Table 4. 1 Previous Studies that apply Quantitative Methods to Study Similar Constructs as the Current Research

4.5 Research Strategy

A research strategy reflects a plan that is applied by a scholar to facilitate and fulfill a research inquiry. Moreover, it is a methodological bond between the chosen philosophy and the subsequent selection of the methods for collecting and analysing the raw data (Saunders *et al.*, 2015). As a matter of fact, several research strategies could be suitable for management research, such as case study, experiment, survey, archival research, action research, grounded theory, ethnography, narrative inquiry, etc. (Saunders *et al.*, 2015). Collis and Hussey (2014) illustrate that the quantitative method is regularly linked with the survey and experiments strategies. However, the literature does not reveal any restrictions that prevent researchers from using the case study strategy along with the quantitative method if there is solid justification for this (Saunders *et al.*, 2015; Bryman and Bell, 2015; Yin, 2013).

Additionally, Saunders *et al.*, (2015) explicate that, most of the time, quantitative research is suitable for a cross-sectional time horizon. According to Bryman and Bell (2007), cross-sectional studies: “*entail the collection of data on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables, which are then examined to detect patterns of associations*” (pp.55). Also, this strategy is regularly consolidated with experiments and surveys to obtain a large dataset from a high-volume population in a cost-effective way (Saunders *et al.*, 2015). On the contrary, the author also concludes that it is possible to adopt the case study as a strategy under the quantitative method (Yin, 1994; Saunders *et al.*, 2015). By associating the quantitative research method with a case study strategy, a large number of individuals (working within major and international organisations) can be invited to participate in this study, which helps to produce a more in-depth investigation (Yin, 1994), not to mention the advantage of increasing the response rate since the participants are required to provide the necessary data only once (Collis and Hussy, 2014; Saunders *et al.*, 2015; Bryman and Bell, 2015).

4.6 Case study

This research matches the explanatory case study design based on the main research question (“what is...?”) (Yin, 2013). A case study strategy is a formulation for an empirical investigation which shows real-world concerns and recent topics. According to Gustafsson (2017), a case study can be defined as: “*an intensive study of a person, a group of people or a unit, which is aimed to generalise over several units*” (pp.2). On the other hand, case studies are fundamentally useful when the author is considering a sensitive, unique or critical topic (Saunders *et al.*, 2015). Investigating intragroup conflict is considered a sensitive area of investigation due to the complexity associated with obtaining accurate information from the organisation’s members (Rahim, 2010; Chen and Tseng, 2016). This research recognises that, when extracting data, especially those related to complex social phenomena such as intragroup conflict, case study emerges as the most appropriate strategy (Yin, 2013). Interestingly, both qualitative and quantitative research can adopt case study as the research strategy (Saunders *et al.*, 2015). However, in this study, a mono-quantitative method was selected to fit the case, the variable of the study and the primary research question.

Similarly, Robson (2002) describes case study as “*a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence*” (pp.178). The decision to select a case study strategy was taken in order to fulfill certain objects. Firstly, the author aims to attain a deep understanding of an organisational conflict phenomenon, with a particular focus on the intragroup level. Also, the employees’ DIF levels need to be investigated in an environment that provides the employees with an ability to utilise digital information on a daily basis. Therefore, ESM as an environment was chosen because it is considered one of the most recent ICT methods in the workplace, which generates a tremendous amount of digital information among the users (Leonardi *et al.*, 2013). In doing so, this research attempts to focus on a particular case in order to assess the impact of the employees’ DIF levels and their effects in real conflict situations within the ESM environment. Secondly, a substantial investigation is needed to assess the impact of DIF on intragroup conflict and TP in the ESM environment.

4.6.1 Case Study Types

Yin (2013) divides case studies into three categories, named explanatory, descriptive and exploratory. The most vital element that helps to specify the category of a case study is the research question. Hence, this study is regarded as an explanatory case study, since it concentrates on answering “What?” questions - What are the moderating effects of DIF on intragroup conflict within the ESM environment? Bryman and Bell (2015) and Saunders *et al.* (2015) confirm that explanatory studies are relevant and essential to understanding what is occurring and revealing new insights and relationships. Therefore, the author selected the category of case study to explain the phenomenon identified in the research question.

4.6.2 Single and Multiple Case Studies

A case study strategy leads to either single or multiple case approaches. It is crucial for the researchers to determine the volume of cases prior to the data collection phase. A single case helps the researchers to investigate a phenomenon that requires attention in a particular context as well as establish additional elaboration to define a problem (Saunders *et al.*, 2015; Bryman and Bell, 2015). The similarities between the factors within more than one case could stimulate the researchers to undertake a multiple case study strategy, which might make it possible to generalise the findings of the research (Saunders *et al.*, 2015; Bryman and Bell, 2015). Nevertheless, scholars should be aware that multiple case studies offer both benefits and challenges. Multiple case studies might be costly and need a long time to complete (Baxter and Jack, 2008). On the other hand, as stated by Siggelkow (2007), a single case study may be sufficient to investigate a phenomenon without the need to include multi cases. Dyer and Wilkins (1991) that claim single case studies might be preferable than multiple ones due to the better theoretical outcome. Where a scholar investigates one object (such as an individual from a group) or organisation (such as a major company), a single case study would be the proper selection (Yin, 2003). Dyer and Wilkins (1991) assert that, when a single case study is employed, the author can reinvestigate the previous theoretical relationships, which would illuminate broader aspects of the subject. In the following sections of this chapter, the single case study will be evaluated and justified as the research strategy adopted for the current research (see Section 4.6.4).

4.6.3 Unit of Analysis of the Research

It is vital to identify the case study unit of analysis considered in research. As Yin (2013) reveals, that units of analysis can portray an event, project, organisation, phenomenon or individual that represents the case study topic. Thus, the unit of analysis is crucial and should be identified during the early stages to keep the researcher focused and aware about what can be accomplished. The unit of analysis must reflect the case study and the central focus of the investigation. For this research, the units of analysis are the employees of an international communication company located in the Kingdom of Bahrain that has several branches in different countries (for confidentiality purposes this research labels the case ‘Organisation Y’). In other words, this research focuses on studying intragroup conflict from individual perspective not organisational point of view. Hence, the sample of research would be a combination between several hierarchy levels from Organisation Y. Also, the findings of the research would tackle individual conflict behavior. The employees of Organisation Y work as groups and use ESM on a daily basis to communicate and share digital information with each other. Hence, the ultimate unit analysis is the employees (see Section 4.8 for more details about Organisation Y).

4.6.4 Justification for Using a Single Case Combined with the Quantitative Method

As mentioned and justified earlier, the positivism paradigm and deductive approach are adopted in this research. Hence, positivist researchers tend to move from the general to the specific. As a result, positivists depend on relevant theories when developing the theoretical hypotheses to be tested via suitable statistical analyses (Collis and Hussey, 2009).

As discussed earlier, the aim of this research is to investigate the moderator effects of DIF on the association between intragroup conflict and TP in the context of the ESM environment. Therefore, the “What” research question leads to a focus on conducting an explanatory study. Saunders *et al.* (2015) reveal that an explanatory study aims to investigate the relationships between variables. Consequently, the author reviewed several studies in the literature and identified that the mono quantitative method was suitable for measuring the variables embedded in the research model. Furthermore, a quantitative method fits the nature of the research question and the aim of the research. Correspondingly, reviewing the methodology literature indicated that one suitable instrument for collecting the data for this research is “a questionnaire”. Since the author is looking to measure relations numerically, the questionnaire

is adequate for facilitating the process of converting the data into numerical data. Moreover, the regulated questions (items) would increase the confidence that the same level of interpretation was shared by all respondents (Robson, 2018). At the same time, the questionnaire will allow the author to explain in numerical terms the relationships between the model's constructs, which reflects the cause-and-effect of these relationships. Although questionnaires could be used solely as a data collection method, they can also be combined with other research instruments, if necessary (Saunders *et al.*, 2015; Bryman and Bell, 2015; Robson, 2018).

Intragroup conflict is considered a sensitive area of research (Rahim, 2010; Rahim, 2015; Chen and Tseng, 2016). Yin (2013) illustrates that it is better to study sensitive topics as a single case study due to their sensitivity and difficulty of gaining access to the research sites/participants. Moreover, the advantages of single case studies are that they are economical and less time-consuming than multiple case studies. The aim of the research and the sample criteria suits the category of a single case study. Since this research aims to investigate the effects of employees' varying DIF levels on the association between intragroup conflict and TP within an ESM environment, it is preferable to focus on a particular case and study those phenomena (DIF and intragroup conflict) within the same organisation. A single case study also offers more opportunity to gain a broader understanding of and explain a subject. Moreover, single case studies are adequate for expressing the existence of a phenomenon, such as a person or a group of people. In other words, a single case study can be applied to investigate old theoretical relationships and study new ones (Gustafsson, 2017).

The use of ESM or Enterprise 2.0 technologies by firms for work purposes is still relatively limited in the GCC in general and in Kingdom of Bahrain in particular. Such environments tend to be applied by large, significant companies that embrace new technology to engage with their employees, as emphasised in the literature review (Leonardi *et al.*, 2013; Jimenez *et al.*, 2017). Hence, finding organisations that implement this environment for similar purposes in Bahrain was challenging. Moreover, the aim to study intragroup conflict in the ESM environment made this even more challenging. Although the current case granted the author permission to extract data from the whole organisation and its branches internationally, it was difficult to convince the employees in different locations to participate.

Yin (1994) claims that single case studies can play a significant role in testing theories about

inchoate concepts. Yin's approach depends on pattern matching as a fundamental tool, where the outputs are linked to existing knowledge by forming a theoretical framework. Moreover, Yin (2013) claims, along with Sammaddar and Kadiyala (2006), that theoretical comprehension can be established by weighing the conclusions of one case study with those reported by early studies. This practice of repetition, combined with a careful consideration of the factors that are common or different, can provide an adequate practice for developing comprehension of the implied causal factors.

Notably, multiple case advocates claim that the adoption of different case studies offers an ability to compare cases, which is not usually attainable with a single case (Eisenhardt, 1989; Gable, 1994). Nevertheless, even with a single case study, it is sometimes achievable to assort the findings by time (as the research progresses) or place (different sites and affiliated units). Also, Eisenhardt (1989) promotes using at least four case studies for an academic project, on the grounds that using fewer than this will not enrich the research results with a broader explanatory potential. However, Dyer and Wilkins (1991) answer Eisenhardt's argument by referring to social science researchers who have embraced single case studies which consider significant studies (Kanter, 1977; Gouldner, 1954), arguing that these researchers have vastly improved and advanced their respective disciplines (Dyer and Wilkins, 1991). Thus, it appears overly simplistic to support Eisenhardt's (1989) argument without critical thought. Although single case study certainly offers novel insights and acts as a prospector for multiple case studies, awareness should always be employed regarding the extent of explanatory power is input in a single case study.

In fact, the discussion around the significance of single or multiple cases is slightly abstract in nature. Scholars who defend single case studies regularly adopt a practical view. In other words, they consider this design to be a valid path for generating original information and reasonably avoiding difficulty of access. As mentioned earlier, a single case study draws heavily on previous studies' findings in an attempt to generalise its results. Moreover, a single case study offers the benefit of providing richness of detail, which makes it a valid research approach (Dyer and Wilkins, 1991).

Dyer and Wilkins (1991) assert that the findings from a single study can be more beneficial than those where multiple studies were applied. In general, the ability to prioritise the richness of data over a capacity for comparing multi cases and explanatory power are advantages that a

single case study can offer over multi-case studies. The importance of allocating a minimum number of case studies is not greater than enriching the discipline with valuable information. Gable (1994) and Eisenhardt (1989)'s views make research inflexible. Hence, this thesis reflects on the work of Dyer and Wilkins (1991) regarding research method and case study adoption. Consequently, a single in-depth case study is selected.

The current case study discusses a research problem which needs investigation in-depth since it is not commonly addressed in the literature (Collbert *et al.*, 2016). As already explained, there is a lack of knowledge regarding the leverage of digital information fluency among co-workers with regard to intra-group conflict (Collbert *et al.*, 2016; Jimenez *et al.*, 2017; Korovyakovskaya and Chong 2016; Yuan and Jing 2014). Since workplaces are rapidly employing new technology, such as ESM, it is vital to study these phenomena. The theoretical model was established by the empirical data and findings. Therefore, this study will provide new insights into the normative literature and help scholars and top management to achieve a better understanding of the impact of DIF on conflict in the ESM environment. Ultimately, this will unquestionably reveal significant future research insights into this field.

4.7 Sampling Strategy

The main purpose of a sampling process is to extract the right portion from a particular population so that they may be investigated and the findings of the investigation will reflect the broader population (Burns, 2000). According to Saunders *et al.* (2015), a sample represents a portion of a larger population, whether it is representative or not. A population is described as an accumulation of cases from which a sample is extracted (Bryman and Bell, 2015). As stated earlier, since this research adopts a single case study research strategy, the population of this research is all of the employees who work for Organisation Y and its affiliated branches, at all managerial levels.

It is unfeasible to collect data from all staff members of a large and international company. The challenges that might affect any researcher if he/she plans to cover the whole population are the limitation of time, funding restrictions and difficulties in gaining access. However, it is possible to implement the correct sampling strategy in order to extract a representative sample, which will reflect positively on the time management of the author when designing and piloting the instruments for collecting the data. Thus, this study reviews these options/strategies in order

to choose the most appropriate from among them. Based on the literature, there are two common sampling techniques: probability/representative sampling and non-probability sampling.

The different types of probability sampling are: simple random, stratified, systematic, and cluster sampling (Saunders *et al.*, 2015; Oates, 2006; Churchill, 1995). Probability sampling indicates equality in each case within the population which means that they all have the same probability of being selected. On the contrary, non-probability sampling indicates an unknown probability of a particular case being selected from the whole population (Saunders *et al.*, 2015; Bryman and Bell, 2011). Non-probability sampling embraces judgment, snowball, quota and convenience sampling (Bryman and Bell, 2011).

Based on this distinction, this research finds non-probability sampling to be the most appropriate path to follow. Since this research selected as the case study a large company with a high volume of employees, the probability of extracting data from all the staff members will not be equal. In fact, the nature of the case study and sensitivity of the topic left the author little choice when selecting the sampling strategy. Due to the fact that access has been granted to collect data from a large international company, non-probability sampling, and the convenience technique in particular, were the most adequate choice.

This research found that the convenience technique was the best choice for the sampling stage due to the absence of a sampling frame (Saunders *et al.*, 2015; Reynolds *et al.*, 2003). The selection of convenience sampling for this research can be justified by the flexibility and ease it provides regarding extracting data from the targeted population. Moreover, this research aims to study the effects of DIF levels on intragroup conflict in an ESM environment. Such a sensitive topic as internal conflict within an organisation is considered highly confidential, in most cases, and participation was voluntary. In such circumstances, the author recognises that the convenience technique provides the best fit for this research. Furthermore, the distribution of the participants in different branches both locally and internationally was considered a challenge with regard to collecting the data. Fortunately, Organisation Y agreed to distribute an online questionnaire via their Human Resources Department. Hence, the research participants were those who were accessible based on the research's available resources. As a result of the aforementioned circumstances surrounding the current research, the convenient sampling technique was selected.

Figure 4.3 outlines the branches of the sampling techniques and the selection for this research:

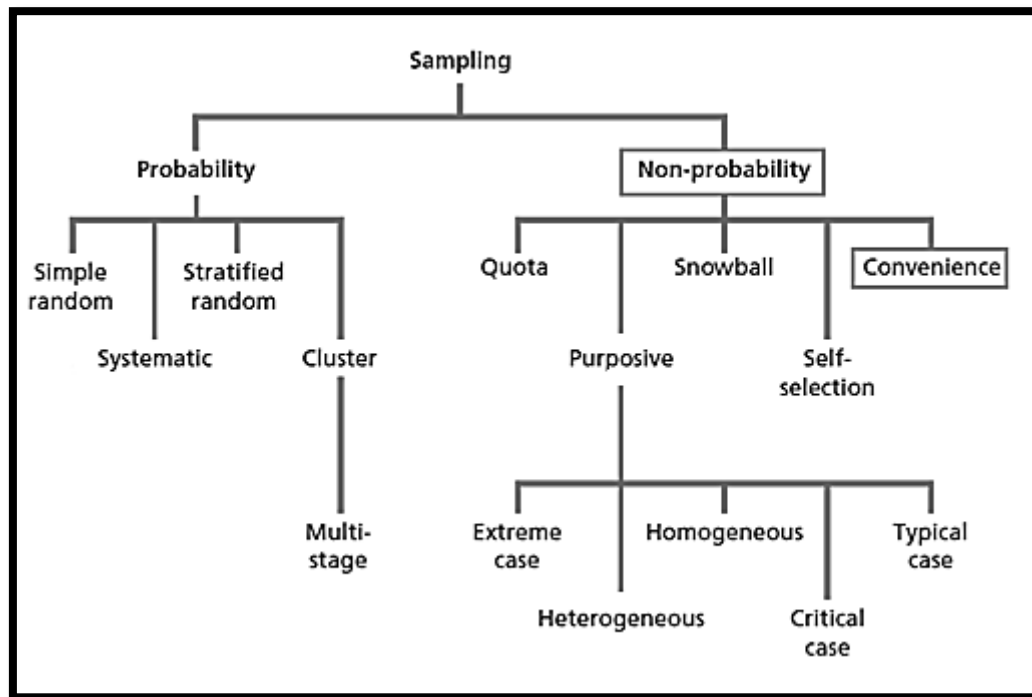


Figure 4.3 The Selection of Sampling Strategy

(Source: Saunders et al., 2015)

4.8 Background of the Case Study, Population and Sample Size of the Research

As introduced previously, a single case study is the chosen research strategy for this study. Accordingly, the population of this study is employees listed as staff members at all hierarchical levels in Organisation Y. In this section, the research provides a background to the case study to clarify its characteristics. The case study is as an international communications company that operates in the Middle East, North Africa, Europe, the Indian Ocean and South America. In addition, it has affiliates and subsidiaries in Saudi Arabia, Egypt, Yamen, Jordan, the Maldives, Jersey, Kuwait and Bahrain. Organisation Y was founded in 1981 and the latest published statistics in 2017 show that it has around 1,500 employees at its headquarters alone, which is located in the Kingdom of Bahrain. Organisation Y is considered one of the leading enterprises in the field of telecommunication services and provides several facilities for its customers, such as communication solutions, broadband, mobile, fixed line services, etc. Organisation Y serves around 9 million customers around the global. One of the main reasons for selecting this case is its leading position in ICT among other companies and, more importantly, the company

employs an ESM environment (Chatter) amongst all of its staff members and branches. In addition, the Kingdom of Bahrain, as the main context of its operation, is considered the top of the list among regional countries for ICT (see Table 4.2).

Regional IDI Rank	Economy	IDI	Global IDI Rank
1	Bahrain	7.60	31
2	Qatar	7.21	39
3	UAE	7.21	40
4	Saudi Arabia	6.67	54
5	Oman	6.43	62
6	Lebanon	6.30	64
7	Jordan	6.00	70
8	Kuwait	5.98	71
9	Tunisia	4.82	99
10	Morocco	4.77	100
11	Algeria	4.67	102
12	Egypt	4.63	103
13	Libya	4.11	115
14	Palestine	3.55	123
15	Syria	3.34	126
16	Sudan	2.55	145
17	Mauritania	2.26	151
18	Djibouti	1.98	158

Table 4.2: Arab state ranking according to the 2017 Global ICT Development Index

(Source: *ICT Development Index, 2017*)

Since all of the employees in Organisation Y have access to the ESM environment, all of the employees of the organisation are considered the population of this research (+1500 employees across all subsidiaries and affiliations). This research aims to investigate the effects of the varying DIF levels among the employees on the relationship between intragroup conflict and TP in the ESM environment. Hence, this research focuses on a single case that has a high level communication technology environment that operates on a daily basis. As a result, it is possible to study the employee's DIF levels and intragroup conflict.

Determining the sample size is vital in all statistical analysis. Luck and Rubin (1987) asserted that, the more advanced the statistical analysis, the larger the sample size required. Hence, the sample size needed for this study was calculated based on the selected statistical analysis

technique, which is Structural Equation Modelling (SEM). SEM does not differ from other statistical applications in requiring an appropriate sample size to achieve reliable estimates (Hair *et al.*, 2010).

Allocating the sample size involves determining the quantity of examined units to consolidate into a statistical sample. Regarding the sample size, Robson (2002) affirms that a large sample size is needed to overcome the expected errors that may occur when generalising the findings. To estimate the minimum sample size, Saunders *et al.* (2015) present the following formula as a first step:

Below is the equation that helped to allocate the minimum sample size:

$$\mathbf{n = p\% * q\% * [z/e\%]^2}$$

Where:

n = Minimum sample size desired

p% = Percentage related to the specified category

q% = Percentage unrelated to the specified category

z = Value corresponding to the level of confidence desired

e% = Margin of error desired

The speculation and substitution of the proportions and the level of confidence linked with *z* values are as follows:

(*p* = 50; *q* = 50; *z* = 1.96; *e* = 5) (See Saunders *et al.*, 2015).

To determine the minimum sample size required, these figures were consolidated into the following equation:

$$n = 50 * 50 * [1.96/5]^2$$

$$n = 384$$

Consequently, the minimum sample size was found to be **384**.

$$\mathbf{n^a = [n * 100] / re\%}$$

Where:

n^a = Actual sample size desired

n = Minimum sample size

re % = The percentage of the pilot study rate

The lowest sample size was measured, and it was found that a total of 384 participants from Organisation Y was needed to obtain the minimum number demanded, which supports the argument regarding the minimum sample size recommended (i.e. not less than 300) for a statistical analysis (Robinson, 2018). On the other hand, the response rate for the pilot test was 38.8% (for more details on the pilot test result, see below). These two values were combined into the following equation:

$$n^a = [384 * 100] / 38.8$$

$$\mathbf{n^a = 989.69}$$

Based on the above formula, the single case should encompass ≥ 990 individuals. Since Organisation Y's has 1,500 (i.e. > 990) registered employees in total, the actual sample size (population) of Organisation Y is suitable for this research. Thereafter, an online questionnaire was distributed through the HR department, targeting a minimum of 384 participants from Organisation Y for this empirical research (see Chapter 5 for the total number of participants in this research).

4.9 Research Design

As reported by Saunders *et al.* (2015), research design represents a comprehensive plan that a researcher will follow to answer the main research question. Collis and Hussey (1997) asserted on Vogt's research design definition as "*science (and art) of planning procedures for conducting studies to get most valid findings*" (Vogt, 1993, pp.196). A comprehensive plan is applied by the author to control and direct the study. This plan will incorporate a defined objective based on the research questions and also designate the sources of data collection, types of data analysis and any ethical concerns (Saunders *et al.*, 2015). The comprehensive plan for this research contains three phases: 1- research design, 2- data collection and 3- data analysis. First, in the research design phase, the author reviewed the literature on organisational conflict in an attempt to link it with DIF. This enabled the author to identify a lack of knowledge about the impact of DIF in the context of conflict management.

Subsequently, a theoretical model was developed whereby nine hypotheses were proposed. The case study was identified as the research strategy for this research, as justified previously. The second phase was the data collection phase, in which a pilot study was conducted to examine

the reliability and validity of the constructs. Thereafter, the author developed the questionnaire accordingly and presented the final questionnaire. The last and final phase of this research was to analyse and discuss the findings of the data by utilising the SEM technique. The result of this comprehensive plan enabled this study to achieve the aim and objectives outlined in Chapter 1. A summary of the research plan is presented in Figure 4.4 below:

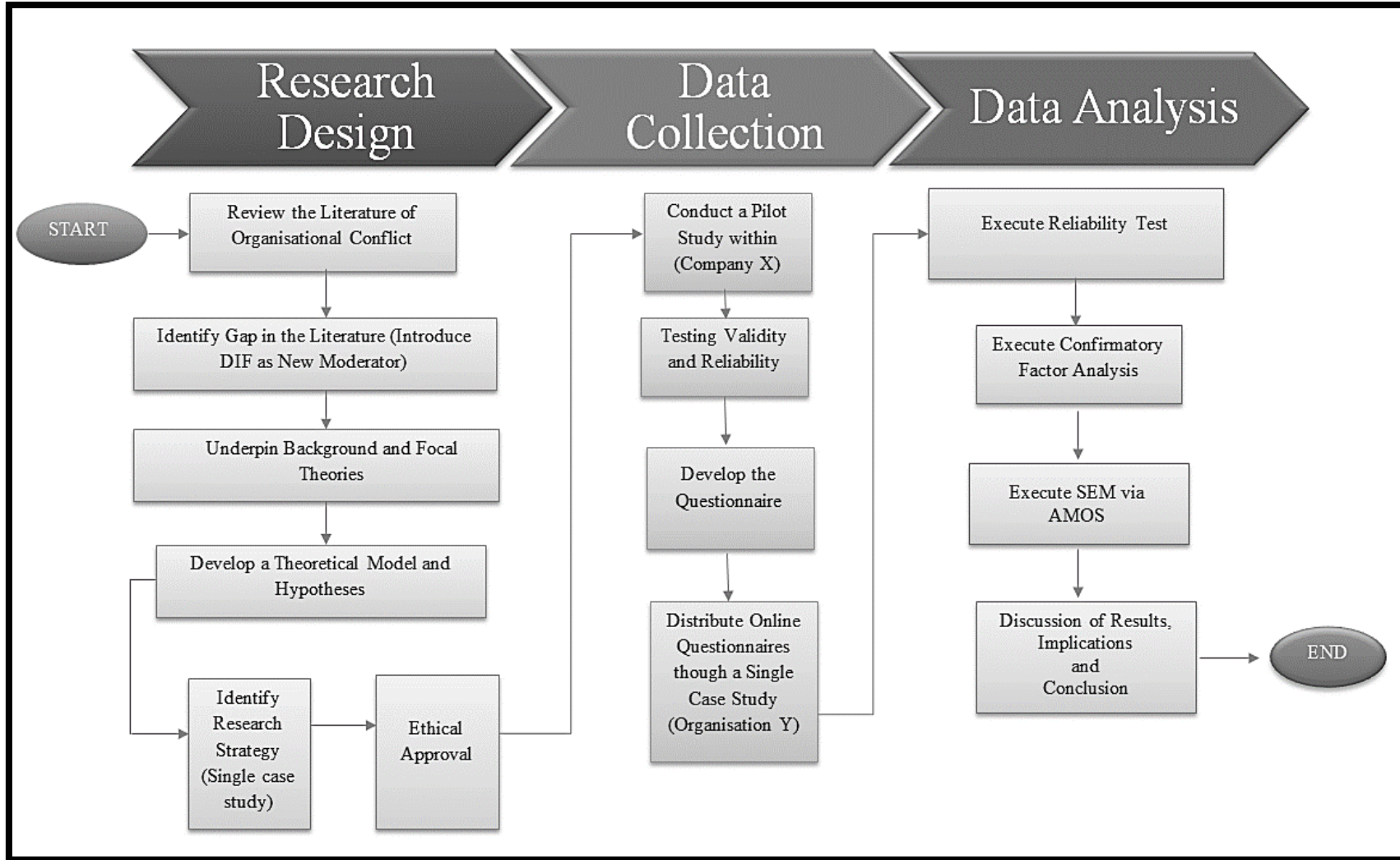


Figure 4.4: Research Design

4.10 Questionnaire as a Data Collection Instrument

The questionnaire is one of the most common instruments employed to collect primary data (Robinson, 2018; Saunders *et al.*, 2015). This research adopts the questionnaire to extract data from the case study due to the necessity of collecting data from a large population and the advantage of converting the data into a numeric set. Therefore, this research needs a data collection instrument which can save time and money based on the resources available (Saunders *et al.*, 2015; Deutskens *et al.*, 2006). Moreover, converting the items/questions into codes is considered relatively fast and easy compared to other tools, which reflects on the analyses stage (Gray, 2014). Since this research approached a large company, a questionnaire was the most appropriate instrument for contacting hundreds or even thousands of respondents without high cost. In contrast, conducting interviews would have been challenging, due to the difficulties of gaining approval from an organisation and managing the time for both the interviewees and the interviewer.

The use of a questionnaire overcomes these challenges, since respondents can select a suitable time and place for their participation. Hence, this research considered all of the above reasons and found the questionnaire to be a sufficient tool for collecting the primary data for this research (Robinson, 2018). Designing a questionnaire is undoubtedly a science (Robinson, 2018; Saunders *et al.*, 2015). It is important to realise that the design of the questionnaire must be tested due to its effects on the response rate, reliability and validity of the data (Saunders *et al.*, 2015).

The layout of a questionnaire varies according to how it is administered and collected. As reported by Robinson (2018) and Saunders *et al.* (2015), there are two ways of extracting data via a questionnaire: 1- Self-completed, and 2- Interviewer-completed. The second type refers to questionnaires where interviewers report the answers of each respondent. In contrast, self-completed questionnaires relate to questionnaires that are completed by the participants themselves. Interviewer-completed questionnaires include telephone questionnaires and structured interviews. Self-completed questionnaires include web-based, postal or mail, intranet mediated and delivery and collection questionnaires.

This research adopts web-based questionnaires as this type of questionnaire provides various sets of digital forms for developing the questionnaire that are not accessible when using traditional paper-based formats (Gray, 2014). Web-based tools accommodate the use of pop-up guidance boxes, drop-down lists, color and customised fonts. Moreover, the web-based questionnaire supports the data collection stage in terms of ease and access due to the large population (Gray, 2014).

On the other hand, the research case study (Organisation Y) is considered an international company which has branches in various countries. Hence, this research needs an instrument that can be implemented with ease in different geographical locations. The web-based questionnaire makes it possible to cover a target population despite the wide geographical area involved (Van Selm and Jankowski, 2006). Therefore, this research finds the web-based questionnaire suitable for this particular case study, as it offers a quick way to distribute, collect and manage the data from the participants (Lefever *et al.*, 2007; Duffy, *et al.*, 2005).

4.10.1 Data Collection Procedures

The main rule of data collection is to collect the views and information from the targeted population to facilitate answering the research question (Churchill, 1987). There are several ways of collecting data, which can be implemented individually or in combination (Cooper and Schindler, 2001; Sekaran, 2000; Zikmund, 2000; Saunders *et al.*, 2015). The literature identifies a variety of different data collection tools, such as telephone calls, face-to-face meetings, post, online questionnaires, etc. The current research employs an online questionnaire to collect the primary data, which is compatible with previous research in the field of conflict management (Bendersky and Hays, 2012). An online questionnaire makes it possible to collect data in a flexible, accurate, fast and cost-effective manner (Robinson, 2018; Saunders *et al.*, 2015; Lefever *et al.*, 2007; Duffy, *et al.*, 2005).

The author approached five large companies in the Kingdom of Bahrain that matched the criteria of the current research (large companies with branches in different geographical locations that employ an ESM environment). As a result, three firms officially rejected the invitation, one firm did not respond and only one organisation (Organisation Y) accepted the

offer (on condition that the names of the company and the staff members would remain anonymous). As mentioned before, the topic of the research is sensitive for the majority of companies, so it was challenging to find the perfect case study. The communication process with Organisation Y was documented by sending an official email to their PR and HR departments. This email included an official request letter to gain access, notes about ethical approval (The Research Ethics Committee, Brunel University, London), and a sample questionnaire and participant information sheet). Thereafter, access was granted by the CEO and General Manager of the HR Department. Once the population of the case study had been identified, the author sent a hyperlink to Organisation Y's HR Department so that it could distribute the online questionnaires (Google Forms) among its employees.

The online questionnaires were administered uniformly through the author and Organisation Y's HR Department. The online questionnaire was sent to 1,500 employees, all of whom have access to ESM (Chatter). The response rate of the participants, their profile and their hierarchical level are presented in Chapter 5.

4.10.2 Instrument Measurements

Six data collection instruments were adapted and employed in the study; namely, TC (Janssen *et al.*, 1999; Jehn, 1995), RC (Janssen *et al.*, 1999; Jehn, 1995), PC (Jehn, 1997; Shah and Jehn, 1993; Jehn *et al.*, 2008), SC (Bendersky and Hays, 2012), TP (Williams and Anderson, 1991; Koopmans *et al.*, 2013) and DIF (Koc and Barut, 2016; Çoklar *et al.*, 2017). This research follows the guide provided by (Robinson, 2018) in developing the data collection instruments.

The TC and RC scales were measured based on seven and nine items respectively. The scales were adapted from (Janssen *et al.*, 1999; Jehn, 1995). Jehn (1995) developed a scale that included eight items for measuring intragroup conflict (task and relationship dimensions). For the TC and RC scales developed by Jehn (1995), the Cronbach's alpha value was 0.92 and 0.87, respectively, which demonstrates the high reliability of the scales. Accordingly, Janssen *et al.* (1999) adapted the original TC and RC scales (Jehn, 1995), and developed 11 items. The current study adapts both scales (Janssen *et al.*, 1999; Jehn, 1995), and adopts a 5-point Likert scale to measure TC and RC, (1=*strongly disagree* and 5=*strongly agree*) and (1=*none* and 5=*a lot*), respectively (see Tables 4.3 and 4.4, respectively).

Items Code	Questions/Items
TC1	1. In my workplace, there is exaggerated disagreement regarding the work being done.
TC2	2. Most of the members in my workplace experience a mismatch of ideas.
TC3	3. The differences of opinion in my workplace are obvious.
TC4	4. There are disagreements within my workplace about the task I am working on.
TC5	5. Most of the members in my workplace agree on the path of the task from the beginning.
TC6	6. We rarely have matching ideas on the subjects that my colleagues are involved in.
TC7	7. There is a mismatch of exceptions rather than rules.

Table 4.3: Task Conflict Measurement

Items Code	Questions/Items
RC1	1. How many personality conflicts are evident in your organisation?
RC2	2. How much friction is there among the members of your organisation?
RC3	3. How much tension is there among the members of your organisation?
RC4	4. How much emotional conflict is there among the members of your organisation?
RC5	5. The personal relationships are always excellent.
RC6	6. Some colleagues visibly dislike each other.
RC7	7. The tension between some colleagues is sometimes painful.
RC8	8. Some colleagues do not get along personally.
RC9	9. How far do you cope within the atmosphere in the workplace?

Table 4.4: Relationship Conflict Measurement

The PC scale was employed to measure the disagreement between the group members regarding task accomplishment, delegation and logistics within the work unit (Jehn, 1997). In this study, the author adapted a PC scale from a variety of scholars (Jehn, 1997; Shah and Jehn, 1993; Jehn *et al.*, 2008). As a result, this research employed a developed scale that included five items, measured by a 5-point Likert scale (1=*never* and 5=*always*). Shah and Jehn (1993) tested the reliability and validity of the PC scale and found it to have a sufficient level of reliability, with a Cronbach's alpha of 0.83 (see Table 4.5).

Items Code	Questions/Items
PC1	1. My colleagues disagree about the resource allocation in the organisation where I work.
PC2	2. I observe incompatibilities in my organisation regarding task responsibilities.
PC3	3. My colleagues..... disagree about how to complete a certain task.
PC4	4. I notice conflict about who should do what in our organisation.
PC5	5. Agreeing on the process of any task is the case among my colleagues.

Table 4.5: Process Conflict Measurement

Recently, Bendersky and Hays (2012) introduced SC as a dimension of intragroup conflict. In this study, the author adapted the SC scale of (Bendersky and Hays, 2012), which measures the level of disagreement over individuals' relative status. The SC scale of this study contains five items, measured via a 5-point Likert (1=*strongly disagree* and 5=*strongly agree*). Bendersky and Hays' (2012) study showed a high score for the Cronbach's alpha (0.90), which reflects the reliability of the SC scale (see Table 4.6).

Items Code	Questions/Items
SC1	1. My organization's members frequently take sides (i.e., form coalitions) during conflicts.
SC2	2. My organization's members experience conflicts due to the members trying to assert their dominance.
SC3	3. My organization's members compete to obtain influence.
SC4	4. My organization's members disagree about the relative value of the members' contributions.
SC5	5. There exists vertical tension between the lower and upper levels of the hierarchy of my organization.

Table 4.6: Status Conflict Measurement

TP scales were designed to measure the individual's performance of the core substantive task central to his/her job (Campbell, 1990). The literature shows different scales for measuring TP (Podsakoff and MacKenzie, 1989; Van Scotter and Motowidlo, 1996). In this study, the author adapted the scales of (Williams and Anderson, 1991; Koopmans *et al.*, 2013), since they fit the context of the research. The TP scale was extended to 12 items and divided into three

dimensions using the 5-point Likert, respectively: 1- quantity of the task (1=*far too little* and 5=*very large*), 2- quality and proficiency of the task (1=*insufficient* and 5=*very good*) and 3- time management regarding the task (1=*never* and 5=*always*). According to Koopmans *et al.* (2013), the TP scale was tested and found to be reliable. The study failed to clarify the calculation of the Cronbach's alpha value, but declared that it was reliable based on the recommended values, which is a minimum of 0.70 for groups and 0.85 for individuals (Tennant and Conaghan, 2007) (see Table 4.7).

Items Code	Items/Questions
<i>Quantity of the Task</i>	
TP1	1- I can describe the quantity of my own work to be.....
TP2	2- My administrator usually describes the quantity of my work as.....
TP3	3- The quantity of my accomplished tasks is.....compared to the (benchmark) formal performance requirements of my job.
TP4	4- Usually, I perform.....tasks compared with the responsibilities specified in my job description.
<i>The Quality and Proficiency of the Task</i>	
TP5	5- I can rate the quality of my own work to be.....
TP6	6- My administrator usually rates the quality of my work as.....
TP7	7- The quality of my accomplished tasks is.....compared to the (benchmark) formal performance requirements of my job.
TP8	8- I am.....in terms of fulfilling the specified responsibilities within my job description.
<i>The Time Management element of the Tasks</i>	
TP9	9- I manage to plan my work to complete it on time.
TP10	10- I spend a great deal of time on personal phone conversations and personal social media accounts.
TP11	11- My administrator tells me that I.....take undeserved work breaks.
TP12	12- I.....have trouble setting priorities for my work.

Table 4.7: Task Performance Measurement

The literature shows that interchangeable terms are used to describe DIF in many studies. Also, DIF has more than one scale, based on the definition adopted or developed by scholars. For instance, according to the systematic literature review conducted by E. Van Laar *et al.* (2017), several terms are used to describe DIF, such as: digital literacy, 21st century skills, digital competency, digital skills, information literacy, etc. In addition, Ilomäki *et al.*, (2016) assert that these terms are used in the literature as synonyms and that, in fact, there exist no

measurements for such skills. However, other scholars disagree and have developed reliable and measurable scales for assessing information literacy (Çoklar *et al.*, 2017; Adıgüzel, 2011). In this study, the author adapted the scales of (Çoklar *et al.*, 2017; Adıgüzel, 2011), which are divided into four dimensions, all of which are measured by a 5-point Likert, respectively: 1- defining information needs (1=*strongly disagree* and 5=*strongly agree*), 2- access to information (1=*insufficient* and 5=*very good*), 3- use of information (1=*very bad* and 5=*very good*) and 4- the ethical and legal use of information (1=*never* and 5=*always*). Çoklar *et al.* (2017) calculated the Cronbach's alpha value of the scale, which indicated that it has high reliability, at 0.928 (see Table 4.8).

Items Code	Items/Questions
<u>Defining and Evaluating Digital Information:</u>	
DIF1	1. I am fluent in looking for the required information on enterprise social media.
DIF2	2. I am fluent in comparing information across different sources on the internet.
DIF3	3. I am fluent in assessing information on social media in terms of their credibility, reliability, objectivity and accuracy.
<u>Access to Digital Information:</u>	
DIF4	4. Using search tools to obtain the required information on enterprise social media.
DIF5	5. Using software and hardware if necessary to obtain the information needed.
DIF6	6. Using basic operating tools (button, hyperlinks, file transfer, etc.) and applying it on enterprise social media to obtain the information needed.
<u>Use of Digital Information:</u>	
DIF7	7. Ability to organize and gather information systematically to use as a problem solution.
DIF8	8. Ability to analyze information on enterprise social media to achieve goals.
DIF9	9. Ability to share information and messages with colleagues on enterprise social media.
<u>Ethical and Legal Use of Digital Information:</u>	
DIF10	10. Create digital information contents that do not comply with legal and ethical rules.
DIF11	11. Access and use information illegally.
DIF12	12. Evaluate digital information in terms of legal and ethical rules (copyright law, human rights, etc.).

Table 4.8: Digital Information Fluency Measurement

As presented in the previous measurements, this study included both positive and negative questions (to act as cross-check questions) to ensure that the respondents were not biased and read each item carefully to reflect on the accuracy of their selections and answers (Robinson, 2018; Saunders *et al.*, 2015). In addition, the questionnaire includes (background questions) to indicate the participant's background and certain additional information (e.g. education level, age, position at work, etc.).

To sum up, these measures were adapted from well-known journal articles which have already been peer-reviewed, tested and verified. Furthermore, this developed questionnaire was cross-checked with two academics, three managers and two employees to validate and check whether the questions/items were understandable or not, which helped the author to develop the questionnaire accordingly.

4.11 Pilot Study and Results

To ensure that research instruments are valid and suitable for the study, the pilot test is considered an important stage before collecting the primary data. A pilot test is usually conducted to examine the validity and reliability of the constructs embedded in the questionnaire (Robinson, 2018; Saunders *et al.*, 2015). In addition, a pilot study can help to increase the quality of and rebuild a questionnaire based on the feedback and results (Saunders *et al.*, 2015). In other words, it plays a vital role in the assembly and intended purpose of the questionnaire, and also double-checks the simplicity of its questions and its physical structure (Robinson, 2018). The main advantage of carrying out a pilot test is to ensure that the questionnaire has been developed adequately to address and achieve the research objectives and question. As mentioned earlier, the pilot stage is necessary and allows the author to modify the questionnaire (if needed) to increase the efficiency and quality of the data obtained. By doing so, any weaknesses or defects in the questionnaire will be brought to light (Gable, 1994; Saunders *et al.*, 2015).

Prior to designing a pilot test, several points should be taken into consideration. The pilot questionnaire should be implemented judiciously to gain beneficial outputs (Bell, 2005). Moreover, a pilot test must be applied to a small sample of individuals that share the same

characteristics as the original population (Robinson, 2018). By doing so, the instruments can be examined and studied in a way that prevents any complications (Yin, 1994). This research reviewed the layout and content of the online questionnaire with a mixture of reliable individuals (two academics, two top managers and two employees) for many reasons; first, to obtain feedback regarding the online questionnaire from different backgrounds (academic, managerial and operational); second, to double check the wording of the questions and the layout of the questionnaire, to see whether the questionnaire was understandable, confusing or posed biased questions to the respondents (Sekaran, 2003); and, third, to reorganise the sequences of the questions, if necessary.

The academics made several valuable comments regarding the necessity of applying different wording techniques regarding the embedded items, which was taken into consideration. Furthermore, a comment was received about two different words on the questionnaire that caused some confusion. Accordingly, the wording was modified as required and the ambiguous items were either edited or deleted. Consequently, the questionnaire was revised according to the academics and practitioners' feedback, which formed part of the pre-pilot test stage (Robinson, 2018).

The pilot test was conducted at a telecommunications company located in Dubai, which is hereafter referred to as "Company X", for confidentiality purposes. Facing challenges to get an access for pilot test in Kingdom of Bahrain was the main reason to look for alternatives. Thus, a decision has made to execute the pilot test within a communication company located in Dubai to overcome this challenge. Not to mention the similarities in characteristics of both selected companies in Bahrain and Dubai such as: both located in Gulf Collaboration Council (GCC), implementing ESM and both are categorized as communication sector. This company was established in 2010, and has three main branches (Dubai, Amman and Lebanon). Company X matches the type and context of the primary case study (Organisation Y) which is also a telecommunications company that utilizes the ESM environment (see Section 4.8). After obtaining access via an official email from Company X, the HR Department of Company X distributed an online questionnaire to the employees, and it took around three weeks from September 2017 to collect a sufficient number of responses. Company X distributed the online questionnaire to 85 employees at different managerial levels, and 33 respondents participated, which meant that the participation rate was around 38.8%.

The demographic statistics related to the pilot study, calculated using IBM SPSS version 23.0 (Table 4.9), are presented below. These statistics show that 60.6% of the participants were male and 39.4% female. In addition, the pilot result shows that the majority of the participants were 26-40 years old (54.5%) and the minority were 56 years old and over (9.1%). Also, the result indicates that the highest percentage of participation was the segment of operational employees (63.6%) while the lowest was the top management (9.0%).

Characteristics	Category	Frequency	%
Gender	Male	20	60.6
	Female	13	39.4
Age	25 or under	4	12.2
	26-40	18	54.5
	41-55	8	24.2
	56 and over	3	9.1
Levels of Management	Top Management (Strategic)	3	9.0
	Middle Level Management (Tactical)	9	27.4
	Low Level Management (Operational)	21	63.6

Table 4.9: Demographic Statics of the Pilot Study (N=33)

The most frequent test applied to cross-check reliability is known as the Cronbach alpha (α) (Robinson, 2018). As a rule of thumb, results for the Cronbach's α of ≤ 0.90 represent excellent reliability, 0.70-0.90 represents high reliability, 0.50-.70 represents reasonable reliability and ≤ 0.50 represents weak reliability (Hinton *et al.*, 2004). In this study, the Cronbach's α . is = 0.889, for the total of the 50 items distributed across six constructs. Table 4.10 shows the overall Cronbach's alpha coefficients for all of the constructs obtained in the model. Based on the Cronbach alpha values below, it is clear that all of the constructs achieved an adequate level of reliability.

<u>Constructs Codes</u>	<u>Number of Items</u>	<u>Cronbach's Alpha</u>
Digital Information Fluency (DIF)	12	0.706
Task Performance (TP)	12	0.663
Task Conflict (TC)	7	0.775
Relationship Conflict (RC)	9	0.809
Process Conflict (PC)	5	0.833
Status Conflict (SC)	5	0.709
<u>Overall</u>	<u>50</u>	<u>0.889</u>

Table 4.10: Cronbach's Alpha Values of all Constructs

It is essential to note that the pilot test participants were aware that they were participating in a pilot test. After the pilot test was completed, the author approached the HR Department to check if any of the participants has any comments regarding how to improve the questionnaire for the primary data collection stage. The author was informed via some of the participants that the questionnaire was clear and understandable, and that the sequences and the flow of questions were perfect.

4.12 Case Study Protocol: An Operational Action Plan

Within the realm of business and management studies, a research protocol is a fundamental procedure. Collis and Hussey (2009) illustrate that a research protocol is a set of rules that are established to manage a specific research project. The aim of a research protocol is to help researchers to manage their studies with a clear vision and smooth flow. Holloway and Mooney (2004) assert that research protocols should be developed based on: 1- The aims and objectives; 2- Hypotheses; 3- Setting and then collecting of the sample; 4- The research methodology; 5- Statistical methods for data analysis; 6- Scheduling of the study.

Furthermore, a research protocol determines the path that the study follows to answer the identified research question and reveal insights into the research problem, in order to fulfil the research objective. The protocol of the current research encompasses designing the data collection process in an actuality style, ensuring that the required data were collected and

recording all of the steps involved in the data collection and analysis. The protocol is implemented for the data gathering process, which comprises assessing the validity and reliability of the distributed questionnaire to ensure reliable levels of quality in order to achieve adequate as well as objective analysis recommendations and techniques.

Designing a protocol is undertaken to confirm that the research has a clear direction for being able to test the research hypotheses and achieve the objectives. Henceforth, the current research pursues a protocol which was constructed accordingly. Notably, any research protocol should cover the following points:

- Proclaim that the required data are obtainable;
- Proclaim that the progress follows the set deadlines and that the timeframe is manageable;
- Keep a record of the procedures whereby the data are both obtained and developed;
- Proclaim that data set is stored within a concrete and well-organized structure.

Yin (2009) shows that a case study protocol should include all of the following sections: 1- An overview of the case study; 2- Fieldwork research procedures; 3- Question addressed by the research; and 4- The research output format. These sections include information that keeps the author focused on the topic of the case study and helps to anticipate any potential issues or risks in advance (Yin, 2009).

4.12.1 Case Study Overview

This part of the protocol displays the background information about the study and addresses the essential issues that need further investigation (Yin, 2009). As demonstrated in the previous chapters, the linkage between intragroup conflict and DIF is limited. This research aims to shed light on the moderator effects of DIF in the context of intragroup conflict in the ESM environment. This research will help to: 1- Establish a strategy for dealing with the generated risk due to differences in DIF levels in the ESM environment to avoid potential intragroup conflict; 2- Establish an evaluation of intragroup conflict along with DIF levels during the usage of an ESM application; 3- Identify the most vulnerable aspects of DIF that cause intragroup conflict within the ESM environment; 4- Identify and classify the technological, organisational and social impact factors of intragroup conflict when working in an ESM environment.

4.12.2 Fieldwork Research Procedures

Since this research follows a case study strategy, the investigation entails studying the issues raised within a 'real-life' context. It is necessary to combine the real-world issues with the demands of the data collection plan to avoid any obstacles (Yin, 2009). Thus, the author must cope with certain challenges and events, such as: the online questionnaire being ignored, biased responses, information relevant to the research being found to be inaccessible, the absence of continuous collaboration, etc. These events and concerns, over which a researcher has no command, can have vital consequences during the data gathering process. Therefore, maintaining suitably designed fieldwork procedures is essential. The next fieldwork steps during the empirical study are:

- **Defining the participants:** As this study focused on the effects of DIF on intragroup conflict in an organisational setting, and the case study has been identified (Organisation Y), so the participants are a mixture of employees from different managerial levels in Organisation Y. The purpose of this selection is to study the dynamics between the actors and the causes within a specific context. Thus, collecting the data from different managerial levels is preferable, in order to elicit a broader range of opinions. Thus, the data collection instrument should be developed in such a way that it will fit all employees' levels.
- **Selecting appropriate data collection methods and lines of enquiry:** As an online questionnaire is the primary data collection method employed in this research, one was developed based on the main research model's constructs. The development and sequence of the items on the questionnaire were constructed in order to obtain valuable empirical data, and guide the survey process. The online questionnaire was automatically recorded through Google Forms under the author's account. Google Forms was utilised in this research due to its ease of application and the protection and security of data that is governed by laws and regulations to ensure the privacy of the data and penalize any potential hackers.
- **Developing a contingency plan for the data collection stage:** The author was prepared to undertake a second-round of data collection within the same or another organisation, if required.
- **Evolving timeline agenda for the data collection:** The author was mindful of the inconstancy of the data collection phase, especially when it comes to an online

questionnaire. Hence, a schedule was developed to allocate the dates and times agreed with Organisation Y in order to designate the start and end points for the online questionnaire. Further, the applied survey program (Google Forms) offers a feature that helps the author to close the door to further participation after a specific deadline.

- **Identifying the ethical procedures:** Ethics refers to the ethical principles that determine the foundation of the code of conduct. Accordingly, research ethics indicates the manner and principles that the author adopts when conducting research and prescribing the results (Collis and Hussey, 2014). Some of the ethical concerns involve avoiding causing harm to the participants, voluntary cooperation and the freedom to be anonymised and for one's data to be kept confidential (Collis and Hussey, 2014). This research recognised all ethical obligations at each stage of the research. For instance, the participants were made aware of the aim and significance of the research and the reason behind the request to participate in it. Further, the participants affirmed that collaboration in this study was optional and that they would withdraw at any stage of the online questionnaire or vignette. Also, the participants were reassured that their confidentiality and anonymity would be respected. The code of conduct for this research was guided by the Brunel University Research Ethics Committee. According to the committee's policies, both the author and author's supervisor are required to sign the research ethics application. Consequently, this form was submitted to the academic programme office. This empirical investigation was conducted with the permission of the aforementioned committee. In this research, the case organisation (Organisation Y) agreed that the results might be published, provided that its anonymity was preserved. As a result, the case study organisation of this research study is referred to as Organisation Y in this thesis. This also applied to the pilot stage, in which the case study organisation was referred to as "Company X".

A case study indicates a comprehensive and precise investigation of a problem. In this case, the research protocol serves as a significant research plan during the data collection process. Moreover, Yin (2009) shows the necessity of requesting approval from individuals or the organisation case in order to obtain explicit permission to investigate that context. Hence, an arrangement was made with the HR Department of Organisation Y whereby the ethical approval form was attached to the online questionnaire to inform the participants that permission has been granted. Additionally, since the case study organisation might be

unfamiliar with academic methods regarding publication and dissemination, it was also essential to familiarise the participants with these procedures. Last but not least, it was necessary to invite the participants to see the outputs of the research, which is important in maintaining trust and increasing the validity of the study (Runeson and Host, 2009).

4.12.3 Cross-Check Questions for the Case Study

At the center of the protocol was a research question that reflects the primary research question. However, this question was distinct from those displayed on the online questionnaire. The main research question was set for the author rather than the participants, to serve as a reminder or alert concerning the data required to investigate the developed hypotheses. The central idea in developing the main research question is to remain focused during the whole research process. According to Yin (2009), it is also critical to address “cross-check” questions across the likely sources of evidence to support the collection of the case study data. For instance, this can provide an opportunity instantly to review the “principal question” that the questionnaire should reflect on before establishing the online questionnaire process. Moreover, the main research question and sub-questions act as a structure for the investigation and cannot be directed at the participants. Accordingly, one specific question was developed to maintain the focus throughout the data collection procedures. The principal research question is:

RQ: What are the moderator effects of DIF on the relationship between intragroup conflict and TP in the context of the ESM environment?

In Table 4.11 below, the author develops the sub-questions to act as a compass for remaining focused during the data collection process:

Question Numbers	Sub-questions
1	To what extent does DIF affect communication in the ESM environment?
2	To what extent does the variance in DIF levels cause intragroup conflict in the ESM environment?

Table 4.11: Sub-questions to serve as a Guide for the Researcher

4.12.4 Research Output

This research presents the research outputs as a reflection of the empirical data collected from the case study. This part of the protocol is necessary to keep the author focused on visualising the volume of data that will be gathered during the case study process. Therefore, this research discusses some of the concerns associated with the large volume of data that was expected to be generated. One way to manage a large volume of data is by associating them with the related construct, dimensions and items, which are ultimately connected with the related hypothesis. Prominently, unless a question on the online questionnaire contributed or led towards sufficient data test, it was recognised as “invaluable” with regard to the research objective. This research employed the quantitative method and analysis to produce numeric findings that help to answer the research question. Hence, the protocol of the research takes into consideration the volume of the data and the importance of managing them to be reflected on the quality and accuracy of the findings and outcomes.

4.13 Data Analysis

The data analysis commenced by cleaning and organising the collected data to guarantee that none of the values or outliers have been neglected. For this purpose, the analyses followed the cleaning process of SPSS version 23.0 to code and clean the data. Since this study uses an online questionnaire, no missing values were found. One of the advantages of an online questionnaire is that it prevents the participants from submitting it until they have answered all of the mandatory questions. This section provides an introduction for the next chapter, which covers the narrow scope of the research analysis. More details will be provided in Chapter 5.

4.13.1 Reliability and Validity

Reliability is an academic term that refers to the consistency, reproducibility and stability of measurement outcomes (Sekaran, 2000). Therefore, it is a significant determinant of measurement, which helps to recognise the inconsistencies and their impact on the measurement outcomes. Since the author measures multi-measurement items for each construct, internal reliability, in particular, is essential (Bryman and Cramer, 2005). For instance, there are four dimensions for measuring intragroup conflict. Seven items were employed to measure task conflict, nine to measure relationship conflict, five to measure

process conflict and five to measure status conflict. In the current research, the reliability of the measurement questions was assessed by testing the consistency of the participants' responses as a whole to the entire question in the measure, as justified by (Robinson, 2018; Nunally, 1978).

Cronbach's alpha reliability coefficients were employed to calculate the internal consistency of all of the measures. According to Robinson (2018) and Sekaran (2000), reliability coefficients that fall below 0.6 are regarded as poor, 0.7 is considered acceptable and over 0.8 is classified as good. Nunnally (1978) proposed that, when the Cronbach's alpha reliability coefficients are 0.7 or higher, this represents sufficient reliability. Other scholars have proposed that, when the Cronbach's alpha reliability coefficients are 0.7 or greater, then this indicates sufficient internal consistency (Hair *et al.*, 2010). However, Robinson (2018) tends to accept equal to or above 0.75 as a sufficient level of internal consistency. There are different opinions on this subject and all of them are acceptable. Hence, the lowest acceptable value of Cronbach's alpha to examine the reliability in this research is 0.7 to locate the reliability of all measures and so detect the aggregate reliability of every latent construct related to the framework.

Validity is associated with the precision of the measures (Robinson, 2018; Sekaran, 2000). Zikmund (2003) establishes a definition of validity as follows: "*Validity is the ability of a scale to measure what it intended to be measured*" (pp.331). Put differently, validity defines the extent to which a variable and its corresponding measurement figures are correlated, and the extent of reflection of these set of items on the related construct that is developed to serve as a measurement (Hair *et al.*, 2010). Neuman (2003) argues that, the greater connection of the latent variables and measured question/items, the higher the validity. Moreover, a construct's validity can be tested by evaluating the convergent validity and discriminant validity, which are illustrated as follows:

Convergent Validity

Convergent validity is the level of mutuality variance specifically on an observed construct (Hair *et al.*, 2010). Several processes are employed to estimate the convergent validity of the contracts: average variance extracted (AVE), factor loadings of a construct and construct reliability (CR) (Hair *et al.*, 2010). Moreover, Hair *et al.* (2010) recommended that the standardised loading values must be 0.7 or above, the AVE values must be higher than 0.5, and the reliability values must be above 0.7 in order to demonstrate sufficient convergent validity.

Thus, in the current research, the minimum acceptable values for AVE of > 0.5 , for loadings of > 0.7 and for reliability of > 0.7 were applied in order to estimate the convergent validity.

Discriminant validity

Discriminant validity indicates the level of distinction between the latent constructs (Hair *et al.*, 2010). The discriminant validity was evaluated using an operation proposed by Hair *et al.* (2010). The average variance calculated for each variable is contrasted with the parallel squared inter-construct correlations (SIC), and the AVE value harmoniously greater than the SIC values shows advocacy for the discriminant validity of the variable. This method was adopted in this study to estimate the discriminant validity of all of the constructs.

4.13.2 Structural Equation Modelling (SEM)

At present, the adoption of SEM as an analysis application has increased among Social and Behavioural Science scholars to examine and verify constructs' relations empirically (Çoklar *et al.*, 2017; Bentler and Dudgeon, 1996; Fan *et al.*, 1999). This research selects the Structural Equation Modelling (SEM) system and employs Analysis of Moment Structures (AMOS) to confirm both the validity of the hypotheses and the effectiveness of the developed theoretical model. SEM is an analytical process that depends on statistics operations that practice a confirmatory approach towards a structural theory. SEM involves statistically analysing the entire theoretical model and its constructs to determine the consistency of the data. The author finds that SEM is suitable for testing the current research hypotheses, as this requires multiple regression analysis between a group of dependent and independent constructs (Ullman and Bentler, 2007).

A structural equation model comprises two sorts of models, which have been identified as the measurement model/confirmatory factor analysis and the structural model (Hair *et al.*, 2010). While the confirmatory factor analysis verifies the association between a set of measurement questions/items and their corresponding dimensions, the structural model verifies the connections between the constructs as hypothesised. When the goodness-of-fit is sufficient, the model shows the acceptability of the hypothesised relationships between the constructs but, when it is insufficient, the acceptableness of such associations is denied (Byrne, 2010). Hair *et al.* (2010) recommend that a minimum of four tests of the model fit should be applied to the

CFA and Structural models. This research executed seven model fit tests to demonstrate the fitness of the model, as follows: Chi-square (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI) and Incremental Fit Index (IFI) (see Chapter 5 for more details). Also, the hypotheses were verified by employing the standardised estimate and critical value (p-value).

4.13.3 Structural model evaluation and hypothesis testing

As addressed previously in this chapter, this study implemented two procedures for the structural equation modelling analysis. The first procedure is the measurement model evaluation which was obtained by testing the reliability and validity of the latent variables through using CFA. Therefore, the testing of a structural model takes place as a second central stage to investigate the hypothesised relationships among the latent variables within the developed theoretical framework (Kline, 2005; Hair *et al.*, 2010). The developed theoretical framework portrays the links between the latent constructs. In other words, the developed model aims to define which variable has a direct or indirect impact on the status of the other variables in the designed framework (Byrne, 2001).

4.14 Conclusions

The current chapter explicitly summarised the research methodology and design. In this study, various research philosophies were evaluated and, eventually, the positivist philosophy was found to be the most appropriate research philosophy to adopt. Positivists believe that reality is delivered objectively and is characterised by calculable features, and so dealt with separately from the author instrument (Collis and Hussey, 2014). Hence, this study chose the positivist philosophy to test the developed theoretical model, which reveals the moderator impact of DIF on the association between intragroup conflict and TP in the ESM environment.

Consequently, this chapter established clear contrasts amongst several research methodologies. As a result, the author decided to adopt the quantitative method based on the justifications outlined in the previous sections. Quantitative research tends to investigate objective assumptions by testing the connection between the variables (Cresswell, 2009). This investigation adopted the quantitative research method, since it matches the deductive

approach, by testing nine hypotheses to reach the stage of confirmation or rejection. Therefore, the qualitative method was eliminated, since it does not match the type of data needed, the research question or the aim of the research.

Subsequently, this chapter shed light on several research strategies and adopted the case study strategy for this research. Usually, research strategies those are associated with the quantitative method involve surveys and experimental studies (Collis and Hussey, 2014). However, the case study strategy can be applied and combined with the quantitative method, based on the nature of the investigation and the sensitivity of the topic (Yin, 2013; Saunders *et al.*, 2015; Bryman and Bell, 2015). Since this research adopts the quantitative method to test the nine hypotheses set, a high volume of quantitative data is needed to generate the statistical outputs. Therefore, an online-questionnaire was found to be the most suitable method for this investigation, as it is sufficient, efficient, economical tool that makes it quick and easy to collect and manage data gathered from a large number of participants. Further, the author covered the sampling procedures, sample size and data collection steps.

Thereafter, the author demonstrated the case study protocol of this study. This protocol is an essential procedure that operates as an operationalised plan for the empirical examination. The research protocol contained an overview of the case, fieldwork research procedures, cross-check questions of the case study and the research output. The protocol constitutes a guideline to keep the author focused and on course.

Last but not least, this chapter addresses some of the ethical issues regarding the data collection's objectives and draws attention to the data analysis techniques. Also, the author revealed that SEM was applied, executed by AMOS, to test the hypotheses and performance of the developed theoretical model. SEM suits this investigation since testing hypotheses was a core task of this research, which requires the multiple regression analysis of a combination of dependent and independent constructs (Ullman and Bentler, 2007). Chapter 5 will demonstrate the analysis and results in detail.

CHAPTER 5: DATA ANALYSIS

5.1 Introduction

Chapter 4 outlined the development of the research design, assigned the research philosophy, justified the research approach and determined the data collection instrument, methodology and main procedures for the data analysis. As mentioned previously, this research is considered quantitative research by nature and employs an online questionnaire to collect the primary data from the research case study (Organisation Y). The aim of this research is to investigate the moderation effects of DIF on intragroup conflict in an ESM environment.

Based on the research methodology explicated in Chapter 4, SEM was selected to serve as the multivariate analysis to statistically validate the efficiency of the proposed theoretical framework. Prior to the execution of Confirmatory Factor Analysis (CFA) and path analysis, several procedures were undertaken to remove any defects from the data, which comprised Exploratory Factor Analysis (EFA) and re-checking the reliability and validity of the questionnaire and its items and the correlation of the model constructs.

The layout of the current chapter is as follows: Section 5.2 focuses on the response rate of the participants. Section 5.3 demonstrates the demographic profiles of the respondents. The common method bias process is explained in Section 5.4. The outcomes of EFA are revealed in Section 5.5. Section 5.6 describes the validity and reliability of the data collection instrument. Then, the descriptive statistics are revealed in Section 5.7. A demonstration of the correlation matrix is embedded in Section 5.8. The KMO and Bartlett's test results are presented in Section 5.9. Thereafter, SEM is introduced in Section 5.10 and, subsequently, CFA is explained in Section 5.11, the measurement model fit in Section 5.11.1 and the assessment of the construct validity in Section 5.11.2. Since the construct validity must cover the convergent validity and discriminant validity, sub-sections on these are developed respectively in Sections 5.11.2.1 and 5.11.2.2. The path analysis is presented in Section 5.12. The moderation effects are described in Section 5.13 and each moderator is allocated an individual sub-section, from 5.13.1-5.13.4. Section 5.14 displays the conclusion of the chapter.

5.2 Response Rate of the Participants

The author employs an online questionnaire that included 50 items that reflect the main constructs of the model. In addition, the questionnaire contains general questions in order to extract the profile and demographics of the participants. Since the case (Organisation Y) granted the author access to collect data, the author arranged with the HR Department to circulate the online questionnaire through their internal system.

The communication between the author and Organisation Y took place between August and October 2017. Accordingly, the questionnaire was distributed between October 2017 and January 2018, through the internal communication system of Organisation Y. The total responses came from 389 participants out of the organisation's 1,500 employees, and covered all managerial levels (strategical, tactical and operational). Since Google Forms was employed for the online questionnaire, the author applied the compulsory feature to all items to ensure that the respondents had completed each one prior to submission and so there would be no missing data. Therefore, no missing values were found related to any of the collected online questionnaires.

The CEO of Organisation Y supported this research and encouraged all staff member to participate in the online questionnaire. Therefore, the HR Department sent the online questionnaire to all 1,500 employees, with an encouraging message to motivate their participation, although all staff members were informed that they were under no obligation or liability if they did not wish to participate. Accordingly, 389 employees completed the online questionnaire forms, which were received and saved in the author's database. This participation rate exceeds the minimum acceptable sample size which was calculated based on an equation mentioned in Chapter 4.

5.3 Respondents' Profiles

To demonstrate the profiles of the respondents, two separate tables provide information regarding their background. First, Table 5.1 presents the demographic details about the participants, including: their gender, age, income, educational level and work level. Second, Table 7.2 presents the profiles of the participants, which reflects: their familiarity with dealing

with the ESM environment, time spent on ESM and whether they had received any training on ICT during their professional or educational stages.

The profile of the participants, as presented in Table 5.1, shows that no significant gender or age bias exists. Although, at the managerial level, the majority of participants were found to be from the operational and tactical levels, this is due to the fact that there are only a limited number (15) of individuals at the strategic level in the company. Since the participation frequency of the strategical level (top management employees) was 8 individuals, the ratio of responses in this particular category was 53%, which is considered reasonable. It is known that, in large companies, the distribution of the manpower forms a pyramid shape. Thus, there tend to be more operational and tactical than strategic individuals. This is usually considered an obstacle to collecting data from senior managers (Saunders *et al.*, 2015; Gill and Johnson, 2002).

On the other hand, the participants' education level and income statistics show the majority of them had an academic degree, which indicates that they are highly educated. Also, the statistics on their income indicate that they considered themselves to be well-paid individuals.

Gender	Freq. (%)	Age	Freq. (%)	Income	Freq. (%)	Educ. level	Freq. (%)	Work level	Freq. (%)
Male	253 (65.0)	25 or Under	57 (14.7)	Less than \$ 12,999	43 (11.1)	Up to High School	16 (4.1)	Strategical	8 (2.1)
Female	136 (35.0)	26-40	179 (46.0)	\$13,000 - \$25,999	139 (35.7)	Diploma	54 (13.9)	Tactical	120 (30.8)
		41-55	125 (32.1)	\$26,000 - \$47,999	167 (42.9)	Undergraduate	275 (70.7)	Operational	261 (67.1)
		Over 56	28 (7.2)	\$ 48,000 or more	40 (10.3)	Master	41 (10.5)		
						PhD	3 (0.8)		
Total (N) = 389									

Table 5.1: Respondents' Profile-1

Table 5.2 shows that the majority of the respondents are familiar with ESM and the functions embedded within such an environment. Only 5.9% of the respondents declared that they are unfamiliar with ESM. This is considered a rich-information sample that reflects a context in which ESM is utilized on a daily basis. In addition, the statistics show the 28.5% of the respondents use ESM hourly, 51.4% daily and 15.2% weekly, which reveals a tremendous dependency on ESM by the employees of Organisation Y. Unsurprisingly, 68% of the respondents had received training on ICT, which is considered a decent percentage and reveals an awareness among the strategic management of the importance of providing training on ICT in the workplace.

Familiarity of ESM	Freq. (%)	Period of time spent using ESM	Freq. (%)	Training on ICT	Freq. (%)
Yes	366 (94.1)	Hourly	111 (28.5)	Yes	267 (68.6)
No	23 (5.9)	Daily	200 (51.4)	No	122 (31.4)
		Weekly	59 (15.2)		
		Monthly	19 (4.9)		
Total (N) = 389					

Table 5.2: Respondents' Profile-2

5.4 Common Method Bias

In this research, the (Harman) 1967 factor was implemented to conduct the single factor test. The aim of this test is to check whether there exists a bias in the responses. According to Podsakoff *et al.* (2003), common method bias is considered problematic in most quantitative research, and affects the research measurements. This examination was conducted using SPSS version 23.0 via the dimension reduction factors feature. All of the items of all constructs were computed in the variable section and extracted as only one number of factors. The result for common method variance in this research was only 35.205%. Since the common method variance of the research is less than 50%, critical bias does not exist (Podsakoff *et al.*, 2003). Hence, it was confirmed that common method bias does not have any significant effect on the research model's findings.

5.5 Factor Analysis

Factor analysis is considered a statistical technique which is employed to verify variables' validity and explicate the correlations among the constructs. Factor analysis can be achieved through conducting EFA and CFA. Essentially, it helps to categorise variables into groups based on the significance of their correlation (Henson and Roberts, 2006; Williams *et al.*, 2010). Based on the research methodology literature, Exploratory Factor Analysis (EFA) should be conducted prior to Confirmatory Factor Analysis (CFA) to reveal and identify any potential issues with the model's constructs at an early stage so that the variables' data are cleaner for the SEM stage (Cabrera-Nguyen, 2010; Worthington and Whittaker, 2006). Accordingly, this research employs EFA to expose any potential problems within the construct items that might undermine the position of the variables and, hence, CFA via SEM can be conducted efficiently.

There were 50 items embedded in the questionnaire that were developed and identified to provide the main material for the data analysis (see Chapter 4). Subsequently, the factor analysis in SPSS 23.0 allocates 11 items in total from the variables in the model that need to be eliminated. The elimination accrues due to the loading of the items on different factors, which causes a defect in the model. Independently from what was mentioned above, the factor analysis findings were found to be adequate. Table 5.3 shows the difference between the items before and after EFA as preparation for the CFA.

Construct	Number of Items before Cleaning the Data	Number of Items after Cleaning the Data	Deleted Items (Total)
DIF	12	9	DIF10-DIF11-DIF12 (3)
TP	12	9	TP10-TP11-TP12 (3)
TC	7	5	TC5-TC7 (2)
RC	9	7	RC5-RC9 (2)
PC	5	4	PC5 (1)
SC	5	5	-----
Total	50	39	(11)

Table 5.3: Summary of the Cleaning Process for the Questionnaire Items

5.6 Reliability and Validity Analysis

Reliability and validity analysis are vital in order to confirm the regularity and precision of the current research. As mentioned earlier, in Chapter 4, it is necessary to demonstrate the reliability and validity of the research instrument. This analysis can be conducted by using SPSS to check the reliability via the Cronbach's alpha and the validity through the items' correlation (inter-items and item to total). Table 5.4 shows the minimum and maximum values identified in the methodology literature for both reliability and validity.

Type of Analysis	Measuring Means	Recommended Range	References
Reliability	Cronbach's alpha	Value= 0.7: Acceptable Value> 0.7: Good Value< 0.7: Poor	(Sekaran,2000)
Validity	Inter-item correlation	Minimum = 0.3 Maximum = 0.8	(Robinson <i>et al.</i> ,1991a)
	Item to total correlation	Minimum = 0.5	

Table 5.4: The Recommended Value Ranges for Reliability and Validity

The analysis was conducted using SPSS, which revealed the values of the Cronbach's alpha, Inter-item correlation and Item-to total correlation. The analysis shows that all of the constructs and their items are reliable, as demonstrated by the fact that the values for the Cronbach's alpha which are greater than 0.7. According to the recommended range of validity, it seems that most of the values lie within the recommended range. However, DIF and TP's inter-item correlations show a slight difference from the recommended values, which is controllable. On the other hand, the item-total correlation range for all constructs lies within the recommended values. Hence, and from the presented values in Table 5.5, it can be confirmed that the data collection instrument employed in this research is valid and reliable.

Construct	Total number of Items	Sample size	Cronbach's Alpha	Inter-item correlation (range)	Item-total correlation (range)
DIF	9	389	0.850	0.252 to 0.591	0.475 to 0.622
TP	9	389	0.848	0.256 to 0.469	0.503 to 0.638
TC	5	389	0.902	0.491 to 0.757	0.587 to 0.817
RC	7	389	0.947	0.664 to 0.772	0.795 to 0.868
PC	4	389	0.913	0.702 to 0.772	0.786 to .0817
SC	5	389	0.899	0.598 to 0.705	0.713 to 0.792

Table 5.5: Reliability and Validity Assessment of the Research

5.7 Descriptive Statistics

Table 5.6 illustrates the mean and standard deviation for all questions related to the six main variables in the theoretical model that was embedded in the research. The following table presents the codes for the 39 items/questions which can be linked easily to the main affiliated constructs. In addition, the coding facilitates the process of establishing a structure to organise the data and offer support in the analysis stage.

In addition, Table 5.6 shows that the value of the mean for all constructs ranged from 3.53 to 4.40 (*where 1 = minimum, and 5 = maximum*), which shows that the responses tended to lie between 3 and 5 on the scale (see Chapter 4). By analysing the DIF items' means separately, it becomes clear that the participants were, to some extent, digital information fluent, which is in line with the revealed demographic statistics that show a high level of training frequency in ICT and a good educational level among the participants (see Tables 5.1 and 5.2.) Moreover, the participants tended to select 3 and above on the scale, which reflects a high level of task performance. However, the participants found themselves leaning towards selecting the midway positions on the 5-point Likert scale, which forms uncertainty regarding the extent of intragroup conflict among the staff members of Organisation Y.

Construct	Item	Mean	Std. Deviation	N
DIF	DIF1	4.3033	.84372	389
	DIF2	4.2494	.76793	389
	DIF3	4.2519	.82379	389
	DIF4	4.2905	.77356	389
	DIF5	3.9974	.87785	389
	DIF6	4.3548	.90109	389
	DIF7	4.3213	.79111	389
	DIF8	4.1157	.82767	389
	DIF9	4.3213	.81991	389
TP	TP1	4.4010	.76225	389
	TP2	4.2596	.68635	389
	TP3	4.2519	.78535	389
	TP4	4.3702	.72987	389
	TP5	4.2879	.71752	389
	TP6	4.1774	.72645	389
	TP7	4.1337	.78492	389
	TP8	4.3316	.74995	389
	TP9	4.3650	.79328	389
TC	TC1	3.6427	1.39710	389
	TC2	3.5398	1.26066	389
	TC3	3.6838	1.24572	389
	TC4	3.5990	1.35411	389
	TC6	3.6555	1.35068	389
RC	RC1	3.8535	1.27692	389
	RC2	3.6864	1.17506	389
	RC3	3.7558	1.22874	389
	RC4	3.6967	1.29053	389
	RC6	3.7661	1.28403	389
	RC7	3.7789	1.17424	389
	RC8	3.8201	1.18995	389
PC	PC1	3.8303	1.28513	389
	PC2	3.7326	1.07717	389
	PC3	3.7095	1.18862	389
	PC4	3.7378	1.19196	389
SC	SC1	3.9717	1.20853	389
	SC2	3.7995	1.13333	389
	SC3	3.9589	1.05925	389
	SC4	3.7378	1.13888	389
	SC5	3.6684	1.23127	389

Table 5.6: Descriptive Statistics

5.8 Correlation Matrix

The correlation matrix was computed using SPSS 23.0. The correlation matrix helps to demonstrate the degree of correlation among the constructs' relations that are embedded in the research. Table 5.7 shows the correlation matrix of the six constructs related to the research, which also comprises the mean and standard deviation. It is clear from Table 5.7 that a significant correlation exists between the constructs, and the symbol (**) indicates the significance (Lee Rodgers and Nicewander, 1988; Taylor, 1990). In this research, the correlation values ranged from 0.868 to 0.149.

	Mean	Std. Deviation	DIF	TP	TC	RC	PC	SC
DIF	4.2451	.55680	1					
TP	4.2865	.50355	.641**	1				
TC	3.6242	1.12072	.299**	.210**	1			
RC	3.7653	1.07394	.246**	.166**	.819**	1		
PC	3.7526	1.05807	.292**	.180**	.843**	.886**	1	
SC	3.8670	.97247	.264**	.149**	.827**	.873**	.868**	1

Table 5.7: Correlation matrix with mean and Std. Deviation

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

5.9 KMO and Bartlett's Test

The importance of conducting a Kaiser-Meyer-Olkin (KMO) and Bartlett's test within the quantitative analysis is confirmed. It is essential to conduct this test prior to the process of confirmatory factor analysis. Hinton *et al.* (2004) proposed that a KMO and Bartlett's Test would disclose whether it is appropriate to proceed onto confirmatory factor analysis or whether adjustments are required. It is important to mention that Kaiser-Meyer-Olkin (KMO) examines the constructs in a particular sample to check their ability to correlate. On the other hand, the Bartlett's test affirms the association among the constructs (Hair *et al.*, 2010).

According to Hair *et al.* (2010), the KMO figure must be above the minimum value, which is 0.60, and the Bartlett's test must be lower than this value ($p < 0.05$). As presented in Table 5.8, the findings of this test showed that a KMO value of 0.832 and Bartlett's examination attained the required value of ($p < 0.05$), which is 0.000. Hence, the findings confirm the suitability of the research data for commencing the CFA.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of Sphericity	Approx. Chi-Square	2007.493
	Df	15
	Sig.	.000

Table 5.8: KMO and Bartlett's Test

5.10 Structural Equation Modelling

As mentioned earlier in Chapter 4, this research implements SEM as the multivariate numerical analysis method, which links EFA and multiple regressions. It examines the structural relationships among the embedded constructs in this study, via implementing CFA and path analysis (Hair *et al.*, 2010). To explain, SEM has two different forms: 1- The measurement model, and 2- The structural model. According to Suhr (2006), the former examines the associations amongst the measured and latent constructs, while the latter inspects the associations amongst the latent constructs alone (*ibid*).

5.11 Confirmatory Factor Analysis

5.11.1 Measurement of Model Fit

This research performs CFA by employing AMOS to examine the measurement model. Prior to demonstrate the findings of CFA, it is vital to highlight that the model fit is identified by employing several kinds of fit indices, such as: Chi-square (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI) and Incremental Fit Index (IFI), (Schreiber *et al.*, 2006; Hair *et al.*, 2010). Yet, there is disparity between scholars regarding the set of fit indices that should be included in research (Jackson *et al.*, 2009). Moreover, there are differences regarding the adequate values for fit indices (Hair *et al.*, 2009;

Schreiber *et al.*, 2006). Even the total number of fit indices varies from one scholar to another. For example, Park (2008) proposes reporting, at a minimum, one of the fit indices, while other scholars assert that the minimum number of fit indices in any research should be no less than four (Hair *et al.*, 2010).

To exceed any thresholds, this research operates seven fit indices, as listed below (see Table 5.9), which notably have been found cited by several researches (Hooper, 2008; Iacobucci, 2010).

Fit indices	Recommended Value	References
Chi-square test statistic (CMIN/ DF)	1.00~3.00	Lee <i>et al.</i> (2015)
Goodness-of fit index (GFI)	>0.80	Lee <i>et al.</i> (2015)
Adjusted goodness of fit index (AGFI)	>0.80	Lee <i>et al.</i> (2015)
Root mean square error of app. (RMSEA)	<0.08	Lee <i>et al.</i> (2015)
Tucker-Lewis Index (TLI)	>0.90	Hu and Bentler, (1998;1999)
Comparative Fit Index (CFI)	>0.90	Hu and Bentler, (1998;1999)
Incremental Fit Index (IFI)	>0.90	Hu and Bentler, (1998;1999)

Table 5.9: Recommended Values of Fit Indices

Conducting CFA led to the following outputs of fit indices, such as: CMIN/DF, GFI, AGFI, RMSEA, TLI, CFI and IFI (see Table 5.10). The listed fit indices match the recommended values. There are some fit indices that fail to match the recommended values which have eliminated from the report, such as RMR=0.75. However, the listed fit indices in this research are considered to be sufficient (Çoklar *et al.*, 2017).

Fit indices	Recommended Value	Structural Model
Chi-square test statistic (CMIN/ DF)	1.00~3.00	2.043
Goodness-of fit index (GFI)	>0.80	.853
Adjusted goodness of fit index (AGFI)	>0.80	.833
Root mean square error of app. (RMSEA)	<0.08	.052
Tucker-Lewis Index (TLI)	>0.90	.925
Comparative Fit Index (CFI)	>0.90	.930
Incremental Fit Index (IFI)	>0.90	.931

Table 5.10: Research's Values of Fit Indices

According to the previous tables, the listed fit indices demonstrate a good fit for the research's theoretical model. Thus, CFA execution is achievable and approved for the model.

Figure 5.1 shows the SEM-CFA conducted using AMOS. Due to the program requirement to give different names to the constructs than in the statistics file in SPSS, the construct names in AMOS have changed to allow the program to run smoothly; for instance, DIF = DigitalIIF, TP = Tperformance, TC = TaskC, RC = RelationC, PC = ProcessC and SC = StatusC. The model structured in AMOS and co-variance their constructs and variance each construct with its items accordingly. As Figure 5.1 shows, some of the paths were computed as 1 = regression weight to obtain the best result for the model fit:

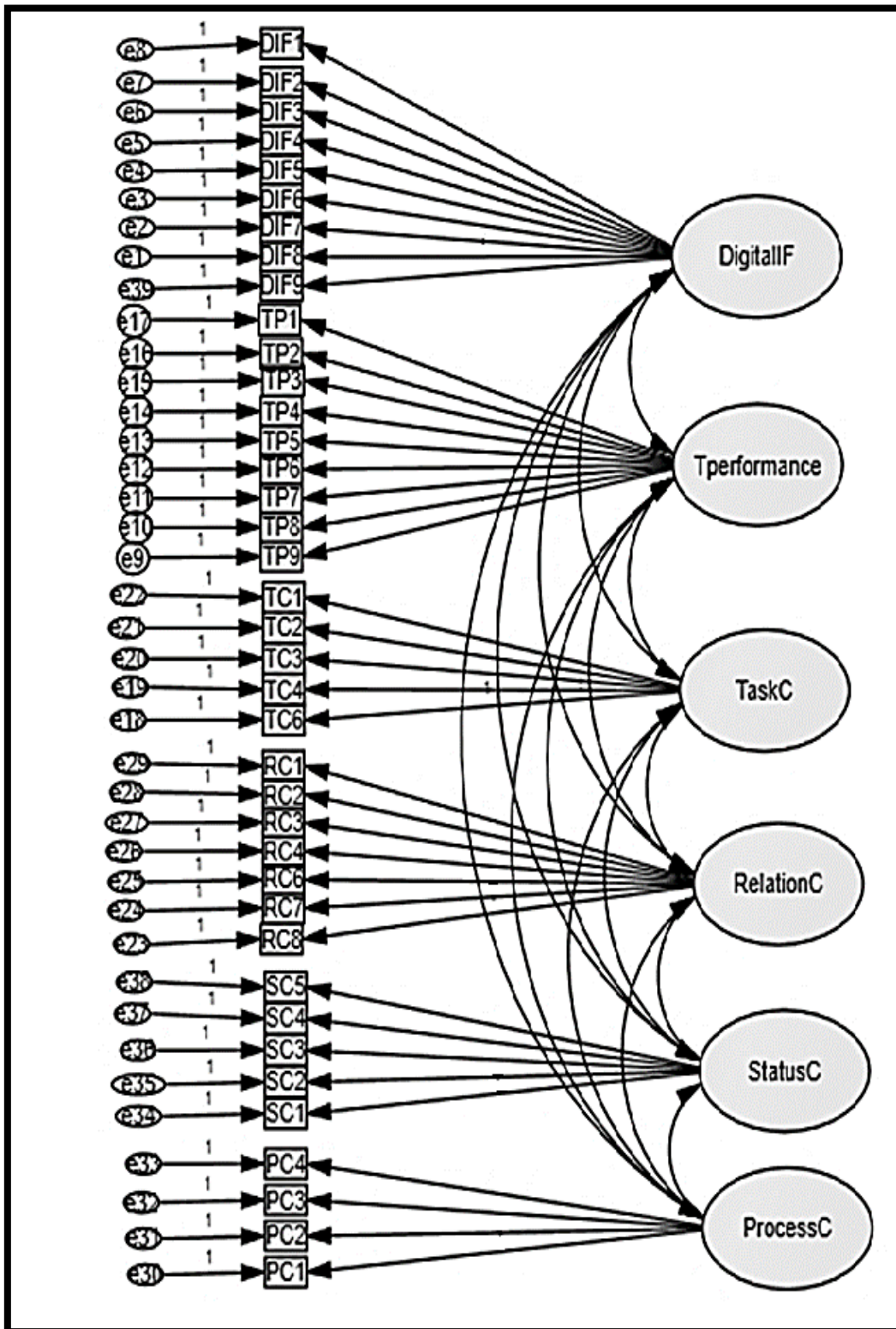


Figure 5.1: Measurement Model designed in AMOS

5.11.2 Construct Validity Assessment

Various scholars have emphasized on the fundamental role to assess the validity of the constructs (Brown, 1996; Zikmund, 2003). According to Hair *et al.* (2010), construct validity shows the capacity of the developed or adopted items to serve as a construct's fitness for measuring the phenomenon which it was developed to measure. In this research, convergent validity is employed for variables' validity (Hair *et al.*, 2010; Venkatraman and Grant, 1986). In practice, construct validity can be investigated via cross-checking the standardised loadings, Average Variance Extracted (AVE) and Composite Reliability (CR). Table 5.11 presents the recommended values for the aforementioned parameters and their references:

Parameters	Recommended Value	References
Standardised loading	> 0.5	Hair <i>et al.</i> (2010)
Average Variance Extracted (AVE)	> 0.5	Fornell and Larcker (1981); Hair <i>et al.</i> (2010)
Composite Reliability (CR)	> 0.7	Nunnally and Bernstein (1994)

Table 5.11: Recommended Values of the Standardised Loading, AVE, CR

5.11.2.1 Convergent Validity

Convergent construct validity is revealed through assessing certain variables that share a high ratio of variance in common (Hair *et al.*, 2010). For this phase of the research, the convergent validity is evaluated by combining important values, such as: factor loading, average variance extracted and composite reliability. To clarify, the factor loading values must possess a combined standardised regression weight greater than 0.50 (Hair *et al.*, 2010). On the other hand, the average variance extracted (AVE) computes the total amount of variance in the indicators via the latent variable. In general, the AVE value would be in a fit position when it exceeds 0.5. As revealed in the formula below, AVE is estimated as the entire squared standardised factor loadings (sometimes referred to as squared multiple correlations), divided across the number of factors. The AVE formula is as follows:

$$AVE = \frac{\sum_{i=1}^n \lambda_i^2}{n}$$

In addition, and according to Hair *et al.*, (2014), when the CR value is lower than 0.6, this indicates an absence of internal consistency reliability. Other scholars suggest that this should be greater than 0.70 (Bagozzi and Yi, 1988; Nunnally and Bernstein 1994). The CR formula is as follows:

$$CR = \frac{(\sum_{i=1}^n \lambda_i)^2}{(\sum_{i=1}^n \lambda_i)^2 + (\sum_{i=1}^n \delta_i)}$$

Note: in the equation mentioned above, (λ) stands for factor loadings (standardised regression weights), (ii) stands for the total number of items and (δ) stands for the error variance term for the latent variable collectively. Since AMOS does not compute the AVE and CR for each construct, the above two equations were employed to obtain the AVE and CR values by adopting the work of Fornell and Larcker (1981) and Chau and Hu (2001).

Table 5.12 shows that all of constructs in the model met the recommended values mentioned above:

Construct	Item	Standardised Loading	AVE	CR
DIF	DIF1	0.792	0.535	0.912
	DIF2	0.711		
	DIF3	0.795		
	DIF4	0.745		
	DIF5	0.637		
	DIF6	0.741		
	DIF7	0.740		
	DIF8	0.770		
	DIF9	0.635		
TP	TP1	0.858	0.588	0.928
	TP2	0.723		
	TP3	0.734		
	TP4	0.780		
	TP5	0.705		
	TP6	0.707		
	TP7	0.801		
	TP8	0.776		
	TP9	0.804		
TC	TC1	0.921	0.745	0.949
	TC2	0.938		
	TC3	0.895		
	TC4	0.911		
	TC6	0.766		
RC	RC1	0.917	0.854	0.976
	RC2	0.924		
	RC3	0.940		
	RC4	0.916		
	RC6	0.921		
	RC7	0.906		
	RC8	0.935		
PC	PC1	0.933	0.847	0.957
	PC2	0.916		
	PC3	0.913		
	PC4	0.919		
SC	SC1	0.903	0.701	0.947
	SC2	0.909		
	SC3	0.833		
	SC4	0.887		
	SC5	0.883		

Table 5.12: Summary of the Convergent Validity Findings

5.11.2.2 Discriminant Validity

Discriminant validity is considered one of the vital construct assessments. Hair *et al.*, (2010) define it as “*the degree to which two conceptually similar concepts are distinct*” (pp.125). One

of the methods for evaluating discriminant validity is via examining the contrast in AVE values for any two variables with the square of correlation estimate among these two variables. Notably, discriminant validity is significant when the average variance extracted is greater than the squared correlation estimates between the constructs. The findings regarding the discriminate validity are demonstrated in Table 5.13, which shows that the AVE is greater than the squared correlation estimates for all of the variables.

	PC	DIF	TP	TC	RC	SC
PC	0.920					
DIF	0.681	0.732				
TP	0.685	0.676	0.767			
TC	0.757	0.662	0.682	0.863		
RC	0.878	0.661	0.695	0.839	0.924	
SC	0.788	0.658	0.662	0.860	0.980	0.837

Table 5.13: Summary of the Discriminate Validity Findings

5.12 Path Analysis

In order to examine the proposed hypotheses which were addressed within the development of the theoretical stage, it is necessary to conduct a path analysis through AMOS. The author employed AMOS to draw the model, which reflects the six main constructs of the model and the nine developed hypotheses. Table 5.14 and Figure 5.2 illustrate the findings of the path analysis that was conducted using AMOS.

Hypotheses	Path	Standardised Coefficient	P	Results
H1	TP<--- TC	-0.373	***	Supported
H2	TP<--- RC	-0.221	***	Supported
H3	TP<--- PC	-0.028	***	Supported
H4	TP<--- SC	0.431	***	Not Supported
H5	TP<--- DIF	0.071	***	Supported
H5a	TP<--- DIFXTC	0.459	***	Supported
H5b	TP<--- DIFXRC	0.272	***	Supported
H5c	TP<--- DIFXPC	0.038	***	Supported
H5d	TP <--- DIFXSC	-0.565	***	Not Supported

Table 5.14: Summary of the path analysis findings

*Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$*

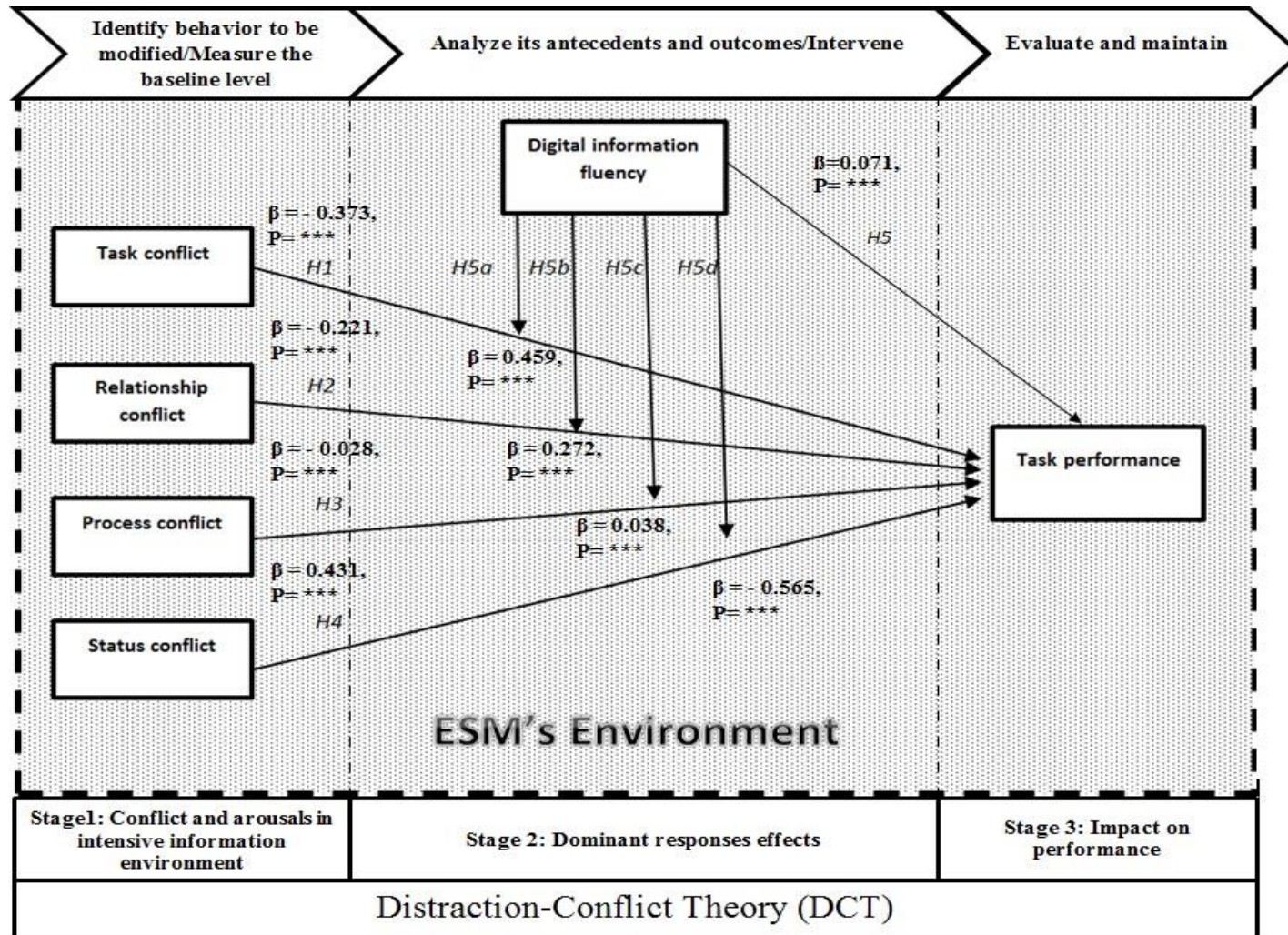


Figure 5.2 Path Analysis Results

Table 5.14 presents the path analysis findings, where seven of the nine proposed hypotheses were found to be supported and two unsupported. In the path analysis, the most vital indicators that help the author to examine the developed hypotheses are: the standardised regression weight (Beta value= β) and P value. The results show that TC has a significant negative impact on TP ($\beta=-0.373, p<0.001$). Hence, these values provide support for H1. On the other hand, the path analysis revealed that RC has a significant negative impact on TP ($\beta= -0.221, p<0.001$), which supports H2. In addition, the relationship between PC and TP has a significant negative impact on TP ($\beta =-0.028, p<0.001$), Thus, H3 is supported as well. Yet, SC shows a significant positive impact on TP ($\beta =0.431, p<0.001$), which contradicts H4, and so H4 is unsupported. On the other hand, the research result supports H5 ($\beta= 0.071, p<0.001$), which confirms the significant relationship between DIF and TP in the context of ESM.

From a moderator perspective, DIF has significant positive effects on the relationship between TC and TP ($\beta =0.459, p<0.001$), so H5a is supported. DIF has a positive significant effect on the relationship between RC and TP ($\beta =0.272, p<0.001$), so H5b is supported. Moreover, DIF has a significant positive impact on the relationship between PC and TP ($\beta =0.038 p<0.001$), therefore providing support for H5c. In contrast, DIF has a significant negative impact on the association between SC and TP ($\beta =-0.565, p<0.001$), which fails to support H4.

In the following section, the author elaborates more on the moderator effects and the interactions through the two-way interaction test.

5.13 Moderation Effects

Dawson (2014) asserts that one of the most important ways of analysing and interpreting moderator effects is by using two-way interaction. Prior to executing two-way interaction, the interaction between the moderator variable and the proposed relation should be computed by multiplying the (unstandardised) regression coefficient of an independent variable and a moderator variable together in order to interpret the moderator interaction. This operation lies at the core of examining the moderation effects (Baron and Kenny, 1986).

As already described in the path analysis section, the coefficient regression of the model's relations embedded the interaction of the moderator within the path analysis. Since the model's constructs have scale items included in each latent variable, the author centres all items under

its construct through the standardisation of the mean in SPSS 23.0 (Dawson, 2014; Gaskin, 2016).

It is important to note that the moderator variable in this research is considered a continuous variable. As a result, DIF is not dealt with as a categorical variable for examining the moderation effects. Treating the moderator incorrectly as a categorical variable decreases the statistical power of the analysis, also making it more difficult to spot significant effects (Cohen *et al.*, 2003).

To test the moderator effects, the author determines the difference between the coefficients before and after the intervention of the moderator. In this research, one of the best-known online resources (Gaskin, 2016) was employed to conduct the two-way interaction test and plot each moderator effect to confirm or reject the developed hypotheses (Dawson, 2014).

5.13.1 Moderator Effect of DIF on TC and TP

Based on the previous path analysis, the research plots the two-way interaction between the relationship between TC and TP and also plots the interaction of the moderator (DIF). As mentioned earlier, the moderator variable in this research reflects the digital fluency skills of individuals which are considered a continuous variable with a measurement scale (which applies to all moderator effects in this research).

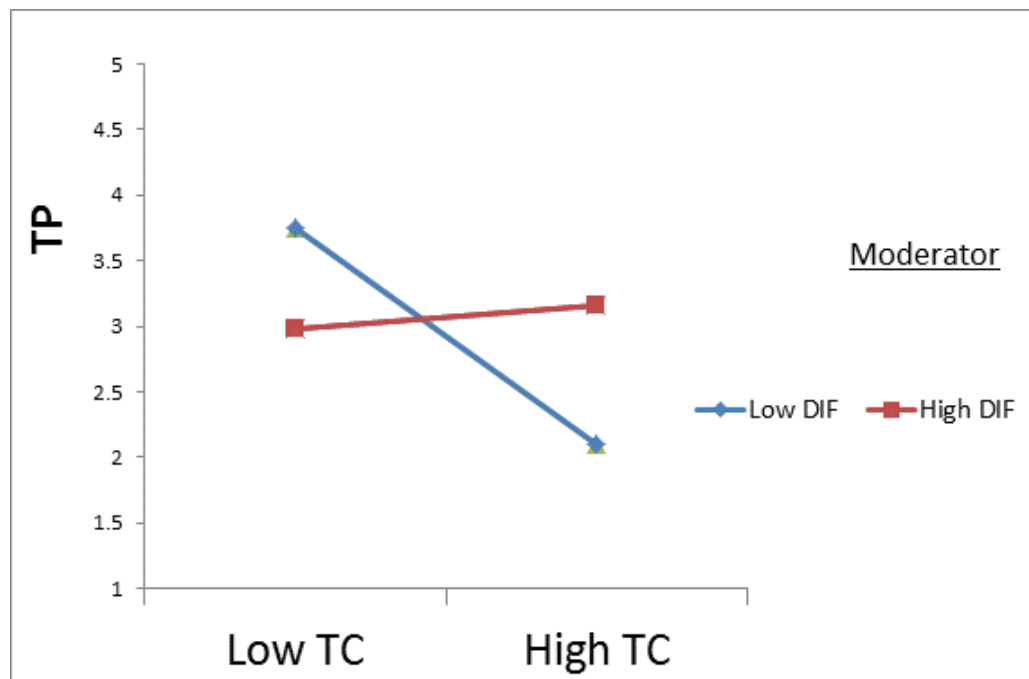


Figure 5.3: Moderator Effect of DIF on the Relationship between TC and TP

Figure 5.3 shows that a significant interaction occurs between DIF and the relationship between TC and TP. Where the relationship between TC and TP is significantly negative ($\beta=-0.370$, $p<0.001$), through the intervention of DIF, this relationship becomes significantly positive ($\beta=0.455$, $p<0.001$). In addition, Figure 5.3 confirms the moderator role of DIF on the association between TC and TP. In addition, when DIF is high, the negative relationship between TC and TP is dampened and, when DIF is low, the relationship between TC and TP remains negative, which supports H5a. Essentially, DIF dampens the negative relationship between TC and TP.

5.13.2 Moderator Effect of DIF on RC and TP

In this section, the research employs the two-way slopes between the relationship of RC and TP, and plots the interaction of the moderator (DIF). The coefficient values are used as inputs to draw the slopes between the relationship between RC and TP, and plot the interaction of the moderator (DIF). Since the digital fluency skills of individuals are considered a continuous variable and have a measurement scale, a two-way interaction test can be applied.

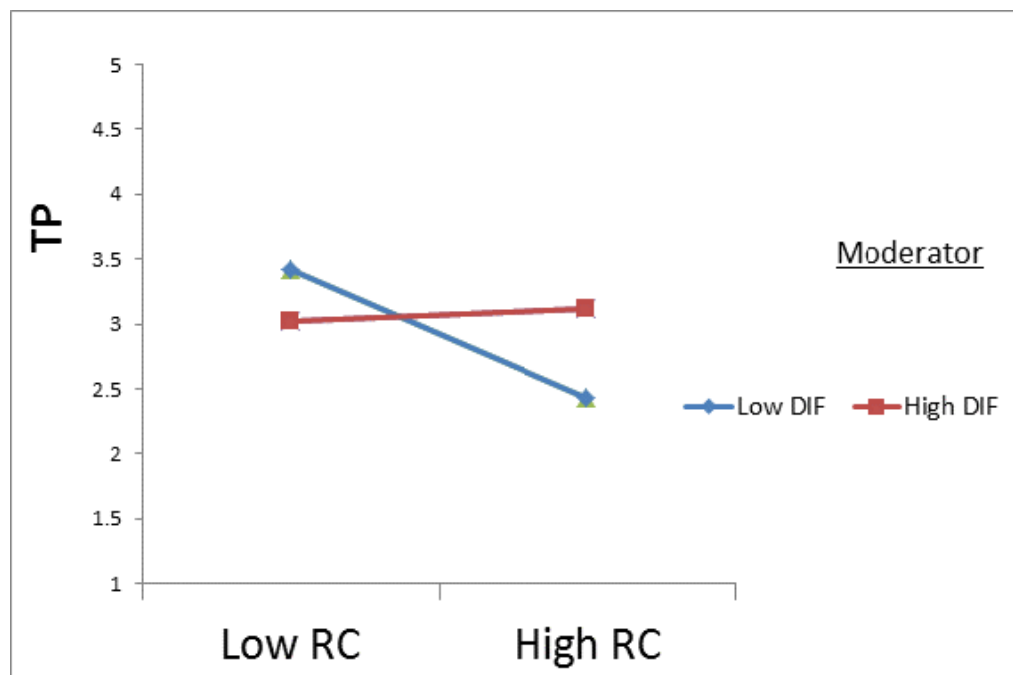


Figure 5.4: Moderator Effect of DIF on the Relationship between RC and TP

Figure 5.4 shows that a significant interaction occurs between DIF and the relationship between RC and TP. Where the relationship between RC and TP is significantly negative ($\beta=-0.224$, $p<0.001$), through the intervention of DIF, the relationship becomes significantly positive ($\beta=0.270$, $p<0.001$). Moreover, Figure 5.4 demonstrates that, when DIF is high, the negative association between RC and TP is dampened and, when DIF is low, the association between RC and TP is negative, which supports H5b. In general, DIF dampens the negativity between RC and TP.

5.13.3 Moderator Effect of DIF on PC and TP

Separately, the two-way slopes plotted between the relationship between PC and TP are combined with the interaction of the moderator (DIF). The coefficient values of these associations are used as inputs to draw the slopes between the relationship between PC and TP, and the intervention of DIF as a moderator.

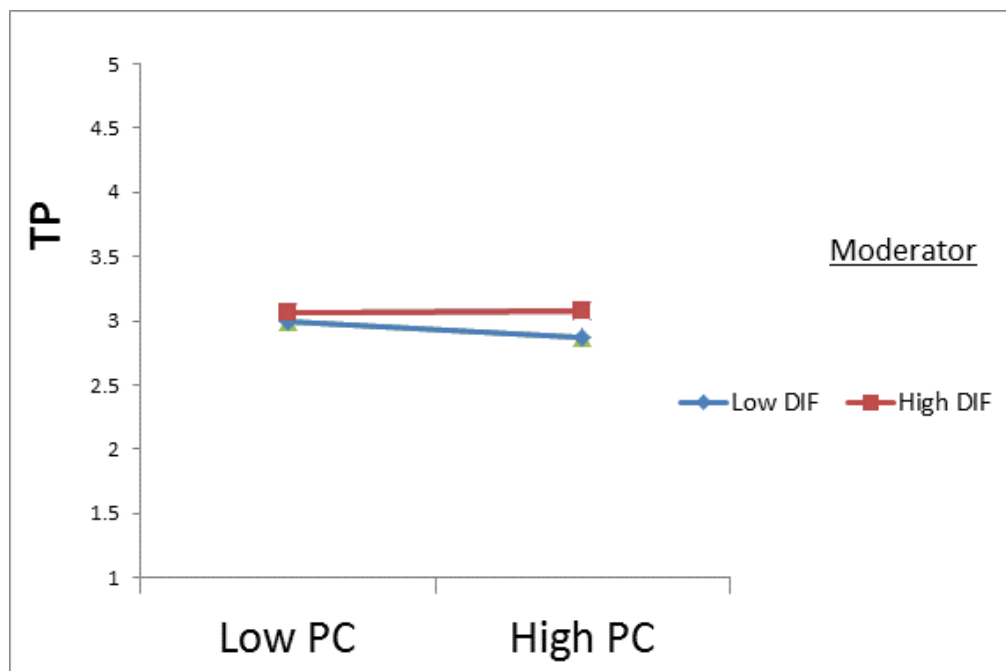


Figure 5.5: Moderator Effect of DIF on the Relationship between PC and TP

Figure 5.5 shows that a barely significant interaction occurs between DIF and the relationship between PC and TP. It seems that this interaction occurs when PC is low. The analysis shows that the association between PC and TP is significantly negative ($\beta=-0.025$, $p<0.001$). Yet,

through the intervention of DIF, this relationship becomes significantly positive ($\beta=0.036$, $p<0.001$). Moreover, Figure 5.5 shows that, when DIF is high, the negative association between PC and TP is dampened and, when DIF is low, the association between PC and TP remains negative, which supports H5c. In general, DIF dampens the negativity between PC and TP.

5.13.4 Moderator effect of DIF on SC and TP

Last but not least regarding the moderator effects, the two-way slopes related to the intervention of DIF on the relationship between SC and TP are plotted. As in the previous implementations, the coefficient values of these associations are used as inputs to draw the slopes between the relationship between SC and TP, and the intervention of DIF as a moderator.

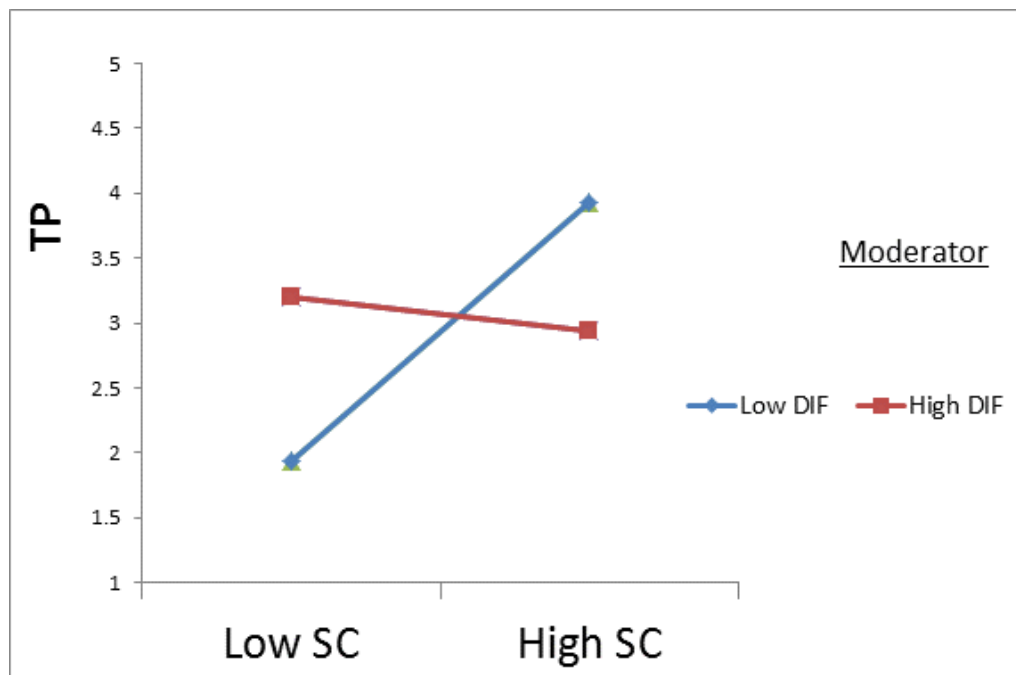


Figure 5.6: Moderator Effect of DIF on the Relationship between SC and TP

Surprisingly, Figure 5.6 shows that a significant interaction occurs between DIF and the relationship between SC and TP. However, this interaction is discordant. In other words, the analysis shows that the association between SC and TP is significantly positive ($\beta=0.430$, $p<0.001$). Yet, through the intervention of DIF, the relationship becomes significantly negative ($\beta=-0.561$, $p<0.001$). Moreover, Figure 5.6 shows that DIF negatively moderates the association between SC and TP. Hence, H5d was unsupported.

This leads us to conclude that seven hypothesis were supported (H1, H2, H3, H5, H5a, H5b and H5c), while H4 and H5d were not supported. In the next chapter, the author will discuss these results and provide justifications for them.

5.14 Conclusion

Chapter 5 demonstrated the data analysis, embedded the findings from several tests, and presented the results generated through CFA and path analysis. This analysis chapter clarified the response rate and respondent profile regarding the online survey, followed by a discussion of the common method bias. The respondent rate shows that there was a sufficient response ratio and adequate sample size, based on the methodology principles. Moreover, common method bias was found to have no significant effect on the research model's findings.

The author employed EFA in the early stage of the analysis to overcome potential issues with the constructs and their items. At that stage, several of the items on the questionnaire were deleted, based on the result of the EFA. This procedure facilitates and ensures a smooth ESM phase. Thereafter, a reliability and validity analysis took place. The author aims to ensure that the research instrument is dependable and precise for measuring the variables under study. The findings about the reliability and validity confirm that the research instrument is sufficient and dependable. Subsequently, descriptive statistics were demonstrated. The author found interpreting that statistics by inspecting the means of the respondents' answers and standard deviations for all items useful for the discussion chapter.

On the other hand, solid quantitative research should not fail to inspect the constructs' association. Hence, the extent of the association among the model's variables was described through a correlation matrix. The correlation matrix proves that a clear correlation exists among all of the constructs. Equally important to mention, carrying out a KMO and Bartlett's test helps to examine the constructs' ability to correlate and affirm the association among the constructs. The results showed that the research data were suitable for commencing CFA.

In this research, SEM was selected to confirm the appropriateness of the theoretical model and assess the developed hypotheses via executing CFA and path analysis. Performing CFA showed an adequate goodness of fit based on the recommended values. In addition, the values for the standardised loadings, Average Variance Extracted (AVE) and Composite Reliability

(CR) matched the recommended values. Therefore, the construct validity in terms of both convergent validity and discriminant validity was acceptable regarding the measurement model.

Moreover, path analysis was conducted to test the nine developed hypotheses for this study. The path analysis finding shows that seven hypotheses are supported (H1, H2, H3, H5, H5a, H5b and H5c) and only two are not supported (H4 and H5d). The author discusses the results of this part in greater detail in Chapter 6, to justify the grounds for supporting or not supporting the developed hypotheses.

Moderation effects were examined separately. The author used two-way interaction to demonstrate the impact of DIF on the model's relations. Each moderation effect was analysed and reported accordingly. The findings show that DIF moderated all of the associations between the dimensions of intragroup conflict with TP. Although all of the moderator effects were significant, the moderation effect in H5d conflicted with the assumption. Therefore, in the next chapter, the results of the research in general and the unsupported hypotheses in particular, will be discussed and justified.

CHAPTER 6: DISCUSSION

6.1 Introduction

The current study proposes a novel model by introducing DIF as a moderator to the current literature on the intragroup conflict which might arise within an extensive digital information environment, the case of ESM environment. This research aims to investigate the moderator impacts of DIF on the relationships between the intragroup conflict dimensions and task performance in the context of the ESM environment. The literature indicates the importance of studying intragroup conflict as workplace behaviour due to its significant impact on group outcomes. In addition, several studies confirm the relationship between intragroup conflict and group performance. However, DIF has been neglected as a variable that might affect the strength of the associations among the dimensions of intragroup conflict and TP. The literature focuses on managing intragroup conflict and its consequences, in several contexts, yet there is a dearth of researches investigating intragroup conflict in the virtual environment, such as ESM. The current research argues that DIF plays a vital role in containing the impact of intragroup conflict on TP in the ESM environment.

This research identifies a case study (Organisation Y), which is an international communication company located in the Kingdom of Bahrain in which ESM is implemented. Based on 389 volunteer employees from Organisation Y, the empirical result of the laboratory research confirms seven of the nine hypotheses created. In the previous chapter (Chapter 5), the author presents the results of each test. In general, these results show that DIF has different impacts on intragroup conflict situations in the context of the ESM environment. A high level of DIF functions positively as a moderator regarding the associations between certain intragroup conflict dimensions (TC, RC and PC) and TP, whereas a low level of DIF functions negatively. On the other hand, the association between SC and TP interplays positively with a low level of DIF and negatively with a high level of DIF. In this chapter, the author discusses the results in detail in light of the prior literature.

6.2 General Discussion of the Hypothesis Testing

This research aims to test the role of DIF on the relationship between intragroup conflict and TP in the context of the ESM environment through conducting an empirical investigation. Since the literature reveals that intragroup conflict is natural human behaviour (Rahim, 2015), it may arise in extensive digital information environment also, such as ESM (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). The high volume of digital information available through ESM means that a high level of competency is required to facilitate communication among different parties. Hence, the related theories were assessed based on the main aspects of this research in order to allocate the focal theories (See Chapter 3). Accordingly, this research found that distraction-conflict theory (DCT), with the support of organisational behaviour modification theory, could help to develop a novel model and hypotheses. Subsequently, this research tests the theoretical model to examine the adequacy of the developed hypotheses. In general, the result supports seven of the model's hypotheses and fails to support two of them.

Hypotheses Symbols	Hypotheses Statements	Results
H1	Engagement in TC affects TP negatively in the context of the ESM environment.	Supported
H2	Involvement in RC affects TP negatively in the context of the ESM environment.	Supported
H3	Engagement in PC affects TP negatively in the context of the ESM environment.	Supported
H4	Involvement in SC affects TP negatively in the context of the ESM environment.	Not Supported
H5	DIF has a positive impact on TP in the ESM environment.	Supported
H5a	The negative relationship between TC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low.	Supported
H5b	The negative relationship between RC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low.	Supported
H5c	The negative relationship between PC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low.	Supported
H5d	The negative relationship between SC and TP is moderated by DIF so that it will be less negative when DIF is high and more negative when DIF is low.	Not Supported

Table 6.1: Summary of the Hypotheses Testing Results

Before discussing the findings in detail, the author would like to deliberate the linkage of the focal theories with result. As mentioned earlier, this research adopts the notion of DCT and OBMT. The research's model divided to two main parts: 1- The association between intragroup conflict and task performance, 2- The moderator effects of DIF on the association between intragroup conflict and task performance. The notion of DCT applies on the first part of the model. The DCT asserts that the presence of others during work on a task generates conflict (Baron, 1986). The literature highlights that digital information overload environments vulnerable to distraction conflict (Liu *et al.*, 2017; Prokopec and Supérieure, 2013). Apparently, ESM characterised as a digital environment which has the ability to notify users on who are online and offline which can be called as (notification of virtual presence). Although ESM is very effective communication tool for professionals, it can lead to distraction and ultimately conflict between the users (Leonardi *et al.*, 2013). Correspondingly, DCT explicates the conflict-distraction that ESM generates during the work or related to it. As discussed and revealed from the literature, ESM considers as information overload environment, whereas users' performance might be affected by this virtual chaos (Yuan and Jing, 2014). Hence, the adoption of the notion of DCT supports and covers the main two concepts in this research (intragroup conflict and task performance) at ESM environment.

The second part of the model is about the negative arousals generated from intragroup conflict toward TP, and how can be tackled. The evaluation process for relative theories (see Chapter 3) concludes that OBMT can support the shortage of DCT. To elaborate, OBMT emphasises that behaviors can be modified through external intervention, which ultimately reflects on the performance or the outcomes in general (Stajkovic and Luthans, 1997). The literature suggests that the level of DIF might be an affective variable to the association of intragroup conflict and task performance at ESM (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). OBMT reveals adequacy to explain positing DIF as a moderator variable. According to Baron and Kenny (1986), a moderator variable describes as an intervention variable to causal relationship that lead to increase or decrease their association. Since intragroup conflict considers as a natural behavior (Rahim, 2015), this research selects OBMT to articulate an external intervention on a behavior which provides theoretical foundation to posit DIF as a moderator.

The findings show that three of the intragroup dimensions were associated negatively with task performance (TC, RC and PC), while SC was associated positively. On the other hand, the findings also reveal that a high level of DIF functions positively as a moderator regarding the associations between the three dimensions of intragroup conflict (TC, RC and PC) and task performance, whereas a low level of DIF functions negatively. Yet, the association between SC and task performance was positively moderated by a low level of DIF and negatively moderated by a high level. Hence, the results collectively reveal the importance of considering DIF in the context of intragroup conflict in virtual environments.

Hence, the linkage between the result and focal theories is as following: 1- Most of the intragroup conflict dimensions show negative association with TP within the context of ESM. This result supports the notion of DCT in virtual environment where high information overload exists conflict and distraction. 2- DIF shows moderator effects on the association between conflict and TP. This result supports OBMT, whereas DIF acts as an intervention on a behavior (conflict) and affect the outcome ultimately.

In the following sections, the research will discuss each result individually in light of the literature, together with its justifications. Section 6.3 discusses the direct associations with TP, and Section 6.4 discusses the moderator interactions of DIF in the research model.

6.3 Discussion of the Model's Constructs associated with Task Performance

Based on the literature, the research develops a theoretical model which contains six main constructs (see Chapter 3). The research model shows that five constructs (TC, RC, PC, SC and DIF) have five direct associations with (TP). These associations reflect the suggested theoretical assumptions (hypothesis), which are labelled H1, H2, H3, H4 and H5. In the following, each result will be discussed individually, based on the constructs' relationship with TP:

6.3.1 Task Conflict

Task conflict (TC) is considered one of the intragroup conflict dimensions, and refers to disagreements over the content of a task and work goals, such as the distribution of resources, procedures and interpretation of the facts (Jehn, 1995). The literature shows that TC might have dual effects (both positive and negative impacts) on group outcomes (de Wit *et al.*, 2012).

However, the positive impact generated with regard to performance is restricted to limited conditions e.g. the correlation between TC and RC and the nature of task (De Dreu and Weingart, 2003b). Since TC tends to harm group outcomes (Raver and Gelfand, 2005; Jehn, 1995; Jehn, 1997) and generate cognitive load, which normally produces negative effects on performance (De Dreu, 2008), this research hypothesises that TC negatively impacts on TP in the context of the ESM environment.

As the results show (see Chapter 5), the empirical analysis supported previous studies that found that TC harmed employees' performance. The result supported (H1) via the coefficient values -0.373 , $P < 0.001$, that showed that TC has a significant negative effect on TP. This outcome is supported by previous studies regarding the negative influence of TC on group outcomes whereas, in this research, the focus was on task performance (Liu *et al.*, 2017; Bendersky and Hays, 2012; De Dreu and Weingart, 2003b; Jehn, 1995; Jehn, 1997).

In this research, the result shows a significant correlation between TC and RC = 0.819^{**} , as the symbol ($**$) in SPSS 23.0 refers to a significant correlation (at 0.01 level, 2-tailed). The significant correlation between TC and RC might help to explain the negative impact of TC on TP. As reported by Jehn and Bendersky (2003), when TC is significantly correlated with RC, this might hinder the positive effect of TC on performance.

On the other hand, the correlation between TC and PC was also significant = 0.843^{**} , as the symbol ($**$) in SPSS 23.0 refers to a significant correlation (at 0.01 level, 2-tailed). According to De Wit *et al.* (2012), there is an expectation when TC co-occurs or is correlated with PC and becomes more negative with regard to group outcomes.

Therefore, the conditions surrounding this research might increase the tendency of TC to have a negative rather than a positive influence on TP. Moreover, the context of this research is the ESM environment, which differs from most of the previous studies' contexts that investigated the relationship between intragroup conflict dimensions and performance. This research adopts DCT (Baron, 1986) as its focal theory, supported by OBMT (Stajkovic and Luthans, 1997). Since the research's case study implements ESM as a communication environment, it is more likely that the nature of work in such as firm is complex and requires cognitive thinking ability. Active ESM environments produce information overload and almost continues virtual presence which might generate arousal and interfere negatively with TP (Brooks *et al.*, 2015). This is considered an extension of the argument that DCT causes distraction in the workplace (here, the ESM context) which might then generate conflict and arousal which interferes with TP (Brooks *et al.*, 2015; Nicholson *et al.*, 2005).

Based on the above, the relationship between TC and TP was found to be negatively associated with the ESM environment. This result various studies mention in the previous literature.

6.3.2 Relationship Conflict

Relationship conflict (RC) exists when interpersonal incompatibility exists among the group members, including personality clashes, tension, animosity and annoyance (Jehn, 1995; Simons and Peterson, 2000). Several studies have confirmed that RC produces negative individual emotions, such as anxiety, mistrust, resentment (Jehn, 1995), frustration, tension and a fear of being rejected by the other team members (Murnighan and Conlon, 1991). As a result, RC tends to combine negatively with individuals' outcomes, such as performance (Liu *et al.*, 2017; Bendersky and Hays, 2012; de Wit *et al.*, 2012; Jehn, 1995).

This research noted that RC has a significant negative impact on TP in workplaces in which the ESM environment is implemented (H2), as revealed by the coefficient values of -0.221, $P < 0.001$. Hence, the result supported (H2) and added to the literature on intragroup conflict that has been conducted in different contexts.

Several scholars have emphasised the negative influence of RC on individual and group performance (Liu *et al.*, 2017; Amason, 1996; Jehn, 1994). They found that this dimension of intragroup conflict generates interpersonal tension and clashes (Jehn, 1995), increases hostility (De dreu and Van Knippenberg, 2005) and anxiety (Dijkstra *et al.*, 2005), inhibits information exchange (Jehn, 1995), etc. Collectively, this leads RC to affect TP group outcomes negatively (de Wit *et al.*, 2012).

On the other hand, the result of the association between RC and TP in the ESM environment partially rejects (Chen and Tseng, 2016)'s findings. Chen and Tseng (2016) argued that communication-medium communication (CMC) is beneficial with regard to dysfunctional conflict. Chen and Tseng (2016) claimed that dysfunctional conflict refers to conflict that has a completely distractive impact on individuals or groups. As stated earlier, several studies have confirmed that RC tends to have a distractive impact (Liu *et al.*, 2017; Bendersky and Hays, 2012; de Wit *et al.*, 2012; Jehn, 1995), which supports the result of this research and rejects (Chen and Tseng, 2016)'s argument that CMC functions better with regard to destructive conflict, such as RC. This study was conducted in a workplace in which ESM is implemented,

yet RC negatively affects TP, notwithstanding the fact that the ESM environment is categorised as CMC (Leonardi *et al.*, 2013).

6.3.3 Process Conflict

Earlier, several scholars examined two types of process conflict (PC) and (TC) collectively as one dimension (De Dreu and Weingart, 2003). Subsequently, scholars confirmed that PC should be treated as an independent dimension due to its different characteristics from TC (Jehn *et al.*, 1999). This dimension of conflict refers to disagreement about how a task should be accomplished, the co-workers' responsibilities and delegation (Jehn, 1997; Jehn and Mannix, 2001; Jehn and Bendersky, 2003).

The literature asserts that PC has a negative impact on group outcomes in general and performance in particular (de Wit *et al.*, 2012). Process conflict is associated with lower morale, decreased productivity and poor team performance (Jehn, 1999). In addition, PC impacts directly on the logistics, procedures and resources management of the organisation (Jehn and Bendersky, 2003), which leads to impaired tasks achievement (Jehn, 1995).

This research hypothesised that PC has a negative impact on TP within the ESM environment (H3). This result supported (H3) by the coefficient values -0.028 , $P < 0.001$. Thus, this research confirms that there exists a significant negative relationship between PC and TP in the ESM environment. By reviewing the literature, this research was able to provide a justification for its findings. For instance, De Jong *et al.* (2008) find that higher virtuality among the group members led to a greater tendency for there to be a negative correlation between PC and team performance. According to Curşeu (2006a), the level of team virtuality might decrease the capacity to transfer non-verbal indications, which might obstruct mutual understanding. Although there have been attempts to transfer non-verbal phenomena, such as human emotions, through technology, there is a scarcity of research confirming the result of this from the human perspective (Science Daily, 2015).

As explained earlier, this research adopts a case study strategy and gained access to investigate the effect of DIF on intragroup conflict within the ESM environment of Organisation Y. Organisations usually implement an ESM environment in order to bridge between different individuals, departments and branches, that may be located in different countries (Leonardi *et al.*, 2013). Hence, the level of virtuality in the research's case study is very high, which bolsters

the negative nature of PC on TP, not to mention the information overload generated in the ESM environment (Bauer and Erdogan, 2012), which might lead to a lack of clarity regarding the task processes and increase the logistical disagreements among the group members.

6.3.4 Status Conflict

As revealed during the literature review stage, status conflict (SC) is considered the most recent dimension of intragroup conflict. In contrast with the previous intragroup conflict dimensions, SC has not received sufficient attention or investigation. Thus, there is a possibility that the intragroup conflict literature has failed to accommodate SC sufficiently. Although this research tended to consider SC as negatively affecting TP, SC might have different impacts on the group outcomes based on the circumstances of the situation (Bendersky and Hays, 2017). According to Bendersky and Hays (2012), SC is defined as “*disputes over people’s relative status positions in their group’s social hierarchy*” (pp.323). Scholars find that SC led to impaired information sharing among the group members (Bendersky and Hays, 2012) due to its competitive nature (Van Dijk, 2007). Based on previous empirical studies, SC has been demonstrated to have a negative effect on group outcomes and performance, as constrained by the circumstances of the study (Bendersky and Hays, 2012).

As stated above, this research hypothesised that SC impacts negatively on TP in the ESM environment (H4). Interestingly, the result was found not to support (H4), through the coefficient values 0.431, $P < 0.001$, and showed that SC was positively associated with TP in the ESM environment, which disagrees with the literature (Bendersky and Hays, 2012). Hence, this research attempts to justify this result by scrutinising the latest studies on SC and its impact on performance.

As mentioned earlier, SC is the latest revealed dimension of intragroup conflict. Thus, there is a dearth of research that investigates SC’s impact on TP, which can confirm the orientation of this association. However, this argument remains controversial. Based on the literature, Bendersky and Hays (2012) are the primary scholars who introduced this dimension and found that SC has a negative impact on performance. However, the model tested by (Bendersky and Hays, 2012) includes sharing information as a mediator variable and this indeed affects the result. Subsequently, Bendersky and Hays (2017) found that SC may affect performance positively in some cases based on the preliminary status agreement or subsequent status

agreement levels among the group members. Since this research's result showed that SC positively affected TP, which is an unsupported research assumption (H4), it is vital to identify a justification for this result from the literature.

In this research, the case study might be involved in low preliminary status agreement within their staff members which enhances the subsequent status agreement and transfers the negative affect of status conflict into a positive one on TP (Bendersky and Hays, 2017).

Preliminary status agreement is the level of recognition among the group members in the early stages, which can alter the agreement regarding the status hierarchy (Anderson and Kilduff, 2009). The preliminary status agreement might affect the collective agreement among the group members regarding the status hierarchy (Kilduff *et al.*, 2016). In other words, the status agreement among the group members is contingent on the preliminary status agreement. Therefore, the co-workers might change the primary views of their fellows' status. Hence, in cases where status conflict exists along with a low degree of preliminary status agreement, status conflict may escalate the subsequent status agreement, which leads to the recovery of performance (Bendersky and Hays, 2017).

Since preliminary status agreement is not covered in this study, it is difficult to say that this is the only justification for this result, but it might be one of the reasons based on the literature which shows the possibility of obtaining a positive effect for status conflict with regard to TP.

6.3.5 Digital Information Fluency

Digital Information Fluency (DIF) is defined by Jeffrey *et al.* (2011) as: “*the ability to find, evaluate and ethically use digital information efficiently and effectively*” (pp.385). A recent systematic literature review study shows that the term “DIF” has been used interchangeably in the literature (van Laar *et al.*, 2017). However, scholars define this phenomenon differently, based on the dimensions developed by each one. According to Briggs and Makice (2012), DIF is the highest level of literacy, which is affected by more than factor. This research adopts (Çoklar *et al.*, 2017; Adıgüzel, 2011)'s dimensions which help to measure DIF as a variable within the context of ESM.

This research hypothesises that DIF positively impacts on TP in the ESM environment (H5). The assumption was developed based on the results of previous studies. For instance, scholars find that ICT impacts positively on the performance of the individuals by accelerating accuracy and minimising the time required to complete tasks (Yu *et al.*, 2017). Indeed, ICT requires

employees to possess DIF on order to employ technology adequately. Recent research revealed that DIF has a positive impact of the performance of individuals and organisations (Koc and Barut, 2016), which means that employing ICT solely without maintaining the level of DIF among the workforce will diminish the positive impact of ICT.

The analysis of this research revealed that (H5) was supported by the coefficient values 0.071, $P < 0.001$, and showed a positive relationship between DIF and TP in the ESM environment. In addition, the correlation matrix result revealed a significant correlation between DIF and TP = 0.641**, where the symbol (**) in SPSS 23.0 indicates the significance correlation (Lee Rodgers and Nicewander, 1988). Combined, this confirms (H5).

Nowadays, a wide range of information is available in digital format. Individuals do not solely require sufficient technical competence but also need excellent skills to keep up with the transformations occurring in the workplace (Carnevale and Smith, 2013; Ahmad *et al.*, 2013). This research empirically confirms that DIF impacts on employees' TP in the ESM environment, where digital information cannot be employed sufficiently without a high ability to find, evaluate and legally employ digital information.

6.4 Discussion of the Interplay of Digital Information Fluency

Quantitative research tends to study statistically the casual associations between different variables (Dawson, 2014). According to Wu and Zumbo (2008), there are different types of associations among the variables: direct relationships and indirect relationships. A moderator variable functions as a modifier of the casual association between the variables, affecting either the strength or orientation of the relationship (Dawson, 2014; Baron and Kenny, 1986). This research aimed to investigate the moderator impact of DIF on the association between intragroup conflict and task performance in the ESM environment. Therefore, this research tested the interplay of DIF in order to confirm its moderator effect on the association between intragroup dimensions and TP.

The research result showed the DIF functioned as a moderator variable yet, to discuss the moderator result, it is vital to highlight important indicators from the literature that helped this research to hypothesise the interaction of DIF as a moderator. As reported by Colbert *et al.* (2016), the variance in DIF levels becomes notable within organisations and helps to boost conflict and decrease collaboration. Workplaces' top management pursues further steps in order

to obtain the benefits from the development of ICT in order to enhance the efficiency and performance among co-workers (Yu *et al.*, 2017). Recently, the ESM environment has become one of the contemporary ICT phenomena in the workplace (Leonardi *et al.*, 2013). This environment depends heavily on sharing digital information to such an extent that it might lead to information overload (Schick *et al.*, 1990; Bauer and Erdogan, 2012). Doubtlessly, those workplaces that have adopted ESM environments require fluent individuals to deal with digital information overload. In real life, co-workers possess a variety of DIF levels, ranging from low to high. Therefore, conflict between digital fluent and influent co-workers is expected to occur in workplaces in which ESM is implemented (Jimenez *et al.*, 2017; Colbert *et al.*, 2016).

This research adopts DCT (Baron, 1986), supported by OBMT (Stajkovic and Luthans, 1997). Theoretically, the virtual presence and information overload generated in an ESM environment can lead to distraction and, ultimately, conflict (Jong *et al.*, 2008; Kankanhalli *et al.*, 2006). Individuals' digital competence might help to manage information overload and decrease potential conflict within the ESM environment. Therefore, this research assumed that DIF plays a moderator role on the relationship between intragroup conflict and TP.

Based on the above, this research confirmed that DIF plays a moderator role in the relationship between intragroup conflict and TP in the ESM environment. As mentioned earlier in Chapter 5, these moderator effects were computed by multiplying the (unstandardised) regression coefficient of an independent variable and a moderator variable together in order to interpret the moderator interaction. This operation lies at the core of examining the moderation effects (Baron and Kenny, 1986). Accordingly, the result will be discussed in parallel with its related hypotheses (H5a, H5b, H5c and H5d), respectively.

First, this research hypothesised that the negative relationship between TC and TP in the ESM environment is moderated by DIF (H5a). The result confirmed that DIF positively moderated the negative association between TC and TP ($\beta=0.455$, $p<0.001$ significant). The outcome generated by the interaction-moderation in the "Two-Way Interaction" (Gaskin, 2012) cemented the view of (Martínez-Moreno *et al.*, 2012), that emphasized how computer-mediated communication (CMC) inhibits the shift to personal issues and contains issues within a task-related context. On the other hand, in an ESM environment where information overload occurs, high DIF levels play a vital role in strengthening communication (Yu *et al.*, 2017) and mitigating conflict (Sabanci *et al.*, 2018). The plot of the high DIF level interaction showed a dampening effect on the negative relationship between TC and TP. However, the slope of the

low DIF level interaction negatively oriented the association between TC and TP (see Chapter 5). Hence, the results supported (H5a).

The interaction effect generated by DIF on the association between TC and TP confirmed the importance of DIF as a competency in the ESM environment for dealing with conflict situations. Since TC is related to mismatches between individuals regarding the content of tasks and goals, these might occur in the ESM environment during the communication process. It is more likely that the sharing of tasks' contents and goals would be in digital format in an ESM environment. Thus, a high DIF level, as a competency among co-workers, would mitigate the negativity generated by TC with regard to TP in organisations that adopt an ESM environment.

Second, (H5b) assumed that the negative relationship between RC and TP in the ESM environment is moderated by DIF, such that DIF will positively affect this association. The moderator interaction showed that DIF positively affected the relationship between RC and TP ($\beta=0.270$, $p<0.001$ significant). Through using the Two-Way Interaction tool (Gaskin, 2012), it becomes possible to plot the interaction (see Chapter 5). The slopes of the two-way interaction revealed that a high DIF level positively affects the association between RC and TP, while a low DIF level negatively affects the association. From a communication perspective, Barner-Rasmussen and Björkman (2007) focused on the level of language fluency and its effect on trust and interpersonal relations between the parties. RC refers to interpersonal mismatching, which generates anxiety, mistrust and resentment (Jehn, 1995), and so ultimately negatively affects performance (De Wit *et al.*, 2012). The effect of RC might be transferred via the virtual environment (Martínez-Moreno *et al.*, 2012) and be affected by the communication fluency aspect (Barner-Rasmussen and Björkman, 2007). Therefore, this research supports the communication literature and asserts that DIF, as a communication competence, impacts positively on the association between RC and TP in the ESM environment.

Third, this research hypothesised that the negative relationship between PC and TP in the ESM environment is moderated by DIF, such that DIF will positively affect this association (H5c). The interaction among DIF and the association between PC and TP confirmed the positive moderator affect ($\beta=0.036$, $p<0.001$ significant). In addition, the plot of DIF interaction with the relationship between PC and TP revealed the different impacts when DIF is either low or high (see Chapter 5). The two-way interaction slopes showed that a high DIF level positively affects the association between PC and TP while a low DIF level negatively affects it. As presented in the literature review, PC situations refer to disagreements over delegation, logistic

and procedural issues (Jehn and Bendersky, 2003; De Wit *et al.*, 2012). The ESM environment is designed to enhance knowledge sharing and management (Leonardi *et al.*, 2013). Therefore, using such platforms requires digital fluent individuals to be able to search and evaluate knowledge uploaded via ESM related to logistics and procedures. The knowledge that exists within organisations might take the form of procedures, logistics, delegation processes, etc. Hence, this research confirmed that the connection between PC and TP was affected positively when the users have a high level of DIF in an ESM environment.

The last hypothesis to be discussed in this research is H5d. The statement of H5d was initially connected with hypothesis H4. As discussed in Section 6.3.4, the result showed that H4 is unsupported, which posits that hypothesis H5d is vulnerable to rejection. This research assumed that the negative relationship between SC and TP in the ESM environment is moderated by DIF, such that DIF will positively affect this association (H5d). However, the result showed that DIF negatively moderated the association between SC and TP ($\beta=-0.561$, $p<0.001$ significant). Interestingly, the two-way interaction plot of high DIF level negatively affected the association between SC and TP, while the plot of low DIF level positively affected the previous association. By scrutinising the literature, this research found that the preliminary and subsequent status agreement levels among the group members could positively impact the linkage between SC and TP (Bendersky and Hays, 2017). On the other hand, the negative moderator interaction of DIF with the relationship between SC and TP was justified in the literature:

Over-scrutiny among ESM users might decrease the autonomy within organisations (Mazmanian *et al.*, 2013) and lead to a lack of trust (Brown *et al.*, 2015; Grund and Harbring 2009). Thus, a high DIF level might boost individuals' ability to monitor interpersonal information within an ESM environment (Leonardi *et al.*, 2013) and so impair the occupational and social status (Mazmanian *et al.*, 2013). Collectively, this might help to explain the DIF interplay result, which activated the negative effect of SC with regard to performance (Bendersky and Hays, 2012).

6.5 Conclusion

This chapter aimed to explicate the empirical results regarding the theoretical assumptions outlined in Chapter 5. To achieve this, Chapter 6 represented the assumptions/hypotheses and discussed them in-depth along with the research result. In addition, the discussion was comparatively linked with the corresponding findings/thoughts found in the literature. Overall, the reflections of the research outputs have significantly contributed to the domain of intragroup conflict and revealed its connection to digital information fluency (DIF). In addition, this chapter deliberated on the extent to which DIF can mitigate the negative influence of multi-dimensions generated by intragroup conflict on task performance in the ESM environment.

The result was aligned with previous studies and confirmed the negative impact of intragroup conflict (TC, RC and PC) on TP in the ESM environment. Also, the result disproved the negative effect of SC on TP in the ESM environment (under the circumstances and justification provided earlier). In Chapter 6, the results were justified and discussed along with the hypotheses. In general, the result clearly showed that the negativity of intragroup conflict (as a behaviour) could be relocated to virtual/digital environments (University of Sussex, 2015).

As confirmed in the literature, if DIF is well-established within the organisation as a concept, the communication is better in the ESM context and digital information is employed more efficiently. Eventually, intragroup conflict in an ESM environment will be reduced. This research has extended the literature by statistically demonstrating that DIF positively moderates the majority of the intragroup conflict dimensions that exist in the ESM environment due to variances in the capacity for dealing with the flow of digital information, not to mention, the direct and indirect positive impacts due to mitigating the unfavorable effects of conflict amongst the group members with regard to task performance.

On the other hand, the notion of the research, along with its findings, disapproved the idea that ESM environments alone generate well-established networks and sufficient information flow among co-workers. This research emphasizes the importance of the role of DIF, as a variable, in mitigating conflict in high-tech environments and its impact on collaboration and information sharing among employees.

In the next chapter, the fundamental conclusions of the study will be presented. Furthermore, the author will highlight the practical and theoretical implications of the study and disclose the limitations and recommendations for future researches.

CHAPTER 7: CONCLUSION

7.1 Introduction

The previous chapter (Chapter 6) compared the research results with the result of the research literature. This chapter continues the general notion of the current research through demonstrating the procedures to accomplish this research. It's feasible to present a conclusion and suggest new avenues for future research. To achieve this, the current chapter will conclude this study by recalling the research aim and objectives and evaluating the fulfilment of each objective within the context of this research. The empirical results of this study revealed that DIF exerts a substantial moderator effect on the association between intragroup conflict and TP in the ESM environment. Consequently, the chapter formulates the key findings of this research in addition to the theoretical and practical implications of this study. In addition to the foregoing, the chapter discloses the limitation and challenges, followed by the author's recommendations regarding new avenues for further research.

7.2 Fulfilment of the Aim and Objectives of the Research

This research aimed to investigate the moderator impacts of DIF on the association between intragroup conflict and TP within the context of the ESM environment. This research was conducted by developing a foundation (a theoretical model) to be tested and confirmed. To achieve this, this research adopts the notion of distraction-conflict theory (DCT) along with organisational behaviour modification theory (OBMT) to facilitate the hypotheses development. On the other hand, DCT and OBMT helped to develop a theoretical base from which to study the impact of DIF on the association between intragroup conflict and TP situations from a behavioural perspective. In pursuance of fulfilling the aim, this research established specific objectives to serve as a check for each stage of this research. The author developed a table (Table 7.1) to present the linkage between each objective along with the chapters in which these objectives were fulfilled.

No.	Objectives	Chapters
1	To review critically the literature on organisational conflict with more focus on the association between intragroup conflict and TP that arises due to variances in digital information fluency levels within the ESM environment.	Chapter 2
2	To develop a theoretical model along with assessing relevant theories to make it possible to assess scientifically the relationships between the constructs identified in the literature.	Chapter 3
3	To design a research methodology that fits the purpose of the research in order to conduct an empirical investigation to test the developed hypotheses and analyse the data.	Chapter 4-5
4	To interpret the empirical results and discuss the supported and unsupported relationships between the constructs proposed in the theoretical model.	Chapter 6
5	To conclude the key implications of the research findings and suggest avenues for future research.	Chapter 7

Table 7.1: Linking the Objectives of Research with the Chapters in which they were Addressed

- *Objective 1:* To review critically the literature on organisational conflict with more focus on the association between intragroup conflict and TP that arises due to variances in DIF within the ESM environment.

The literature emphasized on the importance of studying intragroup conflict as phenomena, its impact and the challenges it creates in the workplace. Therefore, the author undertook a critical review to identify the definitions, types and levels of organisational conflict. Thereafter, the review focused on the intragroup conflict level and critically reviewed its dimensions. Consequently, the literature focused on communication aspects within the field of intragroup conflict management. Previous studies led this research to review the literature regarding the use of communication tools in the workplace to facilitate communication. Eventually, this led the author to concentrate on the ESM environment as an extensive digital information environment due to its contemporary relevance, which will be reflected in the novelty of the study. Afterwards, the revision uncovered the features of the ESM environment and the notion behind it in the workplace. Meanwhile, researches on digital environments drew the author's attention to the importance of using digital skills to sharing digital information and

communication successfully. The ESM environment alone does not make it possible to manage the tremendous amount of information that is uploaded to the platform, if the users are not digital information fluent. Thus, the research question was formulated at this point: “What are the moderator effects of DIF on the relationship between intragroup conflict and TP in the context of the ESM environment?” To answer this question and investigate whether DIF could mitigate or amplify the negativity of intragroup conflict on TP due to ineffective communication in the ESM environment, the literature covered a wide range of reliable and recent studies to check if scholars had already covered this academic enquiry. However, this research did not find any empirical studies that focused on this enquiry. Hence, the current study was motivated to tackle this problematic in the literature and fulfill the aforementioned gap (see Chapter 2 for more details).

- *Objective 2:* To develop a theoretical model along with assessing relevant theories to make it possible to assess scientifically the relationships between the constructs identified in the literature.

The theoretical model of this research was constructed along with nine hypotheses in Chapter 3, which elucidated the significance of DIF in tackling the negative effects of intragroup conflict on TP in the context of the ESM environment. On the other hand, this research conducted an evaluation for the most relevant theories, which helped the author to select the focal theories based on the criteria discussed in Chapter 3. As a result, the DCT and OBMT theories were adopted to serve as a theoretical lens for the model.

- *Objective 3:* To design a research methodology that fits the purpose of the research in order to conduct an empirical investigation to test the developed hypotheses and analyse the data.

In order to evaluate the theoretical model, this research reviewed the literature about methodology and presented in Chapter 4. The methodology assessment depended on the flow of the research onions (Saunders *et al.*, 2015). Accordingly, the philosophy, approach, method, strategy and time zone of the research were identified. Since the literature revealed that the associations between the current research constructs are measurable, a quantitative method was adopted and an online questionnaire was developed as the data collection instrument.

Subsequently, this research executed pre-analysis procedures prior to the main data analysis by implementing a pilot test. All of the constructs' validity and reliability lay within the recommended values, and so it was feasible to proceed with the structural equation modeling tests (see Chapter 4 for more details). On the other hand, to analyse the data, this research selected the Structural Equation Modelling (SEM) system by employing Analysis of Moment Structures (AMOS) to confirm the validity of the hypotheses and the effectiveness of the developed theoretical model. The analysis procedures executed confirmatory factor analysis and structural modeling, which showed adequate results. (see Chapter 5 for more details).

- *Objective 4:* To interpret the empirical results and discuss the supported and unsupported relationships between the constructs proposed in the theoretical model.

The research results that were generated via the analysis were discussed in Chapter 6. The discussion interpreted and explained the results then linked them with the literature. Each of the nine hypotheses was considered as a subject and was discussed and evaluated in light of previous studies' findings. In addition, Chapter 6 provided a summary of the empirical investigation and confirmed that seven of the nine hypotheses were found to be supported and two were found to be unsupported. The discussion included a justification of the supported and unsupported results and was linked with previous empirical studies' findings.

- *Objective 5:* To conclude the key implications of the research findings and suggest avenues for future research.

As closure to this research, Chapter 7 represented the aim and objectives of the research. This process is considered a check to confirm the research objectives' fulfillment. Subsequently, the theoretical and practical implementations were presented respectively, which highlight the research contributions. Last but not least, the research listed the limitations of this research and identified avenues for future studies.

7.3 Theoretical Contribution

Due to the significant impact of intragroup conflict on improving the performance of organisations, collaboration among the group members and achieving the organisation's vision, scholars and policy-makers were motivated to extend their enquires in order to learn more about

how this issue might be tackled. As discussed in this research, intragroup conflict can arise due to the variances in DIF levels among co-workers within an environment where a huge volume of digital information is distributed and shared on a daily basis. This study presented a comprehensive investigation and revealed important findings.

Collectively, and from a theoretical perspective, this research delivers a number of theoretical implications:

- First, this research bridged two different literature streams (intragroup conflict and DIF), which is considered a theoretical contribution academically (Phillips and Pugh, 2015). The literature review was crafted and sequenced in such a way that it released new insights and developed connections that had previously been neglected in the context of conflict literature. To the best of the author's knowledge, this combination of the current research's literature is the first attempt to combine the intragroup conflict literature with the digital fluency literature. Although the intragroup conflict literature has been extensively investigated, none of the previous studies have attempted to combine intragroup conflict (as behaviour) with digital skills (McCarter *et al.*, 2018).
- Second, this research introduced DIF as a moderator variable between intragroup conflict and TP in the context of the ESM environment. The results confirmed the moderator role of DIF and showed that the negative association between intragroup conflict (TC, RC and PC) and TP was dampened. This finding is considered an important theoretical contribution and evidence that discloses the important role of DIF, as a competency, in mitigating conflict within the ESM environment. Academically, introducing a moderator to an existing theory is recognised as a theoretical contribution to knowledge and receives high recognition (Colquitt and Zapata-phelan, 2007; Dawson, 2014; Gaskin, 2016). It is clear from recent studies that there is a call for further empirical research on the impact of DIF on intragroup conflict (Jimenez *et al.*, 2017; Collbert *et al.*, 2016). Having introduced DIF as a moderator variable between intragroup conflict and TP in the context of the ESM environment, this research has contributed empirically by providing empirical data that confirm the impact of DIF on the relationship between intragroup conflict and TP.
- Third, this study extended the scope of the DCT and OBMT theories within the domain of human behaviour. The intragroup conflict that might be generated by information overload

in the ESM environment is partially explained by the notion of DCT. On the other hand, OBMT facilitates our understanding of behaviour modification through a moderator intervention such as DIF in the context of this research. In general, the focal theories served as lenses for the research's theoretical model and explained theoretically the associations or interactions between the variables. This study contributes to the literature on DCT and OBMT in the field of human behaviour and its interaction with technology by developing a theoretical model with empirical justifications. Hence, the theoretical implications of introducing DIF as a variable into the adopted theories to study DIF's moderator effects on the association between intragroup conflict and TP within the context of the ESM environment is considered novel.

To summarise, the connection between the result and focal theories is as following: 1- Most of the intragroup conflict dimensions show deterioration with the association of TP within the context of ESM. This result supports the notion of DCT in virtual environment where high information overload exists conflict and distraction. 2- DIF shows moderator effects on the association between conflict and TP. This result underpins OBMT, whereas DIF acts as an intervention on a behavior (conflict) and affect the outcome ultimately. This means that this study extended the scope of the DCT and OBMT theories within the domain of human behavior in digital environments.

- Fourth, this research contributes to the existing literature on conflict management by developing a theoretical model for evaluating the role of DIF in mitigating the negative effects of intragroup conflict on task performance (de Wit *et al.*, 2012; Bendersky and Hays, 2012). Such a model will open up new avenues for those interested in the conflict management field. Moreover, the research model examined the latest intragroup conflict dimension (SC) together with the traditional dimensions. Most of the studies focus on TC, RC and PC and link these dimensions with group outcomes (de Wit *et al.*, 2012; Jehn and Mannix, 2001; Jehn *et al.*, 1999). However, this study develops a model which links all of the well-known intragroup conflict dimensions including SC (Bendersky and Hays, 2012) with a specific type of performance (TP).
- Finally, this model was examined within the context of the ESM environment of a large, international communication organisation located in the GCC region. According to Kilani *et al.* (2015), there is a lack of research regarding intragroup conflict in Arab countries in

general and in GCC countries in specific. To study the impact of DIF on intragroup conflict in an ESM environment, it was necessary to select the most suitable context in the region that embraces solid telecommunication implications and expected variance between employees' DIF levels. Hence, this research selected a case study located in the Kingdom of Bahrain to collect the main empirical data from the different managerial levels. The Kingdom of Bahrain is considered the leader among Arab states in the field of telecommunications development (ICT Development Index, 2017), which motivated this selection. Thus, this research contributes to the previous studies on intragroup conflict from the contextual perspective too.

7.4 Implications for Practice

In this section, the author shifts the discussion regarding novelty from the theoretical to the practical domain. This study proposes several practical implications which will be presented in this section. As mentioned earlier, the aim of this research was to investigate the moderator impact of DIF on the association between intragroup conflict and TP in the ESM context. As such, the findings propose to the research community and organisations that intragroup conflict could raise due to digital information overload in an ESM environment, and it would lead to deterioration of TP. In this situation, considering DIF as an important employment requirement and competence would mitigate intragroup conflict and ultimately the deterioration of TP. Thus, organisations that are categorised as having an extensive digital information environment, this model will equip the top management and policy-makers with further knowledge on the significance of considering the notion of DIF within their organisations. Indeed, the concept behind the current research will help decision-makers to redesign jobs in order to leverage the notion of DIF and minimise the miscommunications that lead to intragroup conflict.

Thus, this study urges organisations that that are categorised as having an extensive digital information environment such as ESM to consider the importance of DIF. This research found that competence in dealing with digital information allows co-workers to employ information thoroughly and effectively within an information overload environment (Bauer and Erdogan, 2012). As a result, the misunderstanding regarding tasks, relationships and processes in an extensive digital information environment is mitigated. On the other hand, the TP of individuals will be enhanced, which ultimately affects the whole organisation in a positive manner. Indeed, the main notion of the research model depends on increasing the employee's ability to deal with

digital information. The communication and networking process cannot be improved without sufficient the searching, evaluation and employment of information among co-workers. The research outcomes may encourage the top management to redesign the jobs, training and recruitment criteria, which will enable them to ensure the leverage of employees' DIF in terms of information communication and so mitigate intragroup conflict in the ESM environment (Jimenez *et al.*, 2017; Colbert *et al.*, 2016). It is important to emphasise that the research finding is applicable also to other environments that generate a high volume of digital information. Although this research was conducted in the context of ESM, its findings are valid for any organisation that faces intragroup conflict due to the gap between the group members' DIF and the necessity of handling a high volume of digital information.

Furthermore, this study finds that employees from different managerial levels depend heavily on digital information that generated in an ESM environment in order to communicate and share information. This research revealed that, in this case study, 28.5% of co-workers using ESM hourly, 51.4% daily and 15.2% weekly. This indicates that such organisations (extensive digital information) tend to exchange digital information through the ESM environment or any similar channels (Van Laar *et al.*, 2017; Çoklar *et al.*, 2017). Therefore, the previous statistics support the importance of considering DIF as a vital variable for improving communication and harmonious success among the group members through the use of digital channels. As proved in this study, DIF will moderate positively the linkage between intragroup conflict and TP, so this should be considered by such institutions.

Moreover, (AI) developers might find the findings of the research promising on analysing data, images, tweets, hashtags, etc. (Nunavath and Goodwin, 2018; Frey *et al.*, 2018). Similarly, AI applies on ESM to help top management and employees to find, organise and link data together. Moreover, AI can predict the probabilities of uploading inappropriate words or images that might consider offensive for others (Patton *et al.*, 2013; Frey *et al.*, 2018) which might provoke conflict.

Finally, the combination of variables used in this research to measure DIF's impact will make evaluating the progress of intragroup conflict mitigation possible among group members within an extensive digital information environment.

7.5 Research Limitations

Although this research attempted to minimise any negative effects, the author acknowledges that it has certain limitations. This acknowledgment is oriented towards all readers and scholars interested in this research so that they may be acquainted with the limitations and view the presented material of this research within these constraints.

- By employing a (self-administrated) online questionnaire, the current research collected data related to intragroup conflict situations from a large, international organisation in which ESM is implemented. Therefore, the capability to interact and discuss issues during in-depth interviews was constrained.
- In the empirical investigation of this research, the population of the investigation was limited to the case study. Hence, the sample of the research population extracted were affected by the organisational cultural of the case solely, without taking into consideration differences in the culture and background of disputants in other cases in terms of intragroup conflict situations.
- This study followed a cross-sectional time horizon path. This indicated that the data collection and data analysis was constrained within the PhD research period parameters (2016-2019). Hence, this research was incapable of monitoring changes in the results that occurred over a long period of time or investigating the behavioural changes of the disputants within an extensive digital information environment such as ESM environment. However, the time and resources constraints are obvious limitation in the PhD research journey.

Although this research suffers from the aforementioned limitations, these were justified, where required, in this thesis. In addition, this research gathered significant empirical evidence to illustrate the importance of DIF within the context of intragroup conflict in an extensive digital information environment such as ESM environment.

7.6 Future Research Recommendations

Based on the aforementioned limitations associated with the research findings, this research is able to identify new avenues which might have the potential to contribute to future research studies. This research raises six points that serve as a call for scholars and researchers to extend this work, which might generate interesting findings, e.g.:

- Although investigating intragroup conflict situations is considered a sensitive topic, which restrains researchers from obtaining sufficient access to large organisations, it might be possible in the future to identify multi-case studies. As a result, the sample size would be greater and the findings more generalisable. Moreover, extending this research through applying the multi-case study approach will help to execute a comparison between the findings of a single case study and multi case studies. This indeed will contribute to the methodological aspect of such studies.
- Future studies can validate the effects of DIF on intragroup conflict in an extensive digital information environment such as ESM environment through supporting the quantitative results by adopting a vignettes approach (qualitatively). As a result, the research will be able to evaluate the numeric findings in greater depth. The vignette approach is suitable for small sample sizes and sensitive information. On the other hand, utilising the vignettes approach along with the questionnaire technique might reveal additional themes that were not included in this research.
- Future research can extend the current research model by investigating the effects of control variables such as: gender, education level, hierarchical level, etc. This indeed will extend our knowledge and understanding regarding the embedded relationships in this research.
- Changing the data sample technique from simple random to cluster would enable researchers to identify the differences between each cluster based on the categorisation e.g. level of DIF, hierarchy level, geography, etc.
- It would constitute a significant contribution if future research were to apply the content analysis technique to an extensive digital information environment in order to analyse

the samples and words of users and so link them with intragroup conflict situations. This technique is powerful in covering the micro-communication aspects of this research.

The current research focused on a specific type of digital information environment, which is ESM. As explained, ESM considers as an exclusive digital platform for an organisation to communicate and share information. It might be beneficial for future studies to apply the current research model to conflict that arises on a public social media platform due to varying levels of DIF. For instance, platforms such as Twitter and Facebook are full of daily interactions among the users about different aspects e.g. politics, religion, managerial, etc. The research model can be applied to investigate the effect of DIF on different types of conflict on any extensive digital information environment. Also, taking into consideration specific geographical areas might provide an additional research avenue.

REFERENCES

- Adıgüzel, A. (2011). Bilgi okuryazarlığı Ölçeğinin geliştirilmesi. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi- Dicle University Journal of Ziya Gokalp Education Faculty*, 17, 15-28.
- Ahmad, M., Badusah, J., Mansor, A. Z., Karim, A. A., Khalid, F., & Daud, M. Y. (2016). The application of 21st century ICT literacy model among teacher trainees. *Turkish Online Journal of Educational Technology*, 15(3), 151-161.
- Ahmad, M., Karim, A. A., Din, R., & Albakri, I. S. M. A. (2013). Assessing ICT competencies among postgraduate students based on the 21st century ICT competency model. *Asian Social Science*, 9(16), 32-39.
- Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *Academy of Management Journal*, 39, 123– 148. doi:10.2307/256633 .
- Ancona, D. G., & Caldwell, D. F. (1992). Demography and design: Predictors of new product team performance. *Organization Science*, 3, 321–341.
- Andersson, U., Cuervo-Cazurra, A., & Nielsen, B. (2014) From the Editors: Explaining interaction effects within and across levels of analysis. *Journal of International Business Studies*, 45(9), 1063-1071. <http://dx.doi.org/10.1057/jibs.2014.50> .
- Atteya, N. M. (2013). Examining the Effect of the Conflict Management Strategies on Job Performance. *Journal of Organizational Psychology*, 13, 83-95.
- Barner-Rasmussen, W., Aarnio, C. (2011). Shifting the faultlines of language: a quantitative functional-level exploration of language use in MNC subsidiaries. *J. World Bus.* 46 (3), 288–295.
- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. DOI: 10.1037/0022-3514.51.6.1173 .
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1182. <http://dx.doi.org/10.1037/0022-3514.51.6.1173> .
- Baron, R.S. (1986). Distraction - conflict theory: progress and problems. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, 19, 1–40. DOI: 10.1016/S0065-2601(08)60211-7 .
- Barr, D., Houston, R., & St.Pierre, J. (2005). Digital Information Fluency – An Integral Component of Science Education in the 21st Century.
- Barrett, P. (2007). Structural equation modelling: Adjudging model fit, *Personality and Individual Differences*, 42, 815–824. DOI: 10.1016/j.paid.2006.09.018 .

Bauer, T., & Erdogan, B. (2015). *Organizational behavior*, Version 2.0. Washington, DC: Flat World Knowledge.

Behfar, K. J., Mannix, E. A., Peterson, R. S., & Trochim, W. M. (2011). Conflict in small groups: The meaning and consequences of process conflict. *Small Group Research*, 42(2), 127–176. doi:10.1177/1046496410389194.

Bendersky, C., & Hays, N. (2017). The Positive Effects of Status Conflicts in Teams Where Members Perceive Status Hierarchies Differently. *Social Psychological and Personality Science*, 8(2) 124-132. DOI: 10.1177/1948550616667614 .

Bendersky, C., & Hays, N. A. (2012). Status conflict in groups. *Organization Science*, 23, 323–340. <http://dx.doi.org/10.1287/orsc.1110.0734> .

Blau, O. M. (1964). *Exchange and Power in Social Life*. New York: Wiley.

Briggs, C., & Makice, K. (2012). Digital fluency: Building Success in the Digital Age. *SocialLens*.1-128.

http://www.socialens.com/blog/wpcontent/uploads/downloads/2012/01/SocialLens_Digital_Fluency_Sample1.pdf .

Brown, S., Gray, D., McHardy, J., & Taylor, K. (2015). Employee trust and workplace performance. *Journal of Economic Behavior & Organization*, 116, 361–378. <http://dx.doi.org/10.1016/j.jebo.2015.05.001>

Bryman, A., & Bell, E. (2015). *Business Research Methods*. Oxford University Press, 4th edition.

Campbell, J.P. (1990). Modeling the performance prediction problem in industrial and organizational psychology, in Dunnette, M.D. and Hough, L.M. (Eds), *Handbook of Industrial and Organizational Psychology*, Consulting Psychologists Press, Palo Alto, CA, 687-732.

Carnevale, A. P., & Smith, N. (2013). Workplace basics: The skills employees need and employers want. *Human Resource Development International*, 16(5), 491-501. <http://dx.doi.org/10.1080/13678868.2013.821267>.

Carnevale, P. J., & Probst, T. M. (1998). Social values and social conflict in creative problem solving and categorization. *Journal of Personality and Social Psychology*, 74, 1300–1309. doi:10.1037/0022-3514.74.5.1300.

Chen, I. S., & Tseng, F. T. (2016). The relevance of communication media in conflict contexts and their effectiveness: A negotiation experiment. *Computer in human behavior*, 59 ,134-141. <http://dx.doi.org/10.1016/j.chb.2016.01.039> .

Claro, M., Preiss, D. D., San Martín, E., Jara, I., Hinostroza, J. E., & Valenzuela, S. (2012). Assessment of 21st century ICT skills in Chile: Test design and results from high school level students. *Computers & Education*, 59(3), 1042-1053. <http://dx.doi.org/10.1016/j.compedu.2012.04.004> .

Cohen, J., Cohen, P., West, S. G., & Aiken, L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. London, UK: Lawrence Erlbaum.

- Çoklar, A., Yaman, N. D., Yurdakul, I. (2017). Information literacy and digital nativity as determinants of online information search strategies. *Computers in Human Behavior*, 70, 1-9. <http://dx.doi.org/10.1016/j.chb.2016.12.050> .
- Colbert, A., Yee, N., & George, G. (2016). The Digital workforce and the workplace of the future. *Academy of Management Journal*, 59(3), 731-739. <http://dx.doi.org/10.5465/amj.2016.4003> .
- Colquitt, J., & Zapata-Phelan, C. (2007). Trends in Theory Building and Theory Testing: a Five-Decade Study of the Academy of Management Journal. *Academy of Management Journal*, 50(6), 1281-1303. DOI: 10.5465/AMJ.2007.28165855 .
- Dawson, J. (2014). Moderation in Management Research: What, Why, When, and How. *Journal of Business and Psychology*, 29(1), 1-19. DOI: 10.1007/s10869-013-9308-7.
- De Dreu, C. K. W., & Gelfand, M. J. (Eds.). (2008). *The organizational frontiers series. The psychology of conflict and conflict management in organizations*. New York, NY, : Taylor & Francis Group/Lawrence Erlbaum Associates.
- De Dreu, C. K. W., & Knippenberg, D. (2005). The Possessive Self as a Barrier to Conflict Resolution: Effects of Mere Ownership, Process Accountability, and Self-Concept Clarity on Competitive Cognitions and Behavior. *Journal of Personality and Social Psychology*, 89(3), 345–357. DOI: 10.1037/0022-3514.89.3.345 .
- De Dreu, C. K. W., & Van Knippenberg, D. (2005). The possessive self as a barrier to conflict resolution: Effects of mere ownership, process accountability, and self- concept clarity on competitive cognitions and behavior. *Journal of Personality and Social Psychology*, 89, 345–357.
- De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, 88, 741–749.
- De Dreu, C. K. W., & Weingart, L. R. (2003b). Task versus relationship conflict, team effectiveness, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, 88, 741–749. doi:10.1037/ 0021-9010.88.4.741 .
- De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, 88, 741–749. DOI: 10.1037/0021-9010.88.4.741 .
- De Dreu, C.K. (2008). The virtue and vice of workplace conflict: food for (pessimistic) thought. *Journal of Organizational Behavior*, 29 (1), 5-18.
- De Jong, R., Schalk, R., & Curseu, P. (2008). Virtual communicating, conflicts and performance in teams. *Team Performance Management: An International Journal*, 14 (7/8) 364 – 380. <http://dx.doi.org/10.1108/13527590810912331> .
- De Wit, F. R. C., Greer, L., & Jehn, K. (2012). The Paradox of Intragroup Conflict: A Meta-Analysis. *Journal of Applied Psychology*, (2) 97, 360-390. DOI: 10.1037/a0024844.
- Dijkstra, M.T.M., van Dierendonck, D., Evers, A., & De Dreu, C.K.W. (2005). Conflict and Well-Being at Work: The Moderating Role of Personality. *Journal of Managerial Psychology*, 20 (2), 87-104.

- Dimas, I. D., & Lourenco P. R. (2015). Intragroup Conflict and Conflict Management Approaches as Determinants of Team Performance and Satisfaction: Two Field Studies. *Negotiation and Conflict Management Research*, 8 (3), 174-193. DOI: 10.1111/ncmr.12054 .
- Ferrari, A. (2012). Digital competence in practice: *An analysis of frameworks*. Seville: Joint Research Centre, Institute for Prospective Technological Studies. <http://dx.doi.org/10.2791/82116>.
- Frey, M., Patton, D., Gaskell, M., & McGregor, K. (2018) Artificial intelligence and inclusion: Formerly gang-involved youth as domain experts for analyzing unstructured Twitter Data. *Social Science Computer Review*, 1-15.
- Gallardo-Echenique, E., Oliveira, J., Marqués-Molias, L., & Esteve-Mon, F. (2015). Digital Competence in the Knowledge Society. *MERLOT Journal of Online Learning and Teaching*, 11 (1), 1-16.
- Gaskin, J. (2016). 2 Way Interactions. *Stats Tools Package*. Retrieved July 21, 2018, from <http://statwiki.kolobkreations.com> .
- George, J. M., & Jones, G. R. (2012) Understanding and Managing Organizational Behavior. 6th edition. Pearson Education, Inc. ISBN 978-0-13-612443-6.
- Greer, L.L., Jehn, K.A. and Mannix, E.A. (2008). Conflict transformation: a longitudinal investigation of the relationships between different types of intragroup conflict and the moderating role of conflict resolution. *Small Group Research*, 39 (3), 278-302.
- Grund, C., & Harbring, C., (2009). Trust and control at the workplace: evidence from representative sample of employees in Europe. *IZA Working Paper Number 4297 2009*. <http://ftp.iza.org/dp4297.pdf> (Access online: 14th Sep. 2018)
- Hair, J. F., Anderson, R. E., Tatham, R., & Black, W. (2010). Multivariate data analysis (7th ed.). Pearson.
- Hambrick, D. C. (2007). The field of management's devotion to theory: too much of a good thing? *Academy of Management Journal*, 50(6), 1346-1352.
- Hanif, F., Khan, M., Adeel, M., & Shah, S. M. (2016). Impact of Intra-group Conflict on Group Performance-moderating Role of Cultural Diversity. *Universal Journal of Management*, 4(2), 72–78. <http://10.13189/ujm.2016.040204>.
- Harman, H. H. (1967). *Modern factor analysis*. Chicago, IL: University of Chicago Press.
- Hayes, J. (2014). *The Theory and Practice of Change Management*. 4th edn, Palgrave Macmillan.
- Hinton, P., Brownlow, C., McMurray, I., & Cozens, B. (2004). *SPSS explained* Routledge.
- Hooper, D., Coughlan, J. and Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Articles*, p.2.
- Hu, L.-T., and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, 6, 1–55.

Iacobucci, D. (2010). Structural equations modeling: Fit indices, sample size, and advanced topics. *Sample Size, and Advanced Topics*.

Ilomäki, L., Paavola, S., & Lakkala, M. (2016) Digital competence – an emergent boundary concept for policy and educational research. *Education and Information Technologies*, 21(3), 655-679. DOI: 10.1007/s10639-014-9346-4 .

Jackson, D. L., Gillaspay Jr, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: an overview and some recommendations. *Psychological methods*, 14(1), 6-23.

Janssen, J., Stoyanov, S., Ferrari, A., Punie, Y., Pannekeet, K., & Sloep, P. (2013). Experts' views on digital competence: Commonalities and differences. *Computers & Education*, 68,473-481. <http://dx.doi.org/10.1016/j.compedu.2013.06.008> .

Janssen, O., Van de Vliert, E., & Veenstra, C. (1999). How task and person conflict shape the role of positive inter-dependence in management teams. *Journal of Management*, 25, 117–142. doi:10.1016/S0149-2063(99)80006-3 .

Jeffrey, L., Hegarty, B., Kelly, O., Penman, M., Coburn, D., & McDonald, J. (2011). Developing Digital Information Literacy in Higher Education: Obstacles and Supports. *Journal of Information Technology Education*, 10, 383-41.

Jehn, K. (1992). The impact of intragroup conflict on effectiveness: A multimethod examination of the benefits and detriments of conflict. Unpublished doctoral dissertation. Northwestern University Graduate School of Management, Evanston, IL.

Jehn, K. (1994). Enhancing effectiveness: An investigation of advantages and disadvantages of value-based intragroup conflict. *International Journal of Conflict Management*, 5, 223– 238.

Jehn, K. A. (1995). A multi-method examination of the benefits and detriments on intragroup conflict. *Administrative Science Quarterly*, 40, 256–282.

Jehn, K. A. (1997). Qualitative analysis of conflict types and dimensions in organizational groups. *Administrative Science Quarterly*, 42, 530–557.

Jehn, K. A., & Mannix, E. (2001). The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal*, 44, 238–251.

Jehn, K., & Bendersky, C. (2003). Intragroup conflict in organizations: A contingency perspective on the conflict-outcome relationship. *Research in Organizational Behavior*, 25, 187–242. ISSN: 0191-3085/doi:10.1016/S0191-3085(03)25005-X .

Jehn, K., Greer, L., Levine, S., & Szulanski, G. (2008). The Effects of Conflict Types, Dimensions, and Emergent States on Group Outcomes. *Group Decision and Negotiation*, 17(6), 465-495. Doi: 10.1007/s10726-008-9107-0.

Jehn, K.A., Northcraft, G.B. & Neale, M.A. (1999). Why differences make a difference: a field study of diversity, conflict and performance in workgroups. *Administrative Science Quarterly*, 44 (4), 741-763.

Jiang, H., Luo, Y., & Kulemeka, O. (2016). Strategic Social Media Use in Public Relations:

- Professionals' Perceived Social Media Impact, Leadership Behaviors, and Work-Life Conflict. *International Journal of Strategic Communication*, 1-14. <http://dx.doi.org/10.1080/1553118X.2016.1226842> .
- Jimenez, A., Boehb, D. M., Tarasc, V., & Caprar, D. (2017) Working across Boundaries: Current and Future Perspectives on Global Virtual Teams. *Journal of International Management*. 23 (4), 341-349. <http://dx.doi.org/10.1016/j.intman.2017.05.001>
- Jong, R., Schalk, R., & Curseu, R. (2008). Virtual communicating, conflicts and performance in teams. *Team Performance Management*, 14 (7,8), 364-380. <http://www.emeraldinsight.com/doi/10.1108/13527590810912331> .
- Kabanoff, B. (1991). Equity, equality, power, and conflict. *Academy of Management Review*, 16, 416-441.
- Kankanhalli, A., Tan, B., & Wei, K. (2006). Conflict and Performance in Global Virtual Teams. *Journal of Management Information Systems*, 23 (3), 237-274. <http://www.tandfonline.com/doi/full/10.2753/MIS0742-1222230309> .
- Kark, R. and Van Dijk, D. (2007). Motivation to lead, motivation to follow: The role of the self-regulatory focus in leadership processes. *Academy of Management Review*. (32), 500-528.
- Kazimoto, P. (2013). Analysis of conflict management and leadership for organizational change. *International Journal of Research In Social Sciences*,1(3), 16-25.
- Kefela, G. T. (2010). Knowledge-based economy and society has become a vital commodity to countries. *International NGO Journal*, 5(7), 160-166.
- Kilani, M., Al Junidi, R., & Al Riziq, R. (2015). The role that Nepotism (Wasta) plays in conflict and conflict management within groups in private organizations in Jordan and MENA region. *Middle East Journal of Business*, 10 (3), 59-69. <http://search.ebscohost.com.ezproxy.liv.ac.uk/login.aspx?direct=true&db=bth&AN=110440883&site=eds-live&scope=site> .
- Kivunja, C. (2014). Theoretical perspectives of how digital natives learn. *International Journal of Higher Education*, 3(1), 94-109.
- Klitmøller, A., Schneider, S.C., & Jonsen, K., (2015). Speaking of global virtual teams: language differences, social categorization and media choice. *Pers. Rev.* 44 (2), 270-285.
- Koc, M., & Barut, E. (2016). Development and validation of New Media Literacy Scale (NMLS) for university students. *Computers in Human Behavior*, 63, 834-843. <http://dx.doi.org/10.1016/j.chb.2016.06.035> .
- Koopmans, L., Bernaards, C., Hildebrandt, V., van Buuren, S., der Beek, A., & de Vet, H. (2013). Development of an individual work performance questionnaire. *International Journal of Productivity and Performance Management*, 62(1), 6-28. <https://doi.org/10.1108/17410401311285273> .
- Korovyakovskaya, I., & Chong, H. (2016). An investigation of the relationships between three types of conflict and perceived group performance in culturally diverse work groups. *Journal of Organizational Culture, Communications and Conflict*, (20) 1, 30-47.
- Lanvin, B., & Kralik, M. (2009). E-skills: Who made that big dent in my flat world? *Information Technologies and International Development*, 5(2), 81-84.

- Lee Rodgers, J. & Nicewander, W.A. (1988). Thirteen ways to look at the correlation coefficient. *The American Statistician*, 42(1), 59-66.
- Lee, J., Lee, J. N., and Tan, B. C. (2015). Antecedents of cognitive trust and affective distrust and their mediating roles in building customer loyalty. *Information Systems Frontiers*, 17(1), 159-175.
- Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, 19(1), 1–19. <http://doi.org/10.1111/jcc4.12029> .
- Liu, Z., Deng, C., Wu, B., & Ge, L. (2017). Workplace Conflict, Status-conferral Criteria and Job Performance: Status Competition Perspective. *Academy of Management Journal*, 1, 16085. <https://doi.org/10.5465/ambpp.2017.16085abstract>.
- Lovelace, K., Shapiro, D.L. & Weingart, L.R. (2001). Maximizing cross-functional new product teams' innovativeness and constraint adherence: a conflict communications perspective. *Academy of Management Journal*, 44 (4),779-793.
- Martínez-Moreno, E., Zornoza, A., González-Navarro, P., & Thompson, L. (2012). Investigating Face-to-Face and Virtual Teamwork Over Time: When Does Early Task Conflict Trigger Relationship Conflict?. *Group Dynamics: Theory, Research, and Practice*, 2012, 16(3), 159–171. Doi: 10.1037/a0029569.
- Mazmanian, M., Orlikowski, W. J., & Yates, J. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization Science*, 24(5), 1337–1357.
- Medina, F.J., Munduate, L. & Dorado, M.A. (2005). Types of intragroup conflict and affective reactions. *Journal of Managerial Psychology*, 20 (3/4), 219-230.
- Mengual-Andres, S., Roig-Vila, R., & Mira, J. B. (2016). Delphi study for the design and validation of a questionnaire about digital competences in higher education. *International Journal of Educational Technology in Higher Education*, 13(1), 1-11. <http://dx.doi.org/10.1186/s41239-016-0009-y> .
- McCarter, M.W., Wade-Benzoni, K.A., Kamal, D.K.F., Bang, H.M., Hyde, S.J. & Maredia, R. (2018). Models of intragroup conflict in management: A literature review. *Journal of Economic Behavior & Organization*, 1-22. <https://doi.org/10.1016/j.jebo.2018.04.017>
- Mooney, A.C., Holahan, P.J. & Amason, A.C. (2007). Don't take it personally: exploring cognitive conflict as a mediator of affective conflict. *Journal of Management Studies*, 44 (5), 733-758.
- Moye, N. A., & Langfred, C. W. (2004). Information sharing and group conflict: Going beyond decision making to understand the effects of information sharing on group performance. *International Journal of Conflict Management*, 15(4), 381-410.
- Nesterkin, D., Porterfield, T., & Li, X. (2016). Relationship Conflict, Conflict Management, and Performance of Information Technology Teams. *Journal of Computer Information Systems*, 56(3), 194-203.

Nordin, S. M., Sivapalan, S., Bhattacharyya, E., Hashim, H., Ahmad, W. F., & Abdullah, A. (2014). Organizational Communication Climate and Conflict Management: Communications Management in an Oil and Gas Company. *Procedia - Social and Behavioral Sciences*. 2nd

World Conference On Business, Economics And Management -WCBEM 2013, 109, 1046 – 1058. <http://10.1016/j.sbspro.2013.12.587> .

Omisore, B. O., & Abiodun, A. R. (2014). Organizational conflicts: Causes, effects and remedies. *International Journal of Academic Research in Economics and Management Sciences*, 3(6), 118–137.

Partnership for 21st century skills. (2008). 21st century skills, education & competitiveness: A resource and policy guide. Washington: Author.

Patton, D. U., Eschmann, R. D., & Butler, D. A. (2013). Internet banging: New trends in social media, gang violence, masculinity and hip hop. *Computers in Human Behavior*, 29, A54–A59. doi:10.1016/j.chb.2012. 12.035

Pelled, L.H., Eisenhardt, K.M. and Xin, K.R. (1999). Exploring the black box: an analysis of work group diversity, conflict and performance. *Administrative Science Quarterly*, 44 (1), 1-28.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879.

Podsakoff, P.M. & MacKenzie, S.B. (1989). *A Second Generation Measure of Organizational Citizenship Behavior*, Indiana University, Bloomington, IN.

Pondy, L. R. (1967). Organizational conflict: Concepts and models. *Administrative Science Quarterly*, 12, 296–320.

Prokopec, S. & Supérieure, É. (2013) Coram Populo — In the Presence of People : The Effect of Others in Virtual Worlds. *Journal of Computer-Mediated Communication*, 18, 265-282[Online] (April). Available from: doi:10.1111/jcc4.12007.

Rahim, M. A. (2015). *Managing conflict in organizations*. NJ: Transaction Publishers.

Rahim, M. A. & Bonoma, T. (1979) Managing Organizational Conflict: A Model for Diagnosis and Intervention. *Psychological Reports*, 44 (3), 1323-1344. <https://doi.org/10.2466/pr0.1979.44.3c.1323>

Raver, J. L., & Gelfand, M. J. (2005). Beyond the individual victim: Linking sexual harassment, team processes, and team performance. *Academy of Management Journal*, 48, 387–400.

Reinares-Lara, E., Martín-Santana, J.D., & Muela-Molina, C. (2016). The effects of accent, differentiation, and stigmatization on spokesperson credibility in radio advertising. *J. Glob. Mark.* 29 (1), 15–28.

Ridgeway, C. L., H. A. Walker. (1995). Status structures. K. Cook, G. Fine, J. House, eds. *Sociological Perspectives on Social Psychology*. Allyn & Bacon, Newton, MA, 281–310.

Robbison, M. A., (2018). Using multi-item psychometric scales for research and practice in human resource management. *Human Resource Management*, 57 (3), 739-750.

<https://doi.org/10.1002/hrm.21852>

Robbins, S.P. (2005). Conflict and negotiation, in Robbins, S.P. (Ed.), *Organizational Behavior*, 11th ed., Prentice-Hall, Upper Saddle River, NJ.

Roseman, I.J., Wiest, C., & Swartz, T.S., (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology*, 67 (2), 206–221.

Santos, C., Passos, A., Uitdewilligen, S., & Nübold, A. (2016). Shared temporal cognitions as substitute for temporal leadership: An analysis of their effects on temporal conflict and team performance. *The Leadership Quarterly*, 27 (4), 574-587. <http://dx.doi.org/10.1016/j.leaqua.2015.12.002> .

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A. & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99, 323-338.

Shah, P.P., & Jehn, K.A. (1993). Do friends perform better than acquaintances? The interaction of friendship, conflict, and task, *Group Decision and Negotiation*, 2(2), 149-165.

Siddiq, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills (TEDDICS): A new construct in 21st century education. *Computers & Education*, 92-93, 1-14. <http://dx.doi.org/10.1016/j.compedu.2015.10.006> .

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology*, 85, 102–111.

Skarlicki, D. P., Folger, R., & Tesluk, P. 1999. Personality as a moderator in the relationship between fairness and retaliation. *Academy of Management Journal*, 42: 100 –108.

Smith, A. M. J., & Paton, R. A. (2014). Embedding enterprise education: A service based transferable skills framework. *International Journal of Management Education*, 12(3), 550-560. <http://dx.doi.org/10.1016/j.ijme.2014.02.002> .

Snow, E., & Katz, I. R. (2009). Using cognitive interviews to validate an interpretive argument for the ETS iSkills™ assessment. *Communications in Information Literacy*, 3(2), 99-127.

Somerville, M. M., Smith, G. W., & Macklin, A. S. (2008). The ETS iSkills™ assessment: A digital age tool. *Electronic Library*, 26(2), 158-171. <http://dx.doi.org/10.1108/02640470810864064> .

Spaho, K. (2013). Organizational Communication and Conflict. *Management*, 18, 103–118.

Stajkovic, A. D., & Luthans, F. (1997). A meta- analysis of the effects of organizational behavior modification on task performance, 1975–1995. *Academy of Management Journal*, 40, 1122–1149.

Suhr, D. (2006). *The basics of structural equation modeling*. Presented: Irvine, CA, SAS User Group of the Western Region of the United States (WUSS).

Tennant, A. and Conaghan, P.G. (2007). The Rasch measurement model in rheumatology: what is it and why use it? When should it be applied, and what should one look for in a Rasch paper?. *Arthritis & Rheumatism (Arthritis Care & Research)*, 57(8), 1358-1362.

- Tjosvold, D. and De Dreu, C. K. W. (1997). Managing conflict in Dutch organizations: A test of the relevance of Deutsch's cooperation theory. *Journal of Applied Social Psychology*, 27 (24), 2213-2227.
- Toma, C., & Butera, F. (2009). Hidden profiles and concealed information: Strategic information sharing and use in group decision-making. *Personality and Social Psychology Bulletin*, 35, 793–806.
- University of Sussex (2015). Technology can transfer human emotions to your palm through air, say scientists. ScienceDaily. www.sciencedaily.com/releases/2015/04/150420101012.htm (accessed August 20, 2018).
- Van der Vegt, G. S., & Bunderson, J. S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *Academy of Management Journal*, 48, 532–547.
- Van Laar, E., van Deursen, A., van Dijk, J., & de Han, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computer in human behavior*, 72, 577-588. <http://dx.doi.org/10.1016/j.chb.2017.03.010> .
- Van Scotter, J.R. & Motowidlo, S.J. (1996). Interpersonal facilitation and job dedication as separate facets of contextual performance. *Journal of Applied Psychology*, 81, 525-531.
- Vimala Nunavath & Morten Goodwin (2018). The Role of Artificial Intelligence in Social Media Big data Analytics for Disaster Management - Initial Results of a Systematic Literature Review. *International Conference on Information and Communication Technologies for Disaster Management (ICT-DM)*. DOI: [10.1109/ICT-DM.2018.8636388](https://doi.org/10.1109/ICT-DM.2018.8636388)
- Wachsmuth, S., Jowett, S., & Harwood, C. (2016). Conflict among athletes and their coaches: what is the theory and research so far? *International review of sport and exercise psychology*, 10 (1), 84-107. <http://dx.doi.org/10.1080/1750984X.2016.1184698> .
- Wang, Q. E., Myers, M. D., & Sundaram, D. (2013). Digital natives and digital immigrants towards a model of digital fluency. *Business & Information Systems Engineering*, 5(6), 409–419.
- Wehner, B., Ritter, C., & Lesit, S. (2016). Enterprise social networks: A literature review and research agenda. *Computer Networks*, 1-18. <http://dx.doi.org/10.1016/j.comnet.2016.09.001> .
- Welch, D.E., & Welch, L.S., (2008). The importance of language in international knowledge transfer. *Manag. Int. Rev.* 48 (3), 339–360.
- Williams, I. A. (2011). Conflict Management Styles and Job Satisfaction by Organizational Level and Status in a Private University. ProQuest LLC, Ph.D. (Dissertation, 178), Northcentral University.
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management*, 17(3), 601-617. DOI: 10.1177/014920639101700305.
- Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: The role of intragroup emotional processing. *Journal of Organizational Behavior*, 25, 589–605.
- Yu, T., Lin, M., & Lio, Y. (2017). Understanding factors influencing information

communication technology adoption behavior: The moderators of information literacy and digital skills. *Computer in Human Behavior*, 71, 196-208.

<http://dx.doi.org/10.1016/j.chb.2017.02.005> .

Yuan, J., & Jing, R. (2014). Good to Great: Build strong and vital teams. *International Journal of U- and E- Service, Science and Technology*, 7 (1), 37-50.

<http://dx.doi.org/10.14257/ijunesst.2014.7.1.04> .

Zajonc, R. B. (1965). Social facilitation. *Science*, 149, 269-274.

Zander, L., Mockaitis, A.I., & Butler, C.L., (2012). Leading global teams. *J. World Bus.* 47 (4), 592–603.

APPENDICES

Appendix 1: Ethical Approval



College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London
Kingston Lane
Uxbridge
UB8 3PH
United Kingdom
www.brunel.ac.uk

22 May 2017

LETTER OF APPROVAL

Applicant: Mr. Ismaeel Ebrahim

Project Title: The Moderating Effects of Digital Fluency on the Relationship of Intra-Group Conflict and Employee's Task Performance

Reference: 6613-LR-May2017- 7268-1

Dear Mr. Ismaeel Ebrahim

The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee by way of an application for an amendment.

Please note that:

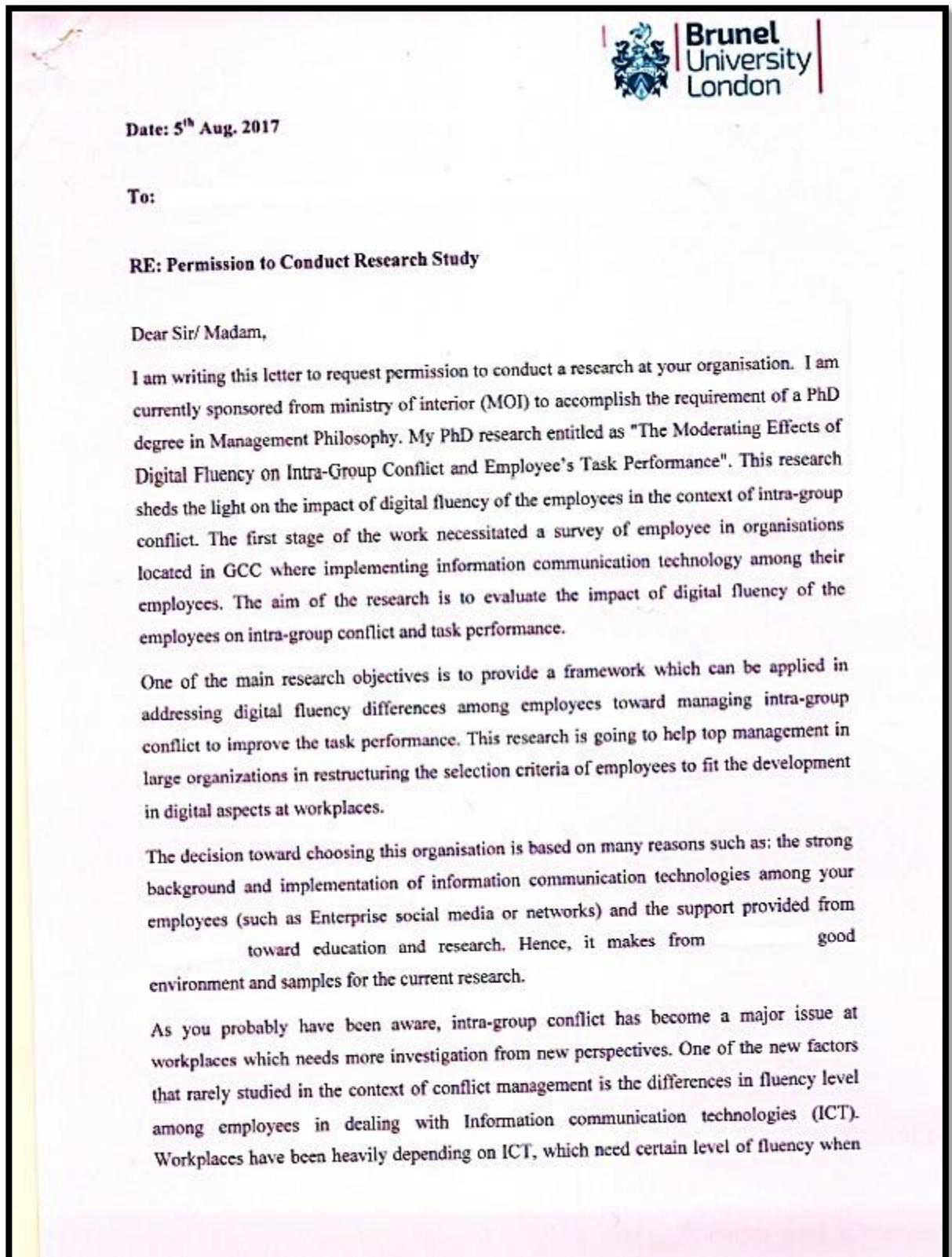
- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee.
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.
- The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.
- You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and is a disciplinary offence.

Professor James Knowles

Chair

College of Business, Arts and Social Sciences Research Ethics Committee
Brunel University London

Appendix 2: Letter of permission 2 (Organisation Y):



dealing with ICT. Thus, it becomes highly important to shed the light on employee's digital fluency and its impact on intra-group conflict and task performance.

Your employees' participation in this project will eventually help to evaluate the influence of digital fluency of the employee in managing intra-group conflict toward enhancing their task performance. You are assured of confidentiality and that any identifying information will be destroyed at the data processing stage of the research. Please be assured that the identity of your employees from all the levels (administrative, executory and operative) of your organisation shall remain strictly confidential. The questionnaire will take about 10-15 minutes to complete.

If you would like a summary of the research findings I should be pleased to forward a copy on completion of the research. If you have any further questions or would like a discussion with me prior to making up your mind, please contact me on [+973 39222500](tel:+97339222500) or [+44 \(0\)7448952740](tel:+4407448952740). Also, you can contact me at my official email address: ismaeel.ebrahim@brunel.ac.uk. Your approval to conduct this study will be greatly appreciated and gratefully received; I hope you will be able to assist in furthering my research studies.

If you agree, kindly sign below and return the signed form by official email mentioned above. Alternatively, kindly submit a signed letter of permission on your company's letterhead acknowledging your consent and permission for me to conduct this survey/study at your organisation.

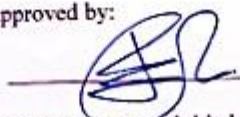
Yours Sincerely,

Ismaeel N. M. A. Ebrahim

PhD Research Student



Approved by:


Print your name and title here

10/8/17

GM Human Resources & Corporate Service
Signature

Date

Appendix 3: Letter of Permission 1 (Company X - Pilot Test):



Date: 10th Aug. 2017

To:

RE: Permission to Conduct Research Study (Pilot Study)

Dear Sir/ Madam,

I am writing this letter to request permission to conduct a research at your organisation. I am currently sponsored from ministry of interior (MOI) to accomplish the requirement of a PhD degree in Management Philosophy. My PhD research entitled as "The Moderating Effects of Digital Information Fluency on Intra-Group Conflict and Employee's Task Performance". This research sheds the light on the impact of digital fluency of the employees in the context of intra-group conflict. The first stage of the work necessitated a survey of employee in organisations located in GCC where implementing information communication technology among their employees. The aim of the research is to evaluate the impact of digital fluency of the employees on intra-group conflict and task performance.

One of the main research objectives is to provide a framework which can be applied in addressing digital fluency differences among employees toward managing intra-group conflict to improve the task performance. This research is going to help top management in organizations in restructuring the selection criteria of employees to fit the development in digital aspects at workplaces.

The decision toward choosing this organisation is based on many reasons such as: the strong background and implementation of information communication technologies among your employees (such as Enterprise social media or networks) and the support provided from toward education and research. Hence, it makes from good environment and samples for the current research.

As you probably have been aware, intra-group conflict has become a major issue at workplaces which needs more investigation from new perspectives. One of the new factors that rarely studied in the context of conflict management is the differences in fluency level among employees in dealing with Information communication technologies (ICT). Workplaces have been heavily depending on ICT, which need certain level of fluency when

AS
A

dealing with ICT. Thus, it becomes highly important to shed the light on employee's digital fluency and its impact on intra-group conflict and task performance.

Your employees' participation in this project will eventually help to evaluate the influence of digital fluency of the employee in managing intra-group conflict toward enhancing their task performance. You are assured of confidentiality and that any identifying information will be destroyed at the data processing stage of the research. Please be assured that the identity of your employees from all the levels (administrative, executory and operative) of your organisation shall remain strictly confidential. The questionnaire will take about 10-15 minutes to complete.

If you would like a summary of the research findings I should be pleased to forward a copy on completion of the research. If you have any further questions or would like a discussion with me prior to making up your mind, please contact me on [+973 39222500](tel:+97339222500) or [+44 \(0\)7448952740](tel:+4407448952740). Also, you can contact me at my official email address: ismael.ebrahim@brunel.ac.uk. Your approval to conduct this study will be greatly appreciated and gratefully received; I hope you will be able to assist in furthering my research studies.

If you agree, kindly sign below and return the signed form by official email mentioned above. Alternatively, kindly submit a signed letter of permission on your company's letterhead acknowledging your consent and permission for me to conduct this survey/study at your organisation.

Yours Sincerely,

Ismacel N. M. A. Ebrahim

PhD Research Student

Approved by:

Eng.
General Manager
Print your name and title here



Signature

14/8/2017

Date



Appendix 4: The Online Questionnaire:

10/29/2018 The Moderator Effects of Digital Information Fluency on Intra-Group Conflict.

The Moderator Effects of Digital Information Fluency on Intra-Group Conflict.

Dear Respondent,

This survey is being carried out as part of my PhD dissertation to evaluate the impact of digital information fluency on Intra-group conflict and task performance of the employees. The questionnaire aims to measure individuals abilities toward digital information and its effects on Intra-group conflict at workplaces. Please answer the questions freely. You do not have to identify yourself and you can remain anonymous. The questionnaire should take about 10 - 15 minutes to complete. Please answer the questions in the space provided.

Thank you for your cooperation ...

The Researcher:
Ismaeel Ameen
Brunel Business School - Brunel University London,
United Kingdom
Ismaeel.ebrahim@brunel.ac.uk

* Required

Part One: Research Framework Questions:

- Part A: Digital Information Fluency

Underneath are four characteristics of digital information fluency. Please, evaluate yourself based on each characteristic by allocating your opinion/position based on the 5-Likerts scales as follow (Indicate all that apply):

1- Defining and Evaluating Digital Information:

Indicate on the 5-Likerts scales (1-Strongly Disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly Agree) to what extent you agree in each of the following statement about defining and evaluating digital information:

1. **1. I am fluent in looking for required information in the enterprise social media. ***
Mark only one oval.

1 2 3 4 5

Strongly Disagree Strongly Agree

2. **2. I am fluent in comparing information across different sources on the internet. ***
Mark only one oval.

1 2 3 4 5

Strongly Disagree Strongly Agree

3. **3. I am fluent in assessing information in social media in terms of credibility, reliability, objectivity and accuracy. ***
Mark only one oval.

1 2 3 4 5

Strongly Disagree Strongly Agree

https://docs.google.com/forms/d/1yZ-wNaEJT9Ca-Ej1pDSyJl_5FWEMuhDnHf1VG98xLDA/edit 1/11

2- Access to Digital Information:

- Based on the statements below and the following 5-Likerts scales (1-Insufficient, 2-Below Average, 3-Average, 4-Above Average, 5-Very Good), how would you rate your level of fluency in accessing digital information?

4. 4. Using searching tools to get the required information in the enterprise social media. *

Mark only one oval.

	1	2	3	4	5	
Insufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

5. 5. Using software and hardware if necessary to reach information needed. *

Mark only one oval.

	1	2	3	4	5	
Insufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

6. 6. Using basic operating tools (button, hyperlinks, file transfer etc.) and apply it on the enterprise social media to reach information needed. *

Mark only one oval.

	1	2	3	4	5	
Insufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

3- Use of Digital Information:

- Based on the statements below and the following 5-Likerts scales (1-Very Bad, 2-Bad, 3-Reasonable, 4-Good, 5-Very Good), how would you rate your ability about the usage of digital information at your workplace?

7. 7. Ability to organize and gather information systematically to use as a problem solution. *

Mark only one oval.

	1	2	3	4	5	
Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

8. 8. Ability to analyse information in the enterprise social media to achieve goals. *

Mark only one oval.

	1	2	3	4	5	
Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

9. 9. Ability to share information and messages with colleagues at the enterprise social media. *

Mark only one oval.

	1	2	3	4	5	
Very Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

4- Ethical and Legal Usage of Digital Information:

- Based on the statements below and the following 5-Likerts scales (1-Never, 2-Rarely, 3-Sometimes, 4-Frequently, 5-Always), assess the frequency of using digital information ethically and legally:

10. 10. Create digital information contents that don't comply with legal and ethical rules. *

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

11. 11. Access and use information illegally. *

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

12. 12. Evaluate digital information in terms of legal and ethical rule (Copyright, human rights, etc.). *

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

Section B: Task Performance

Underneath are three characteristics of task performance. Please, evaluate yourself based on each characteristic by filling in the blanks based on the 5-Likerts scales (Indicate all that apply):

1- The Quality and Proficiency of The Task

- To what extent you evaluate the quality and the proficiency of the end-result of the tasks you've accomplished and assigned to you? Use the 5-Likerts scales (1-Insufficient, 2-Below Average, 3-Average, 4-Above Average, 5-Very Good) to complete the statements underneath ...

13. 1. I can rate the quality of my own work to be *

Mark only one oval.

	1	2	3	4	5	
Insufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

14. 2. My administrator rates the quality of my work as *

Mark only one oval.

	1	2	3	4	5	
Insufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	very Good

15. 3. The quality of my accomplished tasks is comparing to the (benchmark) formal performance requirements of my job. *

Mark only one oval.

1	2	3	4	5		
Insuficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

16. 4. I am in terms of fulfilling the specified responsibilities in my job description. *

Mark only one oval.

1	2	3	4	5		
Insuficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Good

2- The Quantity of The Task

- Use the 5-Likerts scales (1-Far too Little, 2-Small, 3-About Right, 4-Large, 5-Very Large) to complete the statements underneath to describe the quantity of the task that you accomplished during last quarter of this year ...

17. 5- I can describe the quantity of my own work to be *

Mark only one oval.

1	2	3	4	5		
Far Too Little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Large

18. 6. My administrator rates the quantity of my work as *

Mark only one oval.

1	2	3	4	5		
Far Too Little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Large

19. 7- The quantities of my accomplished tasks are comparing to the (benchmark) formal performance requirements of my job. *

Mark only one oval.

1	2	3	4	5		
Far Too Little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Large

20. 8- I perform tasks comparing with the specified responsibilities of my job description. *

Mark only one oval.

1	2	3	4	5		
Far Too Little	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Large

3- Time Element Toward The Tasks

- Use the 5-Likerts scales (1-Never, 2-Rarely, 3-Sometimes, 4-Frequently, 5-Always) to complete the statements underneath to describe your time management skills regards toward tasks that assigned to you during last quarter of this year ...

21. **9. I manage to plan my work to make it done on time. ***

Mark only one oval.

1	2	3	4	5		
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

22. **10. I spend great deal of time with personal phone conversations and personal social media accounts. ***

Mark only one oval.

1	2	3	4	5		
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

23. **11. My administrator says to me that I take undeserved work breaks. ***

Mark only one oval.

1	2	3	4	5		
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

24. **12. I had trouble setting priorities at my work. ***

Mark only one oval.

1	2	3	4	5		
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

Section C: Intra-group Conflict

Underneath are four dimensions of intra-group conflict. Please, evaluate the situation at your workplace based on each characteristic by allocating your opinion/position based on the 5-Likerts scales (Indicate all that apply):

1- Task Conflict

- Indicate on the 5-Likerts scales (1-Strongly Disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly Agree) to which extent you agree with each of the following statements:

25. **1. In my workplace there are exaggerated disagreements regarding the work being done. ***

Mark only one oval.

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

26. **2. Most of the members in my workplace are facing mismatching of ideas. ***

Mark only one oval.

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

27. 3. The differences between opinions in my workplace are obvious. **Mark only one oval.*

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

28. 4. There are disagreements within your workplace about the task you are working on. **Mark only one oval.*

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

29. 5. Most of the members at the workplace agree on the path of the task from the beginning. **Mark only one oval.*

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

30. 6. We rarely have matching ideas on the subjects that my colleagues are involved in. **Mark only one oval.*

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

31. 7. There are mismatching on the exceptions rather than the rules. **Mark only one oval.*

1	2	3	4	5		
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

2- Relationship Conflict

- Indicate on the 5-Likerts scales (1-None, 2-Very Little, 3-Some, 4-Quit a bit, 5-A lot) to which extent the level of relationship conflict by going through the next questions/statements:

32. 1. How much are personality conflicts evident in your organization? **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

33. 2. How much friction is there among members in your organization? **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

34. 3. How much tension is there among members in your organization? **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

35. 4. How much emotional conflict is there among members in your organization? **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

36. 5. The personal relationships were always excellent. **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

37. 6. Some colleagues visibly disliked each other. **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

38. 7. The tension between some colleagues was sometimes painful. **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

39. 8. Some colleagues didn't get on personally. **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

40. 9. How much do you cope within the atmosphere in the workplace? **Mark only one oval.*

1	2	3	4	5		
None	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	A lot

3- Process Conflict

- Indicate on the 5-Likerts scales (1-Never, 2-Rarely, 3-Sometimes, 4-Frequently, 5-Always) to which extent the frequency of process conflict by filling in the gap the next statements:

41. **1. My colleagues disagree about resource allocation in the organization I am working at. ***

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

42. **2. I observe incompatibilities at the organization about task responsibilities. ***

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

43. **3. My colleagues..... disagree about the way of completing a certain task. ***

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

44. **4. I notice conflict about who should do what in our organisation. ***

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

45. **5. Agreeing on the process of any task the case among my colleagues. ***

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

4- Status Conflict

- Indicate on the 5-Likerts scales (1-Strongly Disagree, 2-Disagree, 3-Uncertain, 4-Agree, 5-Strongly Agree) to which extent you agree with each of the following statements:

46. **1. My organisation members frequently took sides (i.e., formed coalitions) during conflicts. ***

*

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

47. **2. My organisation members experienced conflicts due to members trying to assert their dominance. ***

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

48. **3. My organisation members compete to get influence. ***

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

49. **4. My organisation members disagreed about the relative value of members' contributions. ***

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

50. **5. There are vertical tensions between lower and upper levels in the hierarchy of the organization. ***

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Part Two: General Questions and Background Information:

51. **1- What is your gender? ***

Mark only one oval.

- Male
 Female

52. **2- What is your age? ***

Mark only one oval.

- 25 or under
 26-40
 41-55
 over 56

53. 3- What is your annual income level? **Mark only one oval.*

- Less than \$ 12,999
- \$13,000 - \$25,999
- \$26,000 - \$47,999
- \$ 48,000 or more

54. 4- What is your education level? **Mark only one oval.*

- Up to High School
- Diploma
- Undergraduate degree
- Master
- PhD

55. 5- During your educational or practical life, have you worked, trained or taught to deal with information and communication technology that used in workplaces such as enterprise social media? **Mark only one oval.*

- Yes *Skip to question 56.*
- NO *Skip to question 57.*
- Other: _____

Continue Part Two**56. Can you give some examples about the training and the education related to information communication technology?**

Continue Part Two**57. 6- What is your category at your workplace? ****Mark only one oval.*

- Top management (Administrative)
- Middle level (Executor)
- Low level (Operative)

58. 7- Are you familiar with Enterprise social media such as: (Facebook at Work, Yammer, Chatter, LinkedIn ... etc.)? *

Mark only one oval.

- Yes Skip to question 59.
- No
- Other: _____

Continue Part Two

59. 8- If the answer of the previous question is YES, How many times do you use enterprise social media for work or knowledge purposes? *

Mark only one oval.

- Hourly
- Daily
- Weekly
- Monthly
- Other: _____

Thank you for your time and participation...

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