



**THE ROLE OF CULTURAL INTELLIGENCE IN
FACILITATING TACIT KNOWLEDGE SHARING IN
AUSTRALIAN INFORMATION AND COMMUNICATION
TECHNOLOGY ORGANISATIONS**

A Thesis submitted by

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Abstract

In a world of rapidly changing technology, ICT companies require significant tacit knowledge transfer for product development and innovation as well as for sustainable and competitive advantage. However, transferring tacit knowledge among culturally diverse ICT professionals can be challenging due to cultural differences. Thus, ICT professionals require specific skills – awareness, and understanding of cultural differences, interest in interacting with other cultural co-workers and willingness to adjust their behaviour in cross-cultural interactions – to function effectively in a culturally diverse workplace. Cultural intelligence (CQ) – the capability to function and manage effectively in cross-cultural settings – can aid ICT professionals in overcoming cross-cultural interaction challenges. CQ comprises four components: metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ. While research suggests these components help individuals interact effectively in culturally diverse settings, the link between CQ components and tacit knowledge sharing in a culturally diverse workplace setting has not been adequately addressed in the literature. The objective of this research, therefore, is to explore the role of CQ components in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting.

This study uses a qualitative research approach, with data collected through 36 semi-structured in-depth interviews with ICT professionals in culturally diverse work settings in Australian ICT organisations. A literature review provides the research foundation and a theoretical context that informed participant selection and interview protocol. This study uses thematic analysis to provide the interpretive perspective necessary for analysing the collected qualitative data.

The study makes three significant findings. The first is that the four CQ components each play an important role in facilitating tacit knowledge sharing through relevant sub-dimensions. From the interview data, evidence emerged that metacognitive CQ aids in developing the ability of Australian ICT professionals to select an appropriate tacit knowledge-sharing approach; cognitive CQ enhances their tacit knowledge-sharing intention and behaviour; motivational CQ increases willingness to share tacit knowledge in a cross-cultural work setting; and, finally, behavioural CQ assists in

developing an attitude that supports sharing tacit knowledge. A second major finding is that all four CQ components are interrelated and interact synergistically in facilitating tacit knowledge sharing. The third major finding is that there is empirical support for the theoretical assumption of a link between tacit knowledge sharing and CQ outcomes.

This study increases understanding of how all four CQ components play their roles in facilitating tacit knowledge sharing, and adds to the knowledge of the domain of CQ and knowledge management in the ICT industry context. Additionally, this research offers a practical conceptual framework for using CQ that can be deployed in culturally diverse ICT work settings to understand the importance of CQ and how CQ components can be utilised to share tacit knowledge effectively. This framework extends the literature on CQ and knowledge management by explaining the relationship between CQ components and tacit knowledge sharing. ICT organisations need to focus on enhancing ICT professionals' CQ in order to assist them in sharing their tacit knowledge in a culturally diverse work setting.

Certification of Thesis

This Thesis is entirely the work of Mr Mutharasu Murugan except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Associate Professor Eric Kong

Associate Supervisor: Dr Frances Woodside

Student and supervisors' signatures of endorsement are held at the University.

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List of Abbreviations

ICT Information and communication technology

GDP Gross Domestic Product

CQ Cultural Intelligence

KS Knowledge sharing

ACS Australian Computer Society

Chapter 1 Introduction

1.1 Introduction

This chapter provides an overview of the entire thesis. It begins by introducing the objective and overview of the research study in Section 1.2. To provide context, there is a discussion of contemporary challenges in the ICT sector in Section 1.3. Section 1.4 provides an outline of cultural intelligence (CQ) and tacit knowledge sharing. Section 1.5 describes the method employed to answer the research questions, then Section 1.6 discusses the findings and contributions of this study, followed by the delimitation of scope in Section 1.7. Finally, the structure of the thesis and chapter outlines are presented in Section 1.8. Figure 1.1 illustrates the structure of this chapter.

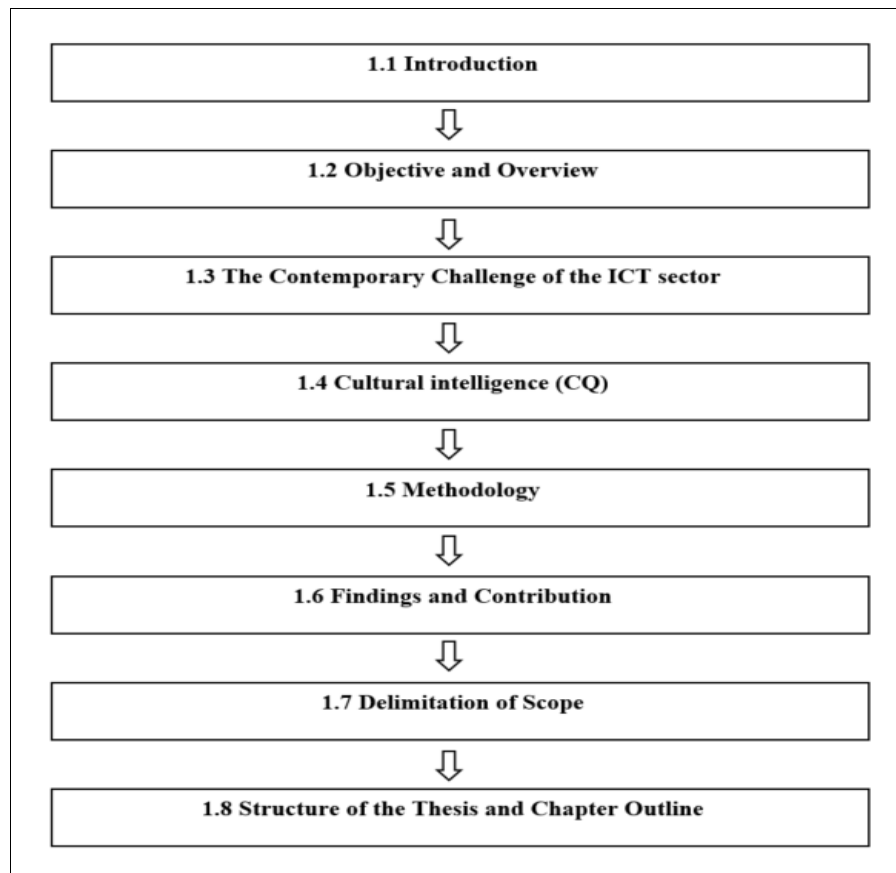


Figure 1.1. Chapter 1 overview.

1.2 Objective and Overview

In a globalised business world, organisations are more likely to have a culturally diverse work setting, and information and communication technology (ICT) organisations are no exception (Holtgrewe 2014; Priyono 2016; Le Coze 2017). This is partially due to increased demand for and mobility of ICT professionals (Barifajjo 2018; Pflügler et al. 2018; Roos 2013). Cross-cultural interaction among ICT professionals working in culturally diverse workplaces is thus inevitable (Kivrak et al. 2014; Presbitero 2016; Qureshi & Evans 2015). ICT products and services are produced and developed by ICT professionals by sharing their expert knowledge (among other resources) with other ICT professionals through frequent and close interaction (Čalopa, Horvat & Kuzminski 2015; von Thiele Schwarz 2016). However, effective interaction among ICT professionals in a culturally diverse work setting may pose challenges, as ICT professionals are often from dissimilar backgrounds and thus have different beliefs and values (Zhang & Feeney 2018; Wernhart, Gahbauer & Haluza 2019). This situation may hinder the sharing of their tacit knowledge. ICT professionals' tacit knowledge sharing is crucial for producing innovative ICT products and services and thus achieving competitive advantage (Loebbecke & Fenema 2016; Mahdi, Almsafir & Yao 2011). Therefore, ICT professionals require the skill to interact effectively with colleagues from other cultures to facilitate such knowledge sharing (Asrar-ul-Haq & Anwar 2016; Ibrahim, Mohamad & Shah 2020). However, it remains unclear how, and using what framework, to effectively facilitate tacit knowledge sharing in a culturally diverse ICT work setting. The foregoing considerations motivated the present study.

This investigation presents a framework using cultural intelligence (CQ) to facilitate tacit knowledge sharing among ICT professionals in a culturally diverse work setting. CQ is defined as the capability to function and manage effectively in culturally diverse settings (Earley & Ang 2003). Previous research has shown that there is a relationship between CQ and knowledge sharing (Chen & Lin 2013; Ismail et al. 2016; Vljacic et al. 2019). However, that research did not clearly specify how CQ and its components may be used to facilitate tacit knowledge sharing. As will be made clear in this thesis, the role of CQ in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting remains an empirical question and represents a knowledge gap in the literature. The objective of the current study

is to examine the role of CQ in enabling tacit knowledge sharing among ICT professionals in a culturally diverse ICT workplace.

A review of the relevant literature reveals that sharing tacit knowledge in a culturally diverse ICT workplace likely poses a significant challenge for ICT organisations. This is due to variegated beliefs and values of employees from dissimilar countries of origin, which can create obstacles to effective interaction between them (Dubey & Tiwari 2020; Mezghani, Expósito & Drira 2016; Okoroafor 2014). Given that ICT organisations often employ individuals from across the globe, co-worker engagement and attendant tacit knowledge sharing are likely to be impeded (Søderberg, Krishna & Bjørn 2013; Zahedi, Shahin & Babar 2016). Accordingly, the main research question and sub-questions of this study are as follows.

Main research question:

What role does CQ play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?

Sub-questions:

- *What role does each of the four CQ components (metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ) play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*
- *How are the four CQ components interrelated in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*

This research focuses on ICT organisations located in Australia and the ways in which ICT professionals utilise CQ in sharing tacit knowledge in a culturally diverse work setting. CQ can aid individuals to operate effectively in a variety of cultural contexts (Ang & Van Dyne 2008; Ng & Earley 2006; Ott & Michailova 2016) and is therefore likely to enable tacit knowledge sharing in a culturally diverse workplace. However, although CQ scholars have suggested a link between CQ and knowledge sharing (Ali et al. 2019; Alidoust & Homaei 2010; Al Mousa & Jones 2006; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Jyoti, Pereira & Kour 2019; Vljacic et al. 2019), there is a lack of empirical studies examining the role of CQ components in

facilitating tacit knowledge sharing in a culturally diverse ICT workplace in Australia. Understanding CQ's role is vital for the culturally diverse Australian ICT workplace; given the high mobility of overseas ICT professionals, it is essential for local ICT professionals to interact with overseas ICT professionals and share their tacit knowledge to produce an innovative ICT product and service in a stipulated time (i.e., before the overseas ICT professionals return to their country) (Alshubiri, Jamil & Elheddad 2019; Koppman, Mattarelli & Gupta 2016; Shah 2012). The cultural diversity in Australian ICT organisations thus adds to the challenge of tacit knowledge sharing. Hence, understanding the role of CQ in facilitating tacit knowledge sharing could assist ICT organisations and ICT professionals to assign priority to developing CQ and to use it to share tacit knowledge in the necessary timeframes. Therefore, this investigation explores the role of CQ in fostering tacit knowledge sharing in a culturally diverse ICT work setting in Australia.

The focus on Australian ICT organisations as research contexts is merited for several reasons. First, the Australian ICT sector plays a crucial role in the national economy (Maryska, Doucek & Kunstova 2012; Shahiduzzaman & Alam 2014) and is entrenched in most business segments that contribute to Australia's economic growth (Niebel 2018; Shahiduzzaman & Alam 2014). Thus, ICT contributes to the Australian economic growth both directly and indirectly through other business sectors (Australia Computer Society (ACS) 2018; Lyons 2020). Also, according to the latest available data, Australia's exports of ICT services are growing considerably, increasing by more than 60% since 2011 to reach A\$3.8 billion in 2018 (ACS 2019). The ICT sector generates 6.6% of Australia's gross domestic product (GDP) and has high growth in cybersecurity and cloud computing (ACS 2018). Indeed, Australia ranks ahead of the USA, Canada, the UK, Germany, Japan and Singapore in terms of cybersecurity, thus attracting foreign companies to build their security centres in Australia (ACS 2018). Collectively, this indicates the scale of ICT organisations' financial impact on the Australian economy (Niebel 2018; Zuppo 2012). A better understanding of what constitutes a more efficient, sustainable and competitive ICT sector in Australia will benefit not only the sector itself but also the national economy in the long run.

Second, the continuous growth of the ICT sector in Australia demands additional ICT professionals. The most recent report released by the Australia Computer Society

(ACS), prepared by Deloitte Access Economics, found that Australia requires an additional 100,000 ICT professionals by 2024 to meet the voracious demand (ACS 2019). Thus, there is a severe shortage of local ICT professionals in Australia, at least in the short to medium term. Consequently, the Australian ICT sector tends to rely on overseas sources, as is evident from the number of visas granted to ICT professionals (of the total number of visas granted in 2019, 10.8% were for ICT professionals). Australia’s ICT sector surpassed all other sectors in sponsoring skilled professionals visas (457) in 2016–17 (ACS 2018). This has created a uniquely culturally diverse work setting in ICT organisations located in Australia.

Even in the current COVID-19 context, the Australian government is supporting skilled immigrants and emphasises that skill shortages will continue after the crisis has passed (Coleman 2020). ICT professionals have been in high demand during this pandemic, and that demand will likely continue into the future (Yiacoumi 2020). For example, as per the labour market information portal in April 2020, demands for ICT professionals was even higher than for medical practitioners and nurses (Figure 1.2).

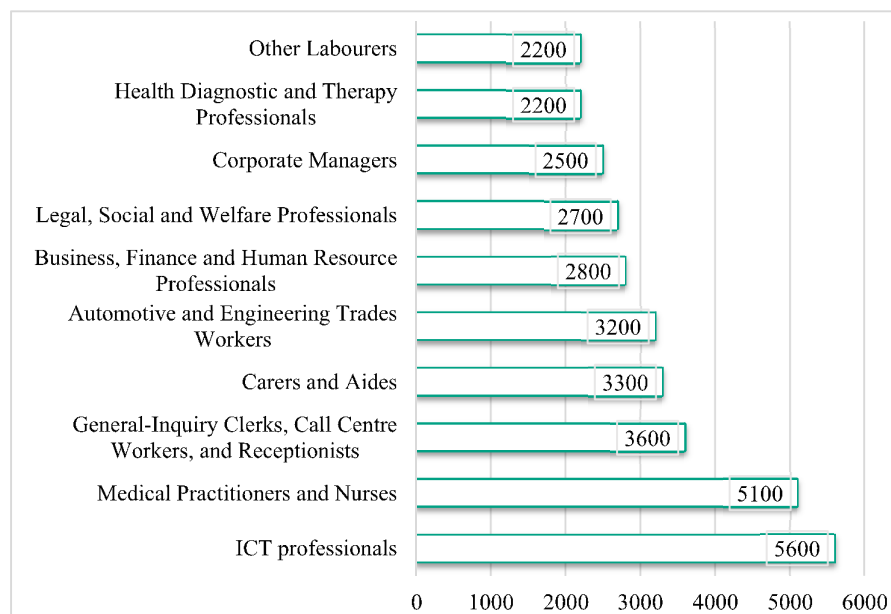


Figure 1.2. Opportunities for ICT professionals leads the pack (Source: Yiacoumi 2020).

Furthermore, most of the Australian government’s social welfare and support payments are sought, applied and distributed through online transactions. In fact, Centrelink websites have been inundated during the pandemic, while education and general health services have been moved online (Crawford et al. 2020; Scull et al.

2020; Williamson, Eynon & Potter 2020). The Australian government has also promoted use of its Coronavirus app to remain up to date with official information on COVID-19 (Department of Health 2020). Since the advent of the virus, ICT usage has increased dramatically as the preponderance of business and administration is conducted online. To sustain effective use of ICT and provide continuous ICT technical support to sectors such as education and health, assistance from ICT professionals is critical. This situation increases demand for ICT professionals, but Australia is already facing a skill shortage in this area (Yiacoumi 2020). To overcome the paucity of ICT professionals, Australia will likely continue to rely on skilled ICT professionals from overseas. The employment of skilled ICT professionals from different countries, now and into the future, will likely continue to engender cultural diversity in ICT workplaces.

Previous research has indicated that employees of different cultural background can experience reduced social interaction (Ang & Inkpen 2008), decreased communication (Klitmøller & Luring 2013), social exclusion (Mor Barak 2015) and increased misunderstandings due to dissimilar attitudes, feelings, values, beliefs and assumptions (Mazur 2010; Shah & Barker 2017; Bücken et al. 2014). Since ICT professionals in the Australian context are now often working in culturally diverse workplaces, it is likely a challenge for them to share knowledge, particularly tacit knowledge, in their workplace. Tacit knowledge sharing among ICT professionals has a significant impact on developing unique ICT products and services (Borges 2012) that assist ICT organisations in realising sustained growth and success (Al-Qdah & Salim 2013; Kozlenkova, Samaha & Palmatier 2014). Obstacles to such behaviour, such as a cultural diversity among ICT professionals within an Australian organisation, hinder these salutary outcomes. Thus, undertaking research to facilitate tacit knowledge sharing to culturally diverse ICT organisations located in Australia appears greatly warranted.

1.3 The Contemporary Challenge of the ICT Sector

ICT has become a cornerstone of the global economy (Qiyang 2018). ICT applications are present in almost all economic sectors (Del Giudice & Della Peruta 2016; Gërguri-Rashiti et al. 2016). ICT influences and transforms seemingly every aspect of business and humanity and increases innovation in every segment of an

economy (Klisaroski et al. 2019). It helps organisations reduce their costs and improve their productivity and overall efficiency (Gössling 2018; Nguyen 2013; Shahiduzzaman & Alam 2014), which together contribute to world economic growth (Cuevas-Vargas, Estrad & Larios-Gómez 2016; Jorgenson & Vu 2016; Niebel 2018). Thus, there is continuous growth in the global ICT sector resulting in strong demand for ICT professionals. After all, ICT products and services are built from thousands of modules developed by ICT professionals that must mesh with each other perfectly for the system to operate (Shaner, Beeler & Noble 2016; Baldwin 2019). Accordingly, ICT professionals play a crucial role in developing ICT products and providing ICT services to customers.

As already noted, Australia's ICT sector plays a significant role in Australia's economic growth (Burgess & Paguio 2016; Lyons 2020), with the sector's contribution to the Australian economy is forecast to grow to \$251 billion by 2026 (ACS 2019). This continued growth demands additional ICT professionals working in the sector. This demand will exceed the available suitably skilled native professionals and require hiring foreign ICT professionals of different ethnicities (ACS 2018), with the outcome being an aggregation of culturally diverse workforces in ICT organisations located in Australia.

Diversity management is not a new phenomenon in Australia (Arasaratnam 2014), but it is usually a planned organisational human resource management practice (Broadnax 2010; Ng & Sears 2020). Furthermore, diversity management focuses on supporting multiple lifestyles within a defined group. On the other hand, CQ provides organisations and employees skills to manage cultural diversity and adds value to diversity management policy (Christiansen & Sazerel 2013). Substantial growth in Australia's ICT sector, however, has led to a burgeoning demand for hiring ICT professionals of varying ethnicities (Costa-Pinto 2014; Shemi, Mgaya & Nkwe 2014). This situation makes ICT a unique sector to study, as it faces challenges that other sectors in Australia are unlikely to have experienced – namely, a rapid growth rate in a relatively short period, as well as a high level of diversity in the workforce (ACS 2018). Demand for ICT products and services seems to accelerate even more rapidly during crises such as COVID-19, and ICT organisations are often under pressure to condense their design and development time to deliver final products or services. These factors add difficulty to ICT professionals' adjustment to the

workplace. An augmented and demanding workload, combined with tight deadlines, also likely contribute to the conundrum, leading ICT professionals to focus chiefly on job training, rather than on interpersonal and team-building skills or cross-cultural training (Sarkar 2017; Shah 2012).

Cultural diversity has both advantages and disadvantages. For example, a global study has found that diversity is a prime force behind innovation and creativity (Bouncken, Brem & Kraus 2016; Kong et al. 2020), improves understanding of product penetration into different markets (Magnusson et al. 2013), helps with recruitment and hiring of top talent (Stahl et al. 2012), and facilitates global success for firms (Lozano & ESCRICH 2017). However, organisations with multi-ethnic workforces can face difficulties in organisational information and knowledge sharing, as employees may be unable to communicate effectively owing to language barriers (Zahedi, Shahin & Babar 2016), non-receptivity of participants (Asrar-UL-Haq & Anwar 2016), altered perceptions of what is being communicated (Khoza & Pretorius 2017), and loss of vital information during communication among ICT professionals (Cumberland & Githens 2012).

Research shows that tacit knowledge sharing among ICT professionals is essential, as it can enhance ICT product innovation, software processes and firm performance (Johannessen & Olsen 2011; Wan et al. 2011; Wang & Wang 2012). Such sharing is paramount, as ICT professionals' skills have a positive influence on the development of improved ICT products and services (Čalopa, Horvat & Kuzminski 2015). For instance, a software package often involves the specification of new and upgraded features required by customers who may be using a current version of the same product (Dreyer & Wynn 2016). ICT professionals collect input about product requirements from customers and then work with other groups to create an improved product development process and product that satisfies the customer's expectations.

ICT professionals are not only required to share tacit knowledge among themselves, but also require knowledge creation to develop innovative and competitive ICT products and services (Mezghani, Expósito & Drira 2016; Zahedi, Shahin & Babar 2016). However, before ICT professionals create knowledge, they should initially share tacit knowledge from their stock of knowledge. In fact, knowledge creation can be considered as a continuous combination, transfer and conversion of different kinds

of knowledge (e.g., technical and expert knowledge) that leads to the formation of new concepts for engendering competitive ICT products and services.

Knowledge creation usually occurs through transfer of individuals' explicit and tacit knowledge when people interact, practice and learn (Dreyer & Wynn 2016; Heredia et al. 2013). Although new concepts for developing an ICT product are formed in the minds of individuals, the engagement between individuals typically plays a critical role in creating these new ICT products and services (O'Connor & Basri 2014). Thus, tacit knowledge sharing acts as a crucial first step in the knowledge management process that supports ICT product and service development.

Owing to its significance, the importance of tacit knowledge sharing in ICT organisations has been discussed in the literature (Dreyer & Wynn 2016; Zahedi, Shahin & Babar 2016); this work is presented in Chapter 2. Nevertheless, as Mezghani, Expósito and Drira (2016) note, dissimilarities in national culture or ethnic background can influence tacit knowledge sharing and become a barrier to it. This occurs primarily because employees within such organisations come from dissimilar cultural backgrounds with different sets of beliefs and practices (Cumberland & Githens 2012; Söderberg, Krishna & Bjørn 2013), as well as various sensitivities, cultural beliefs, mental 'wiring' and perceptions (Okoroafor 2014). Indeed, research shows that cultural differences among employees can reduce the close interaction necessary for effective tacit knowledge sharing (Chong & Besharati 2014; Islam et al. 2013; Kivrak et al. 2014; Qureshi & Evans 2015).

From the resource-based theory perspective, ICT professionals' tacit knowledge can be considered as an essential resource (Borges 2012; Zahedi, Shahin & Babar 2016). According to the resource-based view of the firm, human resources possessing expert knowledge that is difficult to imitate can serve to differentiate one organisation from another (Ghapanchi, Wohlin & Aurum 2014). If human resources within the organisation are conjoined to make a product or service valuable, rare and difficult to imitate, then the resources collectively can contribute significantly to organisational performance (Barney 2015; Bromiley & Rau 2016; Kong et al. 2020). For ICT organisations, ICT professionals' tacit knowledge is a valuable resource that is difficult to imitate and can aid ICT organisations to produce novel ICT products and services that vanquish competitors while fostering growth and success.

Conversely, unshared tacit knowledge negatively affects an ICT organisation's performance (Kukko 2013) and is likely to affect ICT product quality and productivity (Ayaburi, Ko & Walz 2016), making the product outdated or less competitive. For instance, an ICT professional may possess tacit knowledge that can reduce the production time of a given ICT product, or identify a potential defect in it. If this knowledge is not shared within the organisation, then product quality and productivity will be affected; this, in turn, will impact ICT organisation performance. Thus, as discussed earlier, sharing tacit knowledge among ICT professionals in a culturally diverse ICT workplace is a contemporary challenge for ICT organisations as it is likely to impact organisational growth and success.

The knowledge management literature stresses the significance of tacit knowledge sharing among ICT professionals (e.g., Borges 2012; Omotayo & Babalola 2016; Zahedi, Shahin & Babar 2016). However, several researchers also note that little has been written specifically about what adapted methods are most appropriate for ICT organisations to facilitate tacit knowledge sharing among ICT professionals in culturally diverse workplaces (Dingsøyr & Šmite 2014; Ryan & O'Connor 2009). Thus, there is a shortage of empirical data regarding how to address tacit knowledge sharing barriers caused by cultural diversity. This is a significant gap in the literature.

ICT organisations must eliminate any possible factor that may hinder tacit knowledge sharing among culturally diverse ICT professionals. This study argues that the concept of CQ may be utilised to effectively facilitate tacit knowledge sharing in culturally diverse ICT organisations. Previous research (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019) has found that there is a relationship between CQ and knowledge sharing. However, there is a dearth of work exploring the role of CQ in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace. As will be discussed in more detail in Chapter 5, this study aims to find the role of each CQ component and its interrelationships in facilitating tacit knowledge sharing. This will address the knowledge gap in the knowledge management literature and aid ICT professionals and ICT organisations in Australia in enhancing awareness and understanding of the importance of CQ in facilitating tacit knowledge sharing in culturally diverse work settings. This understanding will help ICT professionals and

organisations to focus on CQ development and utilise it to increase sharing the tacit knowledge.

1.4 Cultural Intelligence (CQ)

Globalisation has significantly increased the extent of cross-cultural interaction (Bücker et al. 2014). During such interactions, some individuals almost effortlessly alter their thinking and modify their behaviour, thus leading to effective interactions. Others, however, may struggle and risk offending members of another culture through their actions (Tuleja 2015).

Differences in abilities during intercultural interactions drew the attention of Earley and Ang (2003), who introduced the concept of CQ to explain why some individuals easily adapt and adjust their views and behaviours in cross-cultural situations, while others are unable to do so. Earley and Ang define CQ as an individual's capacity to function and manage effectively in culturally diverse settings. They argue that CQ is not linked to understanding one specific culture but, rather, denotes an individual's capacity to adjust and adapt to different cultural situations (Earley & Ang 2003). Other CQ scholars (e.g., Livermore 2011; Thomas et al. 2012) use slightly different terms when describing CQ concepts, but those terms are still predicated on Earley and Ang's (2003) definition. Thus, this study uses Earley and Ang's CQ definition as it is prominently utilised in the cross-cultural literature. According to Earley and Ang (2003), CQ encompasses four components: metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ.

Metacognition is an individual's control over cognition (leading to processing of in-depth information) and the ability to be self-aware during intercultural interactions (Van Dyne, Ang & Koh 2008). Cognition is an individual's knowledge of norms, practices and conventions in different cultural settings, which reflects essential knowledge of cultural universals as well as of cultural similarities and dissimilarities in specific contexts (Van Dyne et al. 2012). The motivational aspect of CQ involves a person's interest in learning and functioning in cross-cultural situations (Van Dyne, Ang & Koh 2008). Finally, behavioural CQ represents an individual's capacity to display appropriate verbal and non-verbal behaviours when interacting with others from diverse cultural backgrounds (Van Dyne, Ang & Koh 2008). Individuals with high levels of all four CQ components will likely 'have a desire to translate

continually cultural knowledge to generate strategies that will aid in exhibiting appropriate verbal and non-verbal behaviours' (Engle & Crowne 2014, p. 33).

CQ is valuable for individuals as well as for organisations when there is cross-cultural interaction. Indeed, CQ has shown promise in that individuals possessing a high level of CQ may have increased abilities to work successfully in culturally diverse settings (Ang & Van Dyne 2008). Numerous studies have focused on the outcomes and effects of CQ skills. These include increased team competency (Adair, Hideg & Spence 2013), communicative effectiveness (Bücker et al. 2014), reduced intercultural barriers and greater cross-cultural adjustment (Huff, Song & Gresch 2014), knowledge transfer (Ismail 2015; Ismail et al. 2016) and team knowledge sharing (Chen & Lin 2013). These studies were focused on the relationship between CQ variables and outcomes, but less so on understanding how CQ played its role. Furthermore, very few studies have discussed tacit knowledge sharing specifically within the Australian ICT context. Several scholars have emphasised its significance tacit knowledge sharing among ICT professionals (Loebbecke & Fenema 2016; Mahdi, Almsafir & Yao 2011; Sriwidadi, Prabowo & Riantini 2018; Zahedi, Shahin & Babar 2016). As outlined in the rest of the thesis, this research argues that CQ is particularly useful to facilitate tacit knowledge sharing in the unique, culturally diverse ICT workplace.

1.5 Methodology

This section gives a brief overview of the methodology used in this research. The methods employed to answer the research question are an important part of all research. A research method should be developed based on the research question. The purpose of this study is to explore the role of CQ in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting. Tacit knowledge sharing is hard to quantify, as it is unarticulated (Kimani 2017; Chen et al. 2018). Moreover, the research area requires an in-depth understanding of the phenomenon (Panahi, Watson & Partridge 2013). Therefore, the present investigation uses qualitative analysis, utilising in-depth, semi-structured interviews as the primary data collection instrument. An interview guide was developed for conducting semi-structured interviews and interview questions were divided into three categories: questions pertaining to introductory issues, to tacit knowledge

sharing, and to tacit knowledge sharing and CQ. Study participants were ICT professionals who had worked in Australian ICT organisations for at least five years in a culturally diverse work setting. Interviews were conducted with 36 ICT professionals across 14 ICT organisations located in Australia; all have culturally diverse workplaces. The qualitative data collected in the interviews were then transcribed, coded and analysed, using a thematic data analysis approach. The details of the methodology will be further discussed in Chapter 3. In the next section, a brief of the study findings and contributions are provided.

1.6 Findings and Contribution

1.6.1 Findings

The central argument of this research is that CQ components play a significant role in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace. This is because CQ components aid ICT professionals to interact and function effectively in culturally diverse work settings, as well as reducing intercultural barriers that impede tacit knowledge sharing. The interview data revealed that CQ does indeed facilitate tacit knowledge sharing among ICT professionals. Each CQ component has a unique role in fostering such sharing.

The interview data revealed four sub-dimensions of metacognitive CQ: identifying co-workers' cultural background, consciously planning prior to cross-cultural interaction, using previous cross-cultural interaction experience, and assessing the selected plan and approach. These four sub-dimensions supported the role of metacognitive CQ in facilitating tacit knowledge sharing among ICT professionals. These sub-dimensions assist ICT professionals to develop the ability to select an appropriate tacit knowledge-sharing approach.

Additionally, this study found that three sub-dimensions of cognitive CQ played a crucial role in facilitating tacit knowledge sharing by increasing ICT professionals' intention to share tacit knowledge. Those three sub-dimensions are understanding co-workers' cultural behaviour, understanding co-workers' national culture, and understanding co-workers' religious beliefs and customs.

The investigation also revealed three sub-dimensions of motivational CQ: reciprocity, self-satisfaction, and identification and increased tacit knowledge stock.

These sub-dimensions aid in facilitating tacit knowledge sharing. The three revolve around efforts to get ICT professionals' to improve their willingness to share tacit knowledge in a culturally diverse work setting.

Finally, the investigation found three sub-dimensions of behavioural CQ: adjusting communication style, adjusting working style, and adjusting tacit knowledge-sharing approach and mechanism. The details of the above findings will be further discussed in Chapter 4.

The study results also revealed that the interrelationship of the four CQ components assists ICT professionals in facilitating tacit knowledge sharing in a cross-cultural work setting. This finding also reflects the importance of practising CQ to foster tacit knowledge sharing in a culturally diverse work setting. The details of the interrelationship between the four CQ components in facilitating tacit knowledge sharing and the importance of practising CQ are explained, analysed and discussed in Chapter 4.

The findings also support to the theoretical assumption pertaining to the nexus between tacit knowledge sharing and CQ outcomes. The results revealed that tacit knowledge sharing in a cross-cultural work setting is related to four CQ outcomes: effective communication, contentedness and bonding, enhancement of interpersonal trust, and socialising. The details of the CQ outcomes and their relationship with tacit knowledge sharing are explained, analysed and discussed in Chapter 4.

1.6.2 Contributions and Implications

The present research enhances understanding of key concepts in several ways. This study adds knowledge to the domain of CQ in relation to the knowledge management field. Previous studies have found that there is a relationship between CQ and knowledge sharing (Ali et al. 2019; Alidoust & Homaei 2010; Al Mousa & Jones 2006; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019). However, the extant work did not specifically discuss tacit knowledge sharing or consider the role of CQ in facilitating tacit knowledge sharing in the unique ICT context. The role of CQ in facilitating tacit knowledge sharing is unknown (Vlajcic et al. 2019). The current study thus contributes by addressing this knowledge gap. Using ICT professionals' perceptions, the investigation highlights the important role the four CQ components play in facilitating tacit knowledge sharing by ICT

professionals. In addition, as far the researcher knows, this undertaking is one of the first empirical investigations to analyse the interrelationship among the four CQ components and its impact in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse Australian work setting.

This study extends the original CQ framework proposed by Earley and Ang (2003) by providing a new conceptual framework of CQ related to tacit knowledge sharing. This conceptual framework posits the sub-dimensions of each CQ components and their role in facilitating tacit knowledge sharing. Additionally, it emphasises the importance of practising CQ in a cross-cultural work setting to enhance tacit knowledge sharing. The framework enhances understanding of ICT professionals regarding the role of CQ in facilitating tacit knowledge sharing. Furthermore, it guides ICT organisations towards augmenting tacit knowledge sharing among ICT professionals in a culturally diverse workplace. Such admonition is likely to change the mindset of ICT professionals and ICT organisations concerning how they view the importance of CQ in facilitating tacit knowledge sharing.

This study found the critical connection between CQ and tacit knowledge dissemination among ICT professionals, which has implications for the ICT industry. Its results could influence management practices to develop and utilise CQ in tacit knowledge dissemination among ICT professionals. The primary beneficiaries of this research will likely be ICT professionals working in culturally diverse workplaces, as the study's findings should help increase awareness of CQ's role in sharing tacit knowledge.

The findings could also provide an educational resource for ICT professionals and other employees in culturally diverse workplaces. This undertaking may additionally assist ICT professionals by providing a valuable lens through which they can understand the scope and impact of CQ and tacit knowledge sharing within their organisations. Because tacit knowledge sharing is crucial for ICT organisational success, enhanced understanding of the role of CQ in facilitating tacit knowledge sharing is likely to enhance ICT organisational effectiveness and competitiveness.

1.7 Delimitation of Scope

This research operates within the following parameters. The study focuses only on ICT firms in Australia, using 36 participants who are mainly ICT professionals. Thus, the findings cannot be generalised to other geographical areas and the population at large. However, as the participants were from culturally diverse workplaces and different cultural backgrounds, their view provided some insights into how ICT professionals perceive CQ and tacit knowledge sharing in their organisations. In addition, the richness of information gained from the in-depth interviews helps to offset the effect of the small sample size. The limitations of the research will be further discussed in Chapter 5.

1.8 Structure of Thesis and Chapter Outline

Chapter 1 describes the research objective and overview, along with the research questions. It outlines the contemporary challenges in the ICT sector and the problem of tacit knowledge sharing in culturally diverse ICT workplaces. It then argues that CQ may be utilised in culturally diverse ICT workplaces to facilitate tacit knowledge sharing. This chapter also provides a summary of the research gap, methodology, findings, and contributions of the research. The thesis contains five chapters. Table 1.1 provides an overview of the thesis chapters.

Chapter 2 provides an overview of the Australian ICT sector and its changing role in today's globalised business world. It also discusses the importance of tacit knowledge sharing in ICT organisations and its challenges. The chapter also presents a critical review of the literature on tacit knowledge sharing approaches used by ICT professionals. Additionally, it reviews the concept of CQ, its import for culturally diverse ICT organisations, and its possible relationship with tacit knowledge sharing. Gaps in the literature are then identified.

Chapter 3 provides details about the methodology used to collect and analyse the data. It describes the research paradigm, data collection methods and methods of analysis. The ethical considerations of this research are also presented. This chapter provides the rationale for the methodology used in conducting the data collection (semi-structured interviews) and the data analysis (thematic analysis).

Chapter 4 presents the data analysis and findings. Findings from the study are reported based on the research question. It also evaluates the research findings and discusses the major results of the study in the context of extant literature to develop a conceptual framework that explains CQ components' role in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. The details of the interrelationship between the four CQ components in facilitating tacit knowledge sharing and the importance of practising CQ are explained, analysed and discussed in this chapter. The chapter also presents the details of the CQ outcomes and their relationship with tacit knowledge sharing.

Chapter 5 recaps the key findings and concludes the study's theoretical and practical contributions. Recommendations for further research, as well as the limitations of the study, are also outlined in this chapter.

Table 1.1 Overview of the thesis chapters

| Introduction Chapter 1 | Literature review Chapter 2 | Methodology Chapter 3 | Analysis and Findings Chapter 4 | Conclusion Chapter 5 |
|--|---|---|---|--|
| 1.1 Introduction | 2.1 Introduction | 3.1 Introduction | 4.1 Introduction | 5.1 Introduction |
| 1.2 Objective and Overview | 2.2 ICT sector in Australia and its changing context | 3.2 Justification of Research Paradigm | 4.2 Summary of Findings | 5.2 Conclusion about the research question |
| 1.3 The Contemporary Challenge of the ICT sector | 2.3 The Changing Landscape in the Australian ICT Sector: The Challenges | 3.3 Methodology | 4.3. The role of Metacognitive CQ in facilitating tacit knowledge sharing | 5.3 Research Contributions |
| 1.4 Cultural intelligence (CQ) | 2.4 Theories | <i>3.3.1 Justification for qualitative research methods</i> | <i>4.3.1 & 4.3.2 Overview of sub-dimensions & Critical analysis</i> | 5.4 Research Implications |
| 1.5 Methodology | <i>2.4.1 Resource-based view (RBV)</i> | <i>3.3.2. The rationale for use of the generic qualitative approach</i> | 4.4. The role of Cognitive CQ in facilitating tacit knowledge sharing | 5.5 Research Limitations |
| 1.6 Findings and Contribution | <i>2.4.2 Knowledge-based view (KBV)</i> | 3.4 Data Collection Instrument | <i>4.4.1 & 4.4.2 Overview of sub-dimensions & Critical analysis</i> | 5.6 Directions for Future Research |
| <i>1.6.1 Findings</i> | 2.5 Tacit knowledge sharing | 3.5 Procedure | 4.5. The role of Motivational CQ in facilitating tacit knowledge sharing | |
| <i>1.6.2 Contributions and Implications</i> | <i>2.5.1 Defining tacit knowledge in an ICT context</i> | <i>3.5.1 Interview guide and Pilot interview</i> | <i>4.5.1 & 4.5.2 Overview of sub-dimensions & Critical analysis</i> | |

| | | | | |
|---|--|--|---|--|
| 1.7 Delimitation of Scope | <i>2.5.2 Importance of tacit knowledge sharing among ICT professionals</i> | <i>3.5.2 Participants: Population, Sampling and Recruiting</i> | 4.6. The role of Behavioural CQ in facilitating tacit knowledge sharing | |
| 1.8 Structure of the Thesis and Chapter Outline | <i>2.5.3 Tacit knowledge sharing among ICT professionals</i> | <i>3.5.3 Ethical issue</i> | <i>4.6.1 & 4.6.2 Overview of sub-dimensions & Critical analysis</i> | |
| | <i>2.5.4 Difficulties of tacit knowledge sharing in the ICT context</i> | <i>3.5.4 Interview process</i> | 4.7 Combined CQ components role in facilitating tacit knowledge sharing | |
| | 2.6 The Concept of Cultural Intelligence (CQ) | 3.6 Data Analysis | <i>4.7.1 Interrelationship of CQ components' role in facilitating tacit knowledge sharing</i> | |
| | <i>2.6.1 The components of CQ</i> | <i>3.6.1 Data Analysis</i> | <i>4.7.2 Relationship between outcomes of CQ and tacit knowledge sharing</i> | |
| | <i>2.6.2 CQ and Its Importance in ICT Organisations</i> | <i>3.6.2 Reliability and Validity</i> | 4.8 Conceptual Framework | |
| | 2.7 CQ and tacit knowledge sharing | 3.7 Conclusion | 4.9 Summary | |
| | 2.8 Research gap and research question | | | |
| | 2.9 Conclusion | | | |

Chapter 2 Literature Review

2.1 Introduction

The objective of this chapter is to review the relevant literature in the area of cultural intelligence (CQ) and tacit knowledge sharing, particularly in the ICT context. Sections 2.2 and 2.3 provide an outline regarding the ICT sector in Australia and the challenges and importance of knowledge sharing. Section 2.4 discusses the theories that support the importance of knowledge sharing in the ICT sector. Section 2.5 offers a review of literature related to tacit knowledge, significance of tacit knowledge sharing in the ICT context, and tacit knowledge sharing approaches and challenges in the ICT sector. Section 2.6 explains the need for CQ, including the CQ components and the importance of CQ in ICT organisations. Then the possible link between CQ components and tacit knowledge sharing in an ICT context is described in Section 2.7. A research gap is identified, and research questions are proposed in Section 2.8. Section 2.9 proffers a conclusion. Figure 2.1 provides an overview of this chapter.

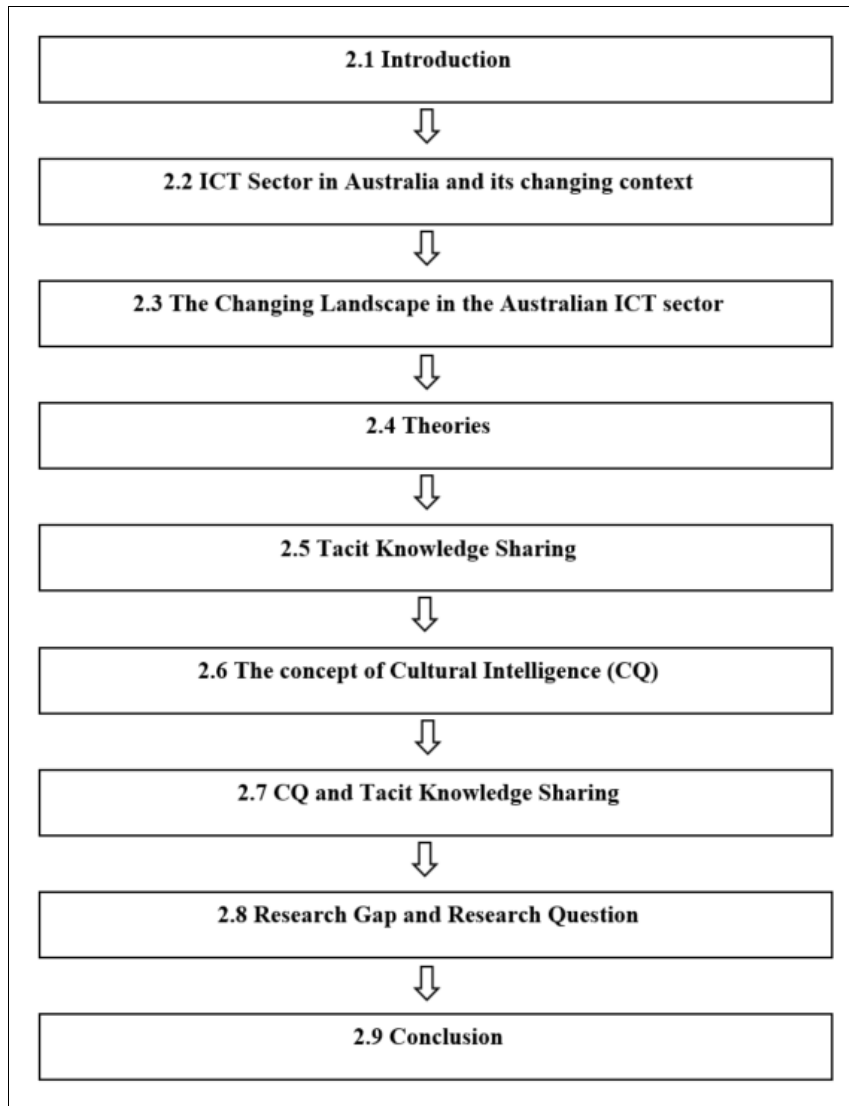


Figure 2.1. Chapter 2 overview.

2.2 ICT Sector in Australia and its Changing Context

ICT is recognised worldwide as having a major influence on almost every economic sector (ACS 2018; Namada 2018; Tarutė & Gatautis 2014; Yin, Stecke & Li 2018). The ICT sector consists of several sub-sectors: hardware, software, telecommunications, content providers and other services (Abubakar & Mitra 2010; Malmodin & Lundén 2018). For example, in a manufacturing context it includes the manufacture of electronic components, printed circuit boards, hardware, computers, network components, telecommunication equipment and consumer electronics (Pellegrin-Boucher, Roy & Gurău 2013). From a services perspective, it encompasses software development, programming activities, enterprise resource

planning solutions, computer consulting service, network, data processing, software publishing, software application, data processing, cloud computing, cybersecurity and provision of ICT solutions for business operations (Zuppo 2012).

The ICT sector develops products and services that influence most economic sectors of a nation, including health, education, manufacturing, business, retail, banking and professional services (Phan & Vogel 2010; Zuppo 2012). For example, home-based businesses (Anwar & Daniel 2016), education (Sánchez, Bolívar & Hernández 2015), aged care (Kapadia, Ariani & Ray 2015), transport and logistics (Gössling 2018; Nguyen 2013), and service sectors use ICT to improve productivity and quality (Shahiduzzaman & Alam 2014). The scope and growth of the ICT sector reflect the strength of the technological core supporting a country's digital economy. A country with marked ICT sector growth augments the ability to capture a larger share of international consumer and business demand for ICT goods and services, as digitalisation affects households and industries around the world (Acker, Gröne & Schröder 2012). Moreover, a nation with substantial ICT economic activity may indirectly lead other industries in that nation to digitise (Alshubiri, Jamil & Elheddad 2019; Dacs, Kinkel & Jäger 2019).

Based on the relative strengths of the country in digital development, the country may even set a global technical standard (ACS 2018). For example, China's Huawei provided more overall contributions to end-to-end 5G standards than any other company in the world by creating a number of standardised interfaces within the 5G architecture (Lei et al. 2019). This has arguably made the company a competitive supplier of different parts of 5G networks around the world (Ni et al. 2019; Rao & Prasad 2018).

In Australia, ICT organisations are involved in a combination of electronics, telecommunications, software, networks, decentralised computer workstations and integration of information media (Burgess & Paguio 2016). Since the mid-1990s, ICT products and services have brought revolutionary changes to Australian business practices (Farhadi, Ismail & Fooladi 2012). Indeed, ICT usage in industry is positively related to profitability and performance (Houghton, Miller & Foth 2014; Shahiduzzaman & Alam 2014). ICT collaboration between and within different sectors and stakeholders across the Australian economy has been extensive, allowing companies to acquire new customers, increase productivity and create innovative

products and services (ACS 2016). Australian suppliers also offer cloud services and cybersecurity services to both domestic and international markets (Daryabar, Dehghantanha & Choo 2017). In fact, the Australian cybersecurity industry is expected to almost triple its growth by 2026 (Australian Trade and Investment Commission 2017).

The growth in Australia's ICT sector offers significant employment opportunities (Holtgrewe 2014). For instance, 600,000 ICT professionals were employed in 2014, increasing to 663,100 in 2017 (ACS 2018). The growth in Australian ICT employment opportunities in 2016–2017 was approximately seven per cent, easily exceeding the Australian Computer Society's 2017 forecast. The Australian Computer Society, which is the professional association for Australia's ICT sector with 40,000 members, has predicted ICT sector employment may rise above 14 per cent by 2023 (ACS 2019).

ICT professionals play various roles and may be fully or partly involved in developing ICT products and services. Professionals within the ICT sector include ICT consultants, software development programmers, system analysts, business analysts, ICT sales professionals, ICT managers, network engineers, testing engineers, web designers, support technicians, system administrators and security specialists (Al-Saggaf, Burmeister & Schwartz 2017; Roos 2013). Among these, ICT consultants play an especially crucial role in the ICT organisation. This is because their primary role is to ascertain and understand customer requirements and then provide technology solutions for customers by transferring their knowledge about those requirements to other ICT professionals producing ICT products and services (Jansen et al. 2012). Although all ICT professionals contribute to providing ICT products and services, ICT consultants are critical for linking customers and other ICT professionals to satisfy customer needs or requirements (Breidbach & Maglio 2016). Also, ICT consultants require domain and germane technical knowledge that should be transferred to other ICT professionals for product and service development (Bradshaw, Pulakanam & Cragg 2015). As ICT consultants play a crucial role in ICT organisation, the current study focuses solely on ICT consultants, hereafter referred to as "ICT professionals" – a common classification used in ICT literature (Bradshaw, Pulakanam & Cragg 2015).

Owing to their technical capabilities and expert knowledge, ICT professionals' skills have a positive influence on development of improved ICT products and services (Čalopa, Horvat & Kuzminski 2015). For instance, an ICT product such as a software package often involves specification of new and upgraded features required by customers who may be using a current version of the same product (Dreyer & Wynn 2016). ICT professionals collect input about product requirements from customers and then work with other groups to create a product that satisfies the customer's expectations. To achieve this desired outcome, effective interaction and good coordination among ICT professionals, and between the customer and ICT professionals, are critical. Accordingly, ICT professionals play a crucial role in an ICT organisation in the development of ICT products and services.

Despite the high demand for and importance of ICT professionals in the ICT sector, Australia has a shortage of such professionals (Birrell, Healy & Kinnaird 2016; Ross & Ali 2017) with appropriate expert knowledge (Doucek, Maryska & Novotny 2014). There is insufficient number of available qualified ICT professionals to meet the increasing demand of the ICT sector (Ross & Ali 2017). The Australian ICT industry has been experiencing skills shortages since 2011 and will be unable to support the ICT sector using only domestic professionals (ACS 2017, 2018; Shemi, Mgaya & Nkwe 2014; McLachlan, Craig & Coldwell-Neilson 2016). Based on the latest available data, even after a slight increase in IT graduates from universities each year, the supply remains insufficient (Australia's Digital Pulse 2019). For example, Figure 2.2 shows the number of students completing ICT courses was close to 5000 in numbers in 2017, which is insufficient to meet the ICT industry demand; in the same year (2017), 9917 temporary ICT professionals skilled visas were granted to meet industry demand.

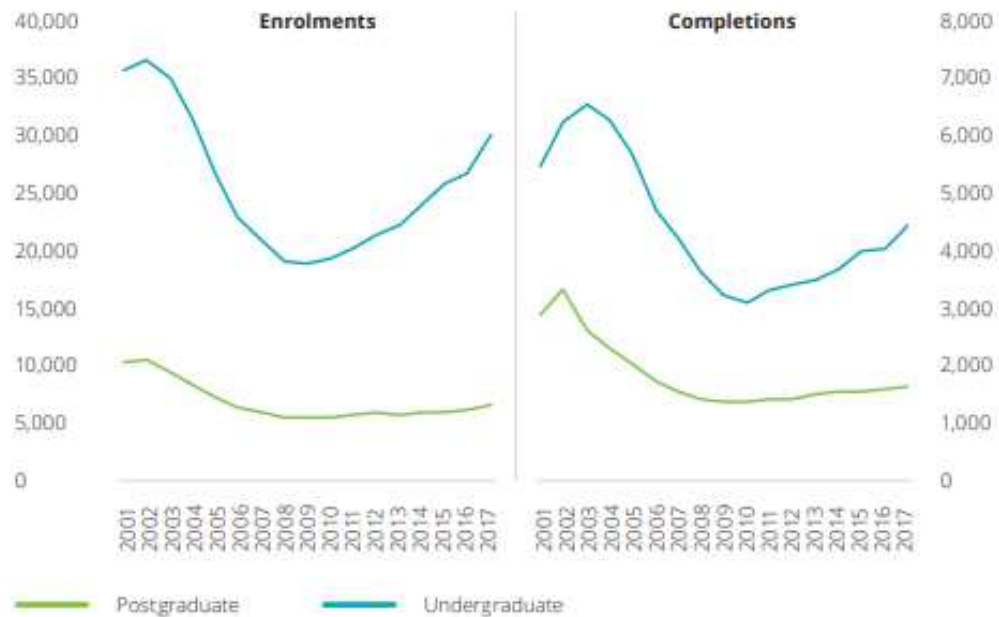


Figure 2.2. Student enrolments in and completion of ICT degrees (Source: Department of Education U-Cube 2019).

Australia requires around an additional 100,000 ICT professionals by 2024 to meet the voracious demand, as shown in Figure 2.3 (ACS 2019). And there is a continuous increase in Australia’s trade in ICT services, as shown in Figure 2.4.

| Occupational grouping | 2018 | 2024 |
|---|----------------|----------------|
| ICT management and operations | 203,817 | 243,789 |
| ICT technical and professional | 262,801 | 305,692 |
| ICT sales | 31,433 | 34,325 |
| ICT trades | 88,005 | 93,864 |
| Electronic trades and professional* | 4,011 | 4,506 |
| ICT industry admin and logistics support* | 102,240 | 110,663 |
| Total technology workers | 692,307 | 792,839 |

Figure 2.3. Trend employment forecasts by CIER occupation groupings, 2018–2024 (Source: ACS 2019).

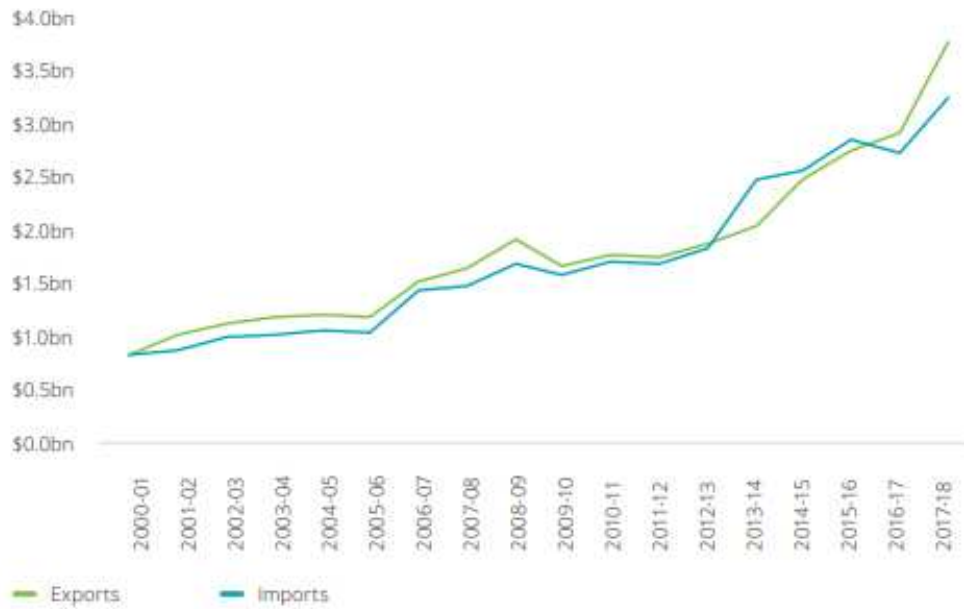


Figure 2.4. Australia’s trade in ICT services, 2001–2018 (Source: ABS 2019).

Given unremitting demand for ICT professionals (ACS 2018; McGill, Koppi & Armarego 2014) and concomitant shortages in germane skills, the Australian ICT sector’s dependence on global employee sources is increasing (ACS 2017; Birrell, Healy & Kinnaird 2016; Doucek, Maryska & Novotny 2014; Ross & Ali 2017; Shemi, Mgya & Nkwe 2014; McLachlan, Craig & Coldwell-Neilson 2016). Indeed, in the four years since 2016, the Australian ICT sector surpassed all other sectors in sponsoring skilled migrant visas (ACS 2019; Boucher 2020). ICT professionals, in fact, dominate the skilled migrant 457-visa program, accounting for 16 per cent of the total visas granted in 2017–2018 (ACS 2019; Department of Home Affairs 2019). It is likely that the number of skilled immigrant visas will rise substantially after the current COVID-19 pandemic subsides.

Based on the above information, it is clear that there is fast and sustainable growth in the Australian ICT sector, which favourably influences Australia’s economy and creates additional job opportunities (Almeida & Fernando 2017; Holtgrewe 2014; Nguyen & Wang 2019). However, the sector also faces challenges such as the need for updating fast-changing technology, ICT maintenance, competition with global ICT organisations, attracting skilled professionals, management of offshore outsourcing and skilled immigrants, cross-cultural interaction difficulties, and

knowledge sharing among ICT professionals (OECD 2012; Ohei, Brink & Abiodun 2019; Shah & Barker 2017). These challenges are discussed in the following sections.

2.3 The Changing Landscape in the Australian ICT Sector: The Challenges

Organisations in the ICT sector are striving to invest in tools to attend to the challenges of the 21st century, as well as to improve their productivity and performance, as the world becomes increasingly technology-oriented (Cardona, Krestschmer & Strobel 2013). Because technology is a crucial enabler of sector globalisation and productivity improvements, many countries emphasise global competitiveness in this sector to aid broader economic growth (Dima et al. 2018). Doing so encompasses developing a competitive local ICT industry while effectively utilising digital technologies in broader applications across the economy (Alshubiri, Jamil & Elheddad 2019; Nambisan, Wright & Feldman 2019). According to an Australia Computer Society (2018) report, Australia ranks seventh out of sixteen developed countries in ICT sector development, and its performance is relatively middling across measures of international ICT competitiveness. In fact, Australia is seemingly falling behind other countries such as the USA, the UK and Singapore in terms of the performance of its digital economy (ACS 2018). Therefore, Australia needs to build a reliable and competitive digital sector to compete internationally (Ross & Ali 2017). At the same time, however, challenges are rife in the sector.

ICT organisations compete globally to acquire local and international business opportunities (Yunis et al. 2012). In Australia, for instance, multinational ICT companies – including Dell, Google, IBM, Apple, HP, Infosys, Wipro, Tata Consultancy Services (TCS), Mahindra Satyam, HP, CISCO and Lenovo – are key players in the technology market. These firms provide ICT products and services to many of the top businesses listed on the Australian Securities Exchange (e.g., Telstra, AGL, Coles, Macquarie Bank, Westpac, CBA, ANZ, NAB), as well as to small- to medium-size enterprises. Australian demand for ICT products and services is high, as ICT is embedded in all sectors. Accordingly, competition among ICT products and service suppliers is keen, as there are several suppliers around the world competing for Australian business opportunities (ACS 2018). Thus, ICT organisations in Australia (both domestic and international companies) face severe

competitive challenges. To succeed in generating long-term business growth, Australian ICT organisations undoubtedly require a sustainable and competitive advantage.

Several studies show that an organisation is likely to achieve competitive advantage through following Porter's (1980, 1991) approach. According to Porter (1998), cost and differentiation are two main approaches that foster a company's achievement of competitive advantage. The cost approach refers to providing low-cost products and services that competitors do not offer (Porter 1980). A differentiation strategy pertains to providing a higher quality product or service than competitors offer (Porter 1991). Both alternatives are necessary for ICT organisations, as such enterprises often operate under intense competition (as noted above).

To create a lower-cost ICT product or service, ICT professionals should share their knowledge – such as customer domain, ICT technical, and previously gained knowledge from similar product development processes – to create an efficient process that is superior to competitors' methods (Navimipour & Charband 2016). This knowledge sharing will help ICT organisations achieve improved ICT product and service quality and unique attendant features to foster a differentiated strategy (Loebbecke & Fenema 2016; Yeşil, Büyükbeşe & Koska 2013). ICT professionals' domain and technical knowledge and talent, therefore, will play a crucial role in developing an ICT product and service that meets customer requirements and achieving competitive advantage under both low-cost and differentiated approaches (García-Sánchez, García-Morales, & Bolívar-Ramos 2017). However, knowledge sharing among ICT professionals in the fast-changing technology sector is challenging because of career mobility and culturally diverse work settings (Aurum, Daneshgar & Ward 2008; Mezghani, Expósito & Drira 2016; Zahedi, Shahin & Barbar 2016).

ICT businesses face a challenge in retaining ICT professionals (Barifaijo 2018; Kong, Chadee & Raman 2010; Roos 2013; Segovia-Pérez et al. 2020). This problem is partly reflective of increased professional mobility among ICT professionals (Pflügler et al. 2018), which is attributed to globalisation. This did not seem to be the case before the 1990s in Australia (ACS 2018). Furthermore, demand is high for ICT professionals, as digital capabilities are becoming critical drivers of business growth across all sectors of the economy (ACS 2019). This situation creates additional

opportunities for ICT professionals and affords them the chance to change their job often. These twin phenomena create a challenge for ICT organisations in retaining their professionals. Because there is high employee mobility, new workforce models (such as offshoring and outsourcing), and a need for up-to-date employee knowledge throughout the professions (Koppman, Mattarelli & Gupta 2016), obstacles to knowledge sharing are rife (Wickramasinghe 2015).

Furthermore, knowledge sharing is challenging in culturally diverse work settings (Asrar-ul-Haq & Anwar 2016). As discussed in the previous section, Australia's ICT sector has experienced fast and sustained growth; nonetheless, there is a shortage of ICT professionals that the sector needs to overcome. The Australian Government recognises the a shortage of ICT professionals and has established processes for offshore outsourcing and encouraging overseas ICT professionals to work in Australia by offering a skilled migrant temporary visa (Shemi, Mgaya & Nkwe 2014).

Research has revealed that using and managing offshore outsourcing is beneficial but also challenging (Khan & Azeem 2014). In a global economy, where the workforce is increasingly internationally mobile, Australia's shortage of ICT professionals means that the country has had to rely on offshore outsourcing since the early 1990s (Shemi, Mgaya & Nkwe 2014). Although ICT outsourcing began with large companies in the 1990s, the trend extended to include small- and medium-sized firms by the late 2000s (Alderete 2013). ICT outsourcing is a contract-based relationship between client and vendor organisations in which a client contracts out all or part of their activities to the vendor, who provides agreed-upon services in return for remuneration (Khan, Niazi & Ahmad 2011). For instance, many client enterprises in Australia outsource their ICT projects to nations such as India, China and the Philippines (Owens 2014) to decrease expenses through reduced labour costs (Ali & Khan 2016). However, managing offshore outsourcing is challenging: it occurs in different work cultures where employees are from various ethnic backgrounds and located in various time zones and geographic locations (McCarthy, Silvestre & Kietzmann 2012). Such time-based, geographical and socio-cultural distances can be problematic for meaningful communication, coordination and control of organisational activities (Khan, Niazi & Amed 2011).

Alternatively, employing migrants as skilled ICT professionals to fill immediate ICT openings in Australia provides the sector with leading capabilities and introduces different technologies to Australia through cross-border knowledge transfer (i.e., employment of ICT professionals from foreign countries). Additionally, the practice establishes relationships that may lead to new economic activity (Peri 2016). Furthermore, empowering domestic companies to invite skilled workers from overseas can create new opportunities, as Australian industries develop, invest and innovate using a mix of overseas and local workers (Bahn, Barratt-Pugh & Yap 2012; Yigitcanlar & Dur 2013).

ICT professionals as skilled migrants offer a new pool of talent that ICT organisations can capitalise on to sustain their competitive positions (Ng & Metz 2015). This pool can also be problematic; for instance, most skilled migrant ICT professionals in Australia are from India, China and the Philippines (ACS 2018; Owens 2014) and have very different cultural backgrounds from native Australians. Although these skilled immigrants have good English language proficiency, their cultural background likely introduces dissimilar beliefs, values and habits into the work mix. The different cultural backgrounds may engender a culturally diverse work setting, but that may also pose a hindrance to close cross-cultural interaction. Such engagement is crucial in ICT businesses for developing ICT products and services. As highlighted, the success of an ICT organisation relies significantly on how closely its ICT professionals work closely together and share their knowledge effectively to develop ICT offerings (Søderberg, Krishna & Bjørn 2013).

A culturally diverse workforce can have both positive and negative impacts on ICT organisations (Selvadurai & Dasgupta 2016; Wong et al. 2018). For instance, creativity and problem-solving competencies are crucial factors in ICT product and service development, as they help provide cost-effective, productivity-enhancing solutions to customers (García-Peñalvo 2015). However, ICT professionals' creative ideas and problem-solving skills should be shared through close interaction and used within the ICT enterprise to develop enhanced ICT products that are superior to those of competitors. In a culturally diverse ICT workplace, however, close interaction may be reduced due to dissimilar beliefs and values (Klitmøller & Luring 2013). This may be partly due to social exclusion within the workplace or misunderstanding between individuals from different cultures (Mazur 2010; Mor Barak 2015; Shah &

Barker 2017). The end result could hinder ICT professionals' utilisation of their creativity and problem-solving skills (Sharma & Hussain 2017). Such adversity could also obstruct teamwork (Lockwood 2015; Moore, Everly & Bauer 2016). Indeed, teamwork plays an important role in the ICT product development process, as several ICT professionals inevitably need to work together and share their knowledge to develop an ICT product (Borges 2013; von Thiele Schwarz 2016). Moreover, non-verbal communication (e.g., facial expressions, gestures, personal distance) can influence employee work relationships (Eaves & Leathers 2017). Non-verbal communication is a part of cultural interaction that can lead to misunderstandings, or even cause offence, between ICT professionals from different cultural backgrounds.

Potential conflicts may be induced by perceived differences (Podsiadlowski et al. 2013) or as a result of miscommunication and misunderstanding in a culturally diverse workforce. Dissimilar belief systems could also impede development of trust among ICT professionals (Klitmøller & Lauring 2013; Søderberg, Krishna & Bjørn 2013). Individuals with certain perceptions, behaviours, language and cultural beliefs might hesitate to communicate frequently with another employee from a dissimilar cultural background (Bücker et al. 2014), which may reduce social interaction (Glass & Westmont 2014) and decrease effective communication (Ukachukwu & Iheriohamma 2013), and will likely lead to a reduction in trust formation (Chua, Morris & Mor 2012).

From the above discussion, reduced social and close interaction and absence of trust among individuals are more likely to occur in a culturally diverse ICT work setting than in a homogeneous workforce (Holste & Fields 2010). These factors (less close interaction, decreased effective communication or increased miscommunication, reduced collaboration, and absence of trust) conceivably affect knowledge sharing among Australian ICT professionals (Zahedi, Shahin & Babar 2016; Asrar-ul-Haq & Anwar 2016; Wiewiora et al. 2013). But knowledge sharing in an ICT organisation is a key requirement for developing ICT products and services and achieving sustainable and competitive advantage (Podrug, Filipovic & Kovac 2017; Lee, Shiue & Chen 2016). The importance of knowledge and knowledge sharing in achieving competitive advantage is supported by theories such as the resource-based view and knowledge-based view, discussed in the next section.

2.4 Theories

2.4.1 Resource-based view

The resource-based view (RBV) stresses the internal capabilities of organisations (Barney 2011). The term ‘resource-based view’ was coined by Wernerfelt in 1984 (Gaya, Struwig & Smith 2013). He observed that an organisation was a set of assets or resources that were tied to it (Wernerfelt 2014). As conceptualised by the RBV, ‘resources are defined as all assets, capabilities, organisational processes, firm attributes, information, and knowledge controlled by an organisation that enable the organisation to conceive of an implemented strategy that develops its efficiency and effectiveness’ (Barney 1991, p. 101). Specifically, Barney (2011) argues that there are three types of resources: human capital, organisational capital and physical capital. In an ICT context, *human capital* comprises the expertise, knowledge, intelligence and experience of ICT professionals. *Organisational capital* pertains to planning, reporting, coordinating and controlling mechanisms. *Physical capital* includes office, equipment, hardware, software, networks, applications and databases.

The human and material resources available within an organisation help it develop products and services. In other words, human, capital and physical resources, including land and equipment, as well as how they are combined, differentiate one organisation from another (Ghapanchi, Wohlin & Aurum 2014). From the RBV perspective, if all the available resources within the organisation are combined to make the product or service valuable, rare and difficult to imitate, then the resources collectively contribute decidedly to gain competitive advantage (Bromiley & Rau 2016).

In an ICT context, an ICT organisation is likely to achieve competitive advantage if its internal resources are employed effectively and efficiently (Barney 2011; Mao et al. 2016). ICT professionals’ knowledge is a key factor for producing ICT products and services to garner competitive advantage, as it is difficult for competitors to imitate (Tong, Tak & Wong 2015). Indeed, the more difficulty competitors have in imitating or substituting a competitor’s resources and capabilities, the greater the strategic value of those resources (Ombuki & Were 2018). As such, from a RBV

perspective, ICT professionals' knowledge sharing within an ICT organisation is a critical resource for the organisation to succeed.

Additionally, ICT professionals acquire customer domain knowledge from working at a customer's site, as well as from possessing previous work experience in the same domain; such knowledge is crucial to ICT product development (Lindgren & Münch 2016). Understanding the customer's domain explicit knowledge and know-how is important, as the ICT product aims to increase customer domain efficiency (Shahiduzzaman & Alam 2014). ICT professionals' knowledge enhancement through interacting with a customer's domain is valuable and more difficult to imitate than an organisation's physical capital (Ghobadi & Dambra 2013). Thus, RBV theory supports the argument that ICT professionals' knowledge is a key driver of competitive advantage for ICT organisations.

2.4.2 Knowledge-based view

The knowledge-based view (KBV) considers knowledge the most important strategic resource and, in that sense, this perspective is an extension of RBV (Tongo 2013). The interpretation of knowledge as a critical resource creates a theoretical connection between RBV and KBV (do Rosário Cabrita, Cruz-Machado & Matos 2013). In the KBV perspective, an organisation can achieve competitive advantage when knowledge is utilised effectively (Abker et al. 2019). Many ICT organisations acknowledge that to be effective they must become knowledge-based organisations (Mahdi, Almsafir & Yao 2011). Knowledge has thus increasingly become a strategic asset for many organisations (Analoui, Doloriert & Sambrook 2013; Omotayo & Babalola 2016).

There are two main types of knowledge discussed in the knowledge management literature (Nonaka & Takeuchi 1995), including 'tacit' and 'explicit' (Khalil & Khalil 2019). *Explicit knowledge* is articulated or written down in manuals, papers or electronic communications in the form of text, images and tables (Panahi, Watson & Partridge 2013). An example of explicit knowledge is an owner's product manual describing the operating procedures, where the knowledge is well-documented and presented in a codified form that can be consciously accessed. *Tacit knowledge* is personal, and human-dependent know-how and is difficult to codify and transfer (Holste & Fields 2010). Tacit knowledge is mostly unconscious, invisible knowledge

that is difficult to document. The properties of tacit and explicit knowledge are presented in Table 2.1.

Table 2.1. Properties of tacit and explicit knowledge

| Tacit knowledge | Explicit knowledge |
|--|---|
| <ul style="list-style-type: none"> • Unstructured, difficult to codify and transfer • Rarely documented, highly personal, in human mind • Transferred through conversation, storytelling, discussions, and demonstrations • Examples: special know-how; domain experiences | <ul style="list-style-type: none"> • Articulated, structured, well-documented, easy to codify and transfer • Can be found in manuals, books, journals, and databases • Transferred using any information-sharing medium • Examples: Operating manuals, software artefacts, document templates |

(Sources: Chikh 2011; Heredia et al. 2013; Maravilhas & Martins 2019)

In the ICT context, ICT professionals’ *explicit* knowledge is formal and easy to share and includes software engineering methods, document templates, components and software artefacts (Chikh 2011). Tacit knowledge is an ICT professional’s experience and expertise and is more difficult to share (Babalola & Omatayo 2016). For example, technical information about ICT products, a textual description of functions of the software (such as a data dictionary or a prototype of software screens), and steps for writing a program to develop an ICT product manifest explicit knowledge. Owing to technology development, explicit knowledge sharing within the ICT sector becomes more manageable; availability of several technology platforms, such as electronic document management, knowledge map systems and procedure flows, fosters such knowledge (Panahi, Watson & Partridge 2013; Yuan et al. 2013). However, tacit knowledge, such as the introduction of shortcuts in programming, execution of programming for the attainment of high customer value, and application of domain knowledge and experience in programming, is more difficult to share (Ryan & Connor 2013). This form of knowledge is embedded in the human mind (Heredia et al. 2013) and is generally difficult for competitors to imitate. Thus, tacit knowledge sharing among ICT professionals is more complicated and requires more attention than explicit knowledge sharing.

ICT professionals can possess highly valuable tacit knowledge relating to product development, customer domains, ICT product development processes, project management or technology in general (Chikh 2011). The tacit, specific and complex knowledge that the organisation develops generates long-lasting advantages (Kong et al. 2020; Selamat & Yunus 2017). However, although tacit knowledge is recognised as a strategic resource for competitive advantage, it must be transferrable to be valuable (Mahdi, Nassar & Almsafir 2019). Thus, an enterprise's competitive success depends on its ability to create, identify and share the tacit knowledge of organisation employees (Holste & Fields 2010; Kong et al. 2020). KBV supports the argument that tacit knowledge sharing among ICT professionals can aid ICT organisations in achieving competitive advantage. The next section discusses ICT professionals' tacit knowledge sharing and the challenges ICT professionals face in sharing tacit knowledge.

2.5 Tacit Knowledge Sharing

2.5.1 Defining tacit knowledge in an ICT context

The concept of tacit knowledge gained widespread attention after the work of Polanyi was published in 1962 (Kimble 2013). Polanyi first introduced the term “tacit knowing” or “tacit knowledge” in his work *Personal Knowledge: Towards a Post-Critical Philosophy* (Polanyi 1966). The notion of “tacit knowledge” or “tacit knowing” describes the fact that “we can know more than we can tell” (Polanyi 1966, p. 87). He discussed “knowing” more than “knowledge” and his theory of tacit knowing focused on personal/individual knowledge (Kimble 2013). Specifically, Polanyi suggested that it is common for individuals to be able to do something but to be unable to explain how they do it (Chikh 2011). Many scholars have offered extensions to Polanyi's definition of tacit knowledge on two grounds, associating tacit knowledge with know-how and focusing on skills (Analoui, Sambrook & Doloriert 2014; Jalongo, Boyer & Ebbeck 2014; Mohammad & Al Saiyd 2012). Other researchers have averred that tacit knowledge is to be viewed as a field, ranging from low to high levels of “tacitness” (Insch, McIntyre & Dawley 2008; Al-Qdah & Salim 2013; Heredia et al. 2013; Panahi, Watson & Partridge 2013). Indeed, Nonaka and Takeuchi (1995) define tacit knowledge as highly personal know-how that is

difficult to formalise and explain or share with others (Mládková 2012). This definition is the most commonly used in the knowledge management literature.

Definitions of tacit knowledge used in various fields (such as manufacturing, health, public sector, education, retail, and engineering services) are similar. For this study, however, the definition of tacit knowledge adopted is derived from definitions in the ICT literature. Given the context of the current work (ICT), doing so seemed warranted. Thus, in this investigation, tacit knowledge is defined as highly personal, mostly abstract, unstructured, difficult-to-share, formalised, intuitive, experience-based, expert knowledge within the ICT context (Borges 2013; Fabbri et al. 2013; Heredia et al. 2013; Holste & Fields 2010; Nonaka & Takeuchi 1995; Ryan & Connor 2013).

2.5.2 Importance of tacit knowledge sharing among ICT professionals

ICT is a knowledge-intensive domain, and a considerable portion of ICT product knowledge is realised in tacit form and resides in ICT professionals' heads as know-how (Tsai & Cheng 2012). ICT products and services vary from the simple to complex and tend to be heavily dependent on one or more ICT professionals' technical and expert knowledge for successful completion of the product (Zahedi, Shahin & Babar 2016). Various ICT professionals, such as consultants, software development programmers, system analysts, and testing engineers (ACS 2017), are involved in developing products and providing services to customers; these offerings embody the key functions of their ICT organisations (Mishra & Uday Bhaskar 2011). Because ICT professionals are regularly exposed to new knowledge (owing to technology upgrades), sharing tacit knowledge quickly with other professionals to generate new ideas during the development of a new product or improve existing products is critical (Borges 2013). ICT professionals' tacit knowledge sharing is considered an important resource for ICT organisations; after all, it is valuable, rare, difficult to imitate and non-substitutable (Kraaijenbrink Spender & Groen 2010; Ryan & O'Connor 2009).

Problem-solving is an essential skill for ICT professionals during product development, and it can be enhanced by tacit knowledge sharing (Borges 2013). Indeed, many technical problems during any process of product development require professional skills to resolve issues and achieve a final product that satisfies customer

requirements (Lau et al. 2016). Borges (2013) has suggested that an ICT professional requires a combination of cognition and previous experience to solve problems when developing a new product. In a study of 102 ICT professionals, Wan et al. (2011) found that sharing tacit knowledge, such as know-how, supports problem solving and generation of new ideas during product development. Although their sample was too small for generalisability, they used Cronbach's alpha coefficients for validation; the overall alpha of 0.6 suggests high validity for the finding that tacit knowledge sharing among ICT professionals enhances product development (Wan et al. 2011).

ICT comprises a set of iterative activities that require professionals to interact closely with team members and share their know-how while developing a product (Čalopa, Horvat & Kuzminski 2015; Lavtar 2013). This know-how (tacit knowledge) sharing among ICT professionals facilitates an effective and defect-free production process, thus contributing to enhanced ICT product quality and faster delivery (Park & Lee 2014; Dreyer & Wynn 2016). Furthermore, tacit knowledge sharing in an ICT context is to some extent unique – as ICT products and services are used in different fields (domains), such as banking, telecommunication, health, education, and government – and has been found to have a positive correlation with profitability and performance (Houghton, Miller & Foth 2014; Shahiduzzaman & Alam 2014). To provide a satisfying ICT product or service to customers, ICT professionals should have an in-depth understanding of the domain's business processes. This includes process know-how, which is mostly tacit, in addition to explicit information about the domain (Seidler-de Alwis & Hartmann 2008). ICT professionals add their previous experience in similar domains to tacit knowledge obtained from a customer's domain, which will be shared with other ICT professionals to develop an ICT product or service that meets customer requirements (Borges 2013). Thus, sharing tacit knowledge plays a crucial role in developing an enhanced ICT product or service that satisfies their customers.

Additionally, sharing domain knowledge obtained through previous experience and through interaction with other ICT professionals can engender innovative ideas in product development (O'Connor & Basri 2014). Numerous researchers have asserted that innovation is enhanced when creativity is tied to expertise and high levels of experience (Johannessen & Olsen 2011; Ritala et al. 2015; Rose, Jones & Furneaux 2016). Innovation is a key success factor for improving ICT product features and

obtaining economic benefits (Cooke 2017; Edison, Bin Ali & Torkar 2013), as innovation supports improvement and generates new ideas during ICT product development. The findings of Edison, Bin Ali and Torkar (2013) align with the propositions of the current investigation. Their results revealed that tacit knowledge sharing among ICT professionals is critical for an organisation to achieve competitive advantage: ICT professionals' tacit knowledge sharing enhances product quality and creates innovative ideas during product development that will be difficult for competitors to imitate.

In summary, earlier research has noted the importance and influence of tacit knowledge sharing in the ICT sector (Souza, Falbo & Vijaykumar 2015; Wan et al. 2011). The importance of tacit knowledge sharing in ICT has been noted by numerous authors (e.g., Borges 2013; Čalopa, Horvat & Kuzminski 2015; Fabbri et al. 2013; Heredia et al. 2013). Tacit knowledge sharing is a fundamental asset for enhancing the quality of ICT products (Park & Lee 2014), improving product development (Wan et al. 2011; Zahedi, Shahin & Babar 2016) and fostering innovation in product development (Johannessen & Olsen 2011). Such outcomes can facilitate achieving competitive advantage in ICT organisations (Mahdi, Almsafir & Yao 2011) and increase revenue (Kaabi, Elanain & Ajmal 2018; Ramadan et al. 2017). Indeed, organisational success relies on creating and sustaining competitive advantage (Khan & Keung 2016; Venkitachalam & Busch 2012). The foregoing discussion thus implies that tacit knowledge sharing among ICT professionals can make a positive contribution to the success of an ICT organisation. For this reason, the literature related to tacit knowledge sharing among ICT professionals and the challenges they encounter is important and is discussed in the next section.

2.5.3 Tacit knowledge sharing among ICT professionals

Previous work has noted that ICT professionals share their tacit knowledge with other ICT professionals through social interaction, storytelling, observation and communities of practice (Seidler-de Alwis & Hartmann 2008; Yuan et al. 2013). That research is discussed below.

Social interaction

Social interaction usually happens through frequent and effective use of communication, including face-to-face communication and social media channels

(Arnett & Wittmann 2014; Jarrahi & Sawyer 2013). In particular, face-to-face communication enables an individual to witness, imbibe and experience emotions and feelings and developmental models while communicating their experience with other individuals (Rhoads 2010). Although social cues and direct communication are essential in social interaction, in the current digital world, video conferencing, chatting, brown-bag sessions and email interaction are equally valuable (Dulayami & Robinson 2015; Santos, Goldman & De Souza 2015). On the other hand, Dreyer and Wynn (2016) observed that tacit knowledge was shared among employees through informal channels, coffee break discussions, e-mails, and informal meetings. Indeed, social interaction is considered the main prerequisite, the richest medium, and an essential approach for sharing tacit knowledge (Chikh 2011; Ghobadi & D'Ambra 2013; Jaakkola, Heimbürger & Linna 2009; Ryan & Connor 2013; Solli-Sæther & Karlsen 2014; Wei & Miraglia 2017), because it allows immediate feedback in the form of face-to-face conversation, verbalisation, discussion and dialogue (Joia & Lemos 2010; Luo 2016).

Storytelling

Storytelling plays an important role among ICT professionals (Kalid & Mohmood 2009; Savita, Hazwani & Kalid 2011; Whyte & Classen 2012). According to Santoro and Brézillon (2012, p. 501), “[s]torytelling is the process of narrating anecdotes to illustrate a point and to effectively transfer knowledge about organisational and managerial systems, norms, values and culture”. In an ICT context, experienced software developers narrate their ICT product development experiences to fellow team members and share their repositories of knowledge or work experience from previous projects (Savita, Hazwani & Kalid 2011; Whyte & Classen 2012). These stories are, in fact, learnings that help novice ICT professionals manage the product development process better (Kalid & Mohmood 2009; Savita, Hazwani & Kalid 2011). Furthermore, stories not only convey functional information, such as the features of a new ICT product, but also propose contexts and uses that can give meaning to such features (Khoza 2019). Thus, storytelling is considered beneficial for sharing tacit knowledge in ICT organisations (e.g., Gouvêa, Santoro & Cappelli 2017; Holste & Fields 2010; Keskin et al. 2016; Martin-Niemi & Greatbanks 2010; Puerto & Stigammar 2010).

Observation

Observing the practices of other people supports adopting and imitating skills and behaviours (Panahi, Watson & Partridge 2013). Observation of skills can also be attained by watching images and videos and through video calls and videoconferencing (Rodríguez 2016; Batlle & Miller 2017). Friard and Gamba (2016) recognise that experience can be shared through videos. Morgan, Pullon and McKinlay (2015) assert that people can share their experience through pictures and videos. In the knowledge management literature, Panahi, Watson and Partridge (2013) and Von Krogh (2012) claim that observation is likely to be used for sharing tacit knowledge in the ICT context. However, sharing tacit knowledge solely through observation is not always feasible. For example, for a person to observe a swimmer and learn special swimming skills would be challenging. Similarly, having ICT professionals observing other ICT professionals' programming styles might be insufficient for learning complex aspects of the process such as shortcuts (Davey & Tatnall 2009). Communication is likely to be necessary to clarify any uncertainty experienced during the observation.

Community of practice

A community of practice is a group of people having the same interest who share best practices and learn improved ways to do something through regular interaction (Portoghese 2014). Ng and Tan (2009) define a community of practice as a group that learns together, shares knowledge and creates common practices. Currently, social media has aided people with a common interest to locate each other and meet in an online space, share their profiles and interest, develop relationships, and share their knowledge and experiences (Clark, Algoe & Green 2018; Roberts & David 2020). Nilmanat (2011) analyses the contents of discussion threads in an online community to show knowledge exchange through image sharing. Strahovnik and Mecava (2009) also acknowledge Web 2.0 tools, such as blogs, social networking sites, video sites, and wikis, as modern, efficient tools for exchanging ideas and experiences. Thus, a community of practice can be used for sharing tacit knowledge (Nistor et al. 2015; Krishnaveni & Sujatha 2012).

Tacit knowledge sharing can be a function of the context. For example, in an ICT context, storytelling can support tacit knowledge sharing (Khoza 2019). It may not be appropriate, however, for the manufacturing field, as someone likely needs to demonstrate a process for the observation is likely to be enhanced. Furthermore, in a

different milieu, a combination of approaches (e.g., observation and close communication) may be required. For instance, in the ICT area, ICT professionals can observe the way other experienced ICT professionals are coding. As already highlighted, however, observation alone is not enough, as participants need to interact to mitigate any ambiguity; thus, close interaction would need to be combined with observation.

Several studies have revealed that a culturally diverse work setting raises problems for tacit knowledge sharing (Hau et al. 2013; Söderberg, Krishna & Bjørn 2013; Zahedi, Shahin & Babar 2016). However, although ICT professionals' tacit knowledge sharing has been discussed in the extant knowledge management literature, a paucity of research exists in the ICT context, particularly pertaining to culturally diverse work settings (e.g., Chikh 2011; Ghobadi & D'Ambra 2013; Nilmanat 2011; Panahi, Watson & Partridge 2013; Savita, Hazwani & Kalid 2011). This is not to say that tacit knowledge sharing approaches used by ICT professionals (social interaction, storytelling, observation, community of practice) have no merit. However, as noted above, such options are hindered in a culturally diverse work setting because ICT professionals are from different cultural backgrounds, which results in less interaction. Therefore, expanding understanding of the ICT professionals' commonly used and preferred approaches to share their tacit knowledge in a culturally diverse work setting seems warranted. After all, tacit knowledge sharing is crucial in ICT organisations. The next section discusses the difficulties of tacit knowledge sharing in the ICT context.

2.5.4 Difficulties of tacit knowledge sharing in the ICT context

As discussed in Section 2.2, the Australian ICT sector utilises skilled immigrant ICT professionals to overcome its shortage of ICT professionals (ACS 2019; Mahmud, Alam & Härtel 2014). Doing so, however, creates a culturally diverse work setting. Scholars have addressed barriers to sharing tacit knowledge among ICT professionals in culturally diverse work settings. These include cultural differences across ICT professionals (Bengoa & Kaufmann 2014; Connelly et al. 2014; Kivrak et al. 2014; Okoroafor 2014), and skilled immigrant ICT professionals' lack of time, language differences, lack of trust, and concealment of knowledge from host country ICT professionals (Kivrak et al. 2014; Okoroafor 2014; Shah, Russell & Wilkinson 2017).

Concealment

Previous research has found that concealment of individual knowledge is likely to reduce tacit knowledge sharing (Peng 2013; Serenko & Bontis 2016). According to Connelly et al. (2012), concealment occurs when individuals withhold existing knowledge, even after someone has requested it. For instance, if employees feel that their knowledge will be misused, then fear of revealing that valuable knowledge and eventually losing their knowledge advantage in the firm will result in decreased motivation to share the requested information (Bengoa & Neuhauser 2014; Chong & Besharati 2014). This occurs mostly because of lack of trust among employees (Cumberland & Githens 2010). In a culturally diverse work setting, employees from different cultural backgrounds are more likely to be lacking in trust, as they have different beliefs and value systems (Søderberg, Krishna & Bjørn 2013). The variegated cultural backgrounds in culturally diverse ICT workplaces can lead to reduced trust and thus promote concealment of individual knowledge.

Paucity of time

Perceived lack of time has also been linked to reduced tacit knowledge sharing (Connelly et al. 2014; Qureshi & Evans 2015). This situation is likely to be present in ICT organisations: ICT professionals often work within time constraints and with tight deadlines to deliver an ICT project (Kuutila et al. 2020). Owing to the compressed timeframe, ICT professionals frequently try to complete activities by themselves rather than taking time to share their tacit knowledge (Akgün et al. 2017; Noury, Gand & Sardas 2017). Pugna and Boldeanu (2014) also mention that lack of time can prevent ICT professionals from sharing their tacit knowledge. Skok and Tahir (2010) suggest that short-term employee contracts (prevalent in Australia's ICT sector) can be a barrier to tacit knowledge sharing; skilled immigrant ICT professionals working under such contracts are under increased time pressure as they must complete their assignment within the contract period (Shah, Russell & Wilkinson 2017).

The recent unprecedented COVID-19 pandemic has placed extra pressure on ICT professionals, as they are often pressed to complete tasks within a relatively short period of time. Accordingly, they may be reluctant to share their tacit knowledge owing to the time crunch. Skilled immigrant ICT professionals also require more time to transition into a workplace that has culturally diverse employees (Søderberg,

Krishna & Bjørn 2013). During the transition period, they are likely to have less close interaction with peers, which is likely to reduce tacit knowledge sharing.

Language and communication

Additionally, language differences, poor verbal and written communication, and deficiencies in interpersonal skills could hinder tacit knowledge sharing (Connelly et al. 2014; Qureshi & Evans 2015; Zahedi, Shahin & Babar 2016). For example, a study of multicultural teams in joint ventures in Qatar, Libya and Bulgaria led Kivrak et al. (2014) to conclude that language and communication problems are obstacles to tacit knowledge sharing. In a study of knowledge sharing among Japanese doctoral students, the main barrier to sharing tacit knowledge was language differences (Islam et al. 2013). In fact, reduced communication among employees has been observed to lead to decreased tacit knowledge sharing (Chong & Besharati 2014; Skok & Tahir 2010). As discussed in Sections 2.2 and 2.3, Australian ICT organisations hire foreign ICT professionals to address their skill shortages and although these ICT professionals – often from Asian backgrounds – may be literate in English, it is their second language.

Therefore, communication between native English-speaking and non-native-speaking ICT professionals can potentially create misunderstanding through incorrect use of words, insufficient knowledge of English idioms, and misinterpretations. Scholars have noted that language is part of culture and vice versa (Jiang 2000; Kim 2003; Stewart & Strathern 2017). Therefore, language and cultural differences are likely to create possible miscommunication, misunderstanding and misinterpretation, hindering tacit knowledge sharing among ICT professionals (Okoroafor 2014).

Cultural differences

Cultural differences among employees are considered a barrier to tacit knowledge sharing (Haldin-Herrgard 2000; Mahroeian & Forozia 2012). Olaniran (2017) asserted that the personal nature of tacit knowledge and its embeddedness in social and cultural values increase the difficulty for effective sharing of it. Indeed, previous studies (e.g., Asrar-Ul-Haq & Anwar 2016; Reige 2005; Sidani & Thornberry 2009) have shown that cultural values are likely to influence tacit knowledge sharing; such knowledge sharing may be more efficacious in some countries than in others because of dissimilarities in national culture or ethnic background. For instance, Al-Esia and Skok

(2014) report that UAE nationals shared more knowledge with other U.A.E. nationals than with co-workers from other countries; their doing so was a function of their having increased trust in and social connections with their fellow citizens. Similarly, Bengoa and Kaufmann (2014) note that failing to tailor knowledge sharing methodologies to the local business environment and culture produces alienation and resistance to knowledge sharing. Cultural barriers can be even stronger where local gradations and interpretations may be crucial to tacit knowledge sharing (Okoroafor 2014).

Individuals working in an unfamiliar cultural environment may become socially withdrawn and isolated, which can have a detrimental effect on relationships and trust, both of which are known to be necessary for tacit knowledge sharing (Pinjani & Palvia 2013). Absence of past associations and trust among people from different cultures represent major barriers to tacit knowledge sharing (Cumberland & Githens 2010). Moreover, miscommunication and misinterpretation occur owing to cultural variations; these two phenomena will adversely influence close interaction (Okoroafor 2014). This context might well affect tacit knowledge sharing in culturally diverse ICT workplaces, where close interaction is essential.

Based on the foregoing discussion of tacit knowledge sharing barriers, this study focuses on the obstacles caused by cultural differences. This is critical because cross-cultural interaction among ICT professionals is an inevitable and crucial element for developing ICT products and services (Barrett & Oborn 2010; Presbitero 2016). In fact, cultural barriers are considered the most critical obstruction to tacit knowledge sharing (Okoroafor 2014). Where knowledge sharing failure occurs due to cultural hurdles, either party may make some basic, but incorrect, assumptions about the knowledge already possessed by the other individual (Mezghani, Expósito & Drira 2016; Söderberg, Krishna & Bjørn 2013; Solli-Sæther, Karlsen & Oorscot 2015). There has to date been little research exploring the influence of cross-cultural interaction in the context of tacit knowledge sharing approaches.

In addition, there is a paucity of empirical evidence regarding tacit knowledge sharing approaches that can be effective in culturally diverse ICT workplaces to overcome the aforementioned cultural barriers. Accordingly, there is a need for research to assist ICT organisations in overcoming tacit knowledge sharing challenges in culturally diverse organisations.

As noted earlier, previous work has shown that culturally diverse ICT workforces can cause inadequate social interaction, as workers come from different cultural backgrounds with dissimilar belief systems (Zahedi, Shahin & Babar 2016). This shortage of social interaction can impede tacit knowledge sharing, as ICT professionals share their experience and know-how processes through such interaction. Kivrak et al. (2014) suggested that a dearth of interaction across group boundaries, and a socially fragmented environment in which individuals have little in common, can restrict tacit knowledge sharing. However, as already highlighted, the nature of culturally diverse work settings in the Australian ICT sector does not really encourage ICT professionals to share their tacit knowledge with other professionals through traditional approaches such as social interaction, storytelling, observation and communities of practice. Therefore, Australian ICT organisations require an effective framework that can assist them in facilitating tacit knowledge sharing among ICT professionals in their unique, culturally diverse workplaces.

Several scholars have discussed the usage of CQ in culturally diverse work settings to help employees function effectively in cross-cultural interaction (Chua, Morris & Mor. 2012; Elenkov & Manev 2009; Imai & Gelfand 2010; Ott & Michailova 2016; Rockstuhl et al. 2011). Previous research shows that there is a relationship between CQ and knowledge sharing (Ali et al. 2019; Alidoust & Homaei 2010; Chen & Lin 2013; Ismail 2015; Vlajcic et al. 2019). The current study argues that CQ may be utilised to facilitate tacit knowledge sharing in the unique, culturally diverse Australian ICT workplace. The possible link between CQ and tacit knowledge sharing is explained in Section 2.7. It has value in this setting because CQ may assist an individual in functioning effectively in a culturally diverse work setting. The sections below proffer an overview of CQ, CQ components, development of CQ, measurement of CQ and CQ outcomes, and then presents a review of literature related to the contributions of CQ in an ICT context and a culturally diverse ICT workplace. Then, the possible link between CQ and tacit knowledge sharing is explored.

2.6 The Concept of Cultural Intelligence (CQ)

The theory of CQ mirrors other theoretical distinctions related to intelligence domains, including emotional intelligence (EQ), social intelligence (SQ), and general mental ability (IQ) (Zhang 2013). Earley and Ang (2003) proposed the theoretical

construct of CQ to explain why some people are better able to manage culturally diverse situations. Earley and Ang (2003, p. 59) define CQ as “a person’s capability for successful adaptation to new cultural settings”. The acronym “CQ” was coined by Earley in 2003, although the concept of CQ was well known in the fields of business, psychology and the military before this time (Gelfand, Imai & Fehr 2008). In the literature, “CI” is also found (Fakhreidin 2018). However, the term CQ is used in this study for consistency, as it is the term used by Earley and Ang (2003) as well as the most utilised expression in the cross-cultural literature (see, e.g., Ang et al. 2007; Chen 2015; Chen & Lin 2013; Chua, Morris & Mor 2012; Elenkov & Manev 2009; Imai & Gelfand 2010; Ismail et al. 2016; Ott & Michailova 2016).

Earley and Ang (2003) based CQ on the theory of multiple intelligences and it comprises metacognitive, cognitive, motivational and behavioural aspects, as shown in Figure 2.5 (Ang & Van Dyne 2008; Ng & Earley 2006). Livermore (2011) uses these CQ components but changed the terminology to CQ strategy (metacognitive), CQ knowledge (cognitive), CQ drive (motivational) and CQ action (behavioural) to foster understanding in the business field. However, in the field of cross-cultural and CQ research, the terms metacognitive CQ, cognitive CQ, behavioural CQ and motivational CQ are the common forms, as per Earley and Ang (2003). Several scholars have employed these four components in their research related to culturally diverse work settings (Ali et al. 2019; Bücken et al. 2014; Chen & Lin 2013; Engle & Crowne 2014; Huff, Song & Gresch 2014; Ismail 2015).

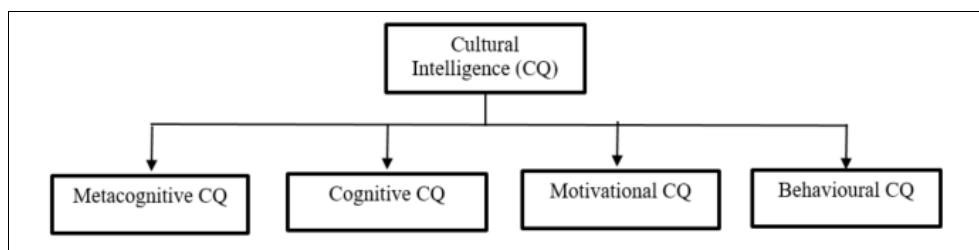


Figure 2.5. CQ components (Source: Earley & Ang 2003).

2.6.1 The components of CQ

Table 2.2 provides a brief description of the four CQ components.

Table 2.2. CQ components definition and description

| CQ components | Definition | Description |
|----------------------|--|--|
| Metacognitive CQ | An individual's level of conscious cultural awareness during intercultural interactions | An individual can consciously question their cultural assumptions, reflect during interactions, and adjust their cultural knowledge when interacting with others from different cultures |
| Cognitive CQ | An individual's knowledge of norms, practices, and conventions in different cultural settings, and an understanding of the similarities and differences between them | An individual can adjust well in culturally different societies because of their cultural knowledge and understanding of different cultures |
| Motivational CQ | An individual interest in learning and functioning in cross-cultural situations | An individual can be attracted to intercultural situations because they value the benefits of these interactions and are confident that they can cope with the inherent challenges of cultural differences |
| Behavioural CQ | An individual's ability to display appropriate verbal and non-verbal behaviours when interacting with others from diverse cultural backgrounds | An individual can quickly adapt to another's gestures to ensure a comfortable intercultural exchange, and they have behavioural flexibility in intercultural settings |

(Sources: Ang et al. 2007; Chen 2015; Chen & Lin 2013; Elenkov & Manev 2009; Imai & Gelfand 2010; Rockstuhl et al. 2011; Templer, Tay & Chandrasekar 2006)

These four CQ components are qualitatively *distinct* and *complementary* dimensions of CQ that together form an overall CQ (Ang et al. 2007; Chen 2015; Chen & Lin 2013; Elenkov & Manev 2009; Imai & Gelfand 2010; Rockstuhl et al. 2011; Templer, Tay & Chandrasekar 2006). They structure an individual's ability to learn about other cultures, their capacity to discern how to learn about culture, their aspiration to interact across cultures, and their capability to change behaviour successfully (Ott & Michailova 2016).

Each CQ component is equally important in helping individuals gain enhanced understanding and improving intercultural interactions (Earley & Ang 2003). Van Dyne et al. (2012) refine the conceptualisation to increase understanding of the meaning of the four CQ components. They do so by introducing sub-dimensions for each of the four CQ factors: three sub-dimensions for the metacognitive, two for the cognitive, three for the motivational and three for the behavioural (Table 2.3). Figure 2.6 shows the CQ framework with sub-dimensions proposed by Van Dyne et al.

(2012). The current study utilises these four components as a guide to analysing and interpreting the findings.

Table 2.3. CQ components

| CQ components | Sub-dimensions | Description |
|-------------------------|----------------------------|--|
| Metacognitive CQ | Planning | Planning involves taking the time to put together a culturally appropriate strategy prior to a cross-cultural encounter |
| | Awareness | Awareness involves cultural thinking and knowledge of self and others |
| | Checking | Checking entails reflecting, adapting, and revising culturally appropriate strategies when actual experiences differ from expectations |
| Cognitive CQ | Culture-general knowledge | Culture-general knowledge is a knowledge of the universal elements that constitute a cultural environment |
| | Context-specific knowledge | Context-specific knowledge pertains to displays of cultural universals in a specific domain and procedural knowledge of how to be effective in that domain |
| Motivational CQ | Intrinsic | Intrinsic motivational CQ includes a basic interest in working in diverse groups where people come from different cultural backgrounds |
| | Extrinsic | Extrinsic motivational CQ includes a sense of increased employability based on having intercultural experiences and an enhanced reputation based on international work experiences |
| | Self-efficacy | Self-efficacy motivational CQ entails a sense of confidence to interact with individuals having different cultural backgrounds and work in culturally diverse groups and settings |
| Behavioural CQ | Verbal | Verbal behaviour includes flexibility in using pauses and silences, as cultures differ in the extent to which people take turns and use or avoid silence |
| | Non-verbal | Non-verbal behaviour includes modifying facial expressions and gestures, as some cultures are neutral, and others are expressive, thus differing in their physical gestures |
| | Speech acts | Speech includes word, selection, degree of directness, and force of speech acts |

(Sources: Ang, Rockstuhl & Tan 2015; Subramanian et al. 2011; Van Dyne et al. 2012)

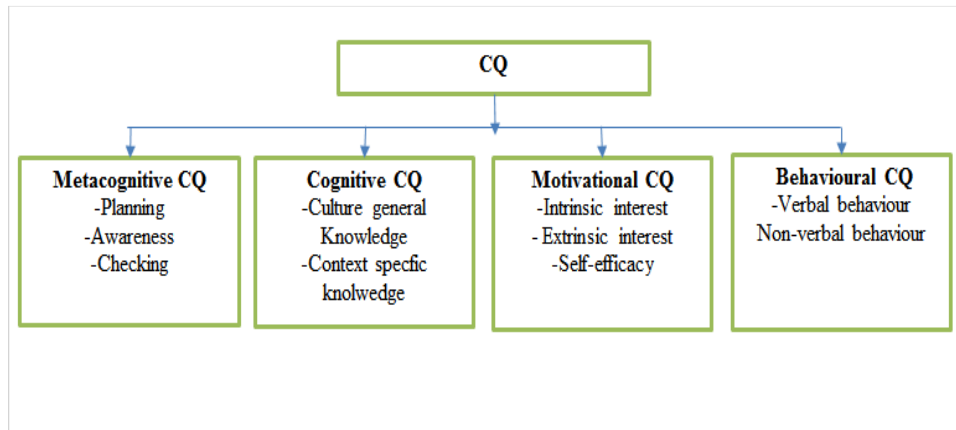


Figure 2.6. CQ framework with sub-dimensions (Source: Van Dyne et al. 2012).

CQ has attracted keen research interest in the last decade (Ott & Michailova 2016) as globalisation has led to an increase in culturally diverse contact and situations (Kim & Van Dyne 2012). The present study reviews 81 empirical and conceptual articles published on CQ from 2002 to 2019. Conceptual papers discussed regarding introducing CQ in an organisation, utilising CQ (Zhang 2013), developing CQ (Ng et al. 2009), and reviewing CQ components (Blasco et al. 2012). Most of the empirical studies reviewed were quantitative. They can be grouped into three categories: measuring CQ (Bücker, Furrer & Lin 2015; Engle & Crowne 2014; MacNab & Worthley 2012), antecedents of CQ (Engle & Crowne 2014; Mac Nab & Worthley 2012) and outcomes of CQ (Ali et al. 2019; Bücker et al. 2014; Chen 2015; Fard et al. 2015; Ismail et al. 2016). Research related to the outcomes of CQ, and developing CQ is summarised in Appendixes A and B and further discussed in Chapter 4 along with research findings. However, the current study focuses on the outcomes of CQ as there is knowledge gap found in the literature review regarding the relationship between CQ and tacit knowledge sharing, discussed in Section 2.8.

Possessing high CQ has been found to have salutary impacts in intercultural contexts (Chen, Liu & Portnoy 2012; Clark & Polesello 2017). The positive outcomes are expatriate performance (Chen et al. 2010), overall work performance (Ang et al. 2007), problem-solving skills, team learning (Ott & Michailova 2016), and group and leader effectiveness (Groves, Feyerherm & Gu 2015). Moreover, CQ has been observed to have a favourable impact on cultural adjustment (Huff, Song & Gresch 2014), expatriate adjustment (Chen et al. 2010), work adjustment (Gudmundsdottir 2015), integrative negotiation (Imai & Gelfand 2010), international executive

potential (Van Dyne et al. 2008), communication effectiveness (Bücker et al. 2014), leader emergence (Rockstuhl et al. 2011), team satisfaction, interpersonal trust (Chua, Morris & Mor 2012), knowledge transfer (Ismail 2015) and team knowledge sharing (Chen & Lin 2013).

Studies examining CQ outcomes are summarised in Appendix A. This sampling of empirical work in CQ, as well as additional research in this area, has continued to support Earley and Ang's (2003) original postulation that individuals with higher CQ are more likely to be effective in culturally diverse situations than individuals with lower CQ. All the above mentioned research on CQ outcomes was conducted in culturally diverse work settings across various sectors, including education, manufacturing, technology, government and ICT. The growing body of research has also acknowledged that CQ is useful for examining cross-cultural competencies in various fields having culturally diverse work settings, including the ICT sector (Ng et al. 2012). CQ and its importance in the ICT sector are discussed in next section.

2.6.2 CQ and its importance in ICT organisations

Several studies have shown that CQ is an important ability for individuals in culturally diverse work settings (Chen, Liu & Portnoy 2012; Clark & Polesello 2017). Although CQ may aid in easing cross-cultural interaction in all organisations with culturally diverse work settings, it plays a particularly crucial role in ICT organisations due to the nature of this field of work (Rockstuhl et al. 2011). As already discussed, ICT organisations in Australia rely heavily on overseas ICT professionals. These overseas ICT professionals visit Australia for a short period of time but are working to tight timelines to complete their ICT product development assignment (Shah & Barker 2017) and therefore do not have abundant time to invest in relationship building. As discussed in Section 2.2, ICT professionals do not work independently to produce products and services. Indeed, they share their expert knowledge to generate ICT offerings through close interaction. This close engagement between overseas and domestic ICT professionals can take time to evolve owing to their cultural differences (Søderberg, Krishna & Bjørn 2013; Westrup et al. 2018). The absence of such interaction in culturally diverse ICT workplaces can negatively impact ICT product and services development, as the chances of sharing their expert knowledge are likely reduced.

The reasons mentioned above illustrate the distinction between ICT organisations and multinational corporation in other sectors where skilled migrants are used to overcome a skill shortage. Following the ICT sector, the food service industry is the greatest sponsor of skilled migrant visas (ACS 2019; Australian Government Department of Home Affairs 2019). In the food service industry, skilled migrants do not have the same deadline pressures to complete their assignments during their stay period as they are more focused on daily duties. Additionally, tacit knowledge sharing is a crucial element to complete ICT assignments, whereas in the food service industry tacit knowledge sharing is likely to play a lesser role. Thus, it can be argued that ICT organisations are unique in utilising skilled migrant when compared to multinational corporations in other sectors, despite the presence of culturally diverse work setting in both.

CQ likely enhances ICT professionals' communication in culturally diverse ICT organisations. Individuals with high CQ are likely to possess conscious cultural awareness, to understand differences and similarities of other cultures, and to adjust behaviour during interactions with people from dissimilar cultural backgrounds (Chen & Lin 2013; Chua, Morris & Mor 2012; Ott & Michailova 2016). Empirical research has found that all four CQ components enhance and support effective communication, as well as improving cross-cultural interaction (Bücker et al. 2014; Gudmundsdottir 2015; Huff, Song & Gresch 2014). CQ can facilitate ICT professionals' ability to communicate better with end-users in culturally diverse work settings and better understand their product and service requirements (Möller 2006; Fisher 2020). Those professionals can then effectively communicate those end-user requirements and knowledge to other ICT professionals working in product development to achieve an enhanced end-user product and increase customer satisfaction.

Furthermore, ICT products and services can vary from simple to complex and are heavily dependent on one or more ICT professionals' technical and expert knowledge to complete the product successfully (Zahedi, Shahin & Babar 2016). To develop or upgrade existing ICT products, a team of ICT professionals works together to understand the ICT product requirements for the given domain, finding innovative solutions and producing the product according to the domain's specification (Lindgren & Münch 2016). These efforts require improved collaboration among ICT

professionals. However, such cooperation may not be effective in a culturally diverse ICT organisation. In such instances, there is likely to be conflicting working styles, owing to ICT professionals' variegated cultural backgrounds (Hoda et al. 2017). For example, ICT professionals from Japan may not raise their opinions strongly in a group meeting; however, ICT professionals from Western countries will likely voice their opinion strongly. Research shows that if individuals possess high CQ, they will know the norms and practices, have an understanding of the variations between cultures, and possess a conscious cultural awareness, all of which are likely to enhance effective interaction and work relationships (Chua, Morris & Mor 2012; Rockstuhl et al. 2011; Van Dyne et al. 2012). In turn, such beneficial consequences support a culturally diverse ICT organisation where improved work relationships increase performance (Wu & Ang 2011).

ICT professionals from different cultural backgrounds working together on a project are likely to face challenges requiring adjustment to their colleagues, owing to varied cultural beliefs, perceptions, and values (Barrett & Oborn 2010; Ghobadi & Mathiassen 2016). The need to adjust to cross-cultural work settings can hinder frequent communication, which, in turn, may become a barrier for knowledge sharing. Gudmundsdottir (2015) proposes that individuals with high CQ possess enhanced cross-cultural adjustment ability, as they are consciously aware of others' cultural preferences, adjust their mental models before and during interactions, and adapt verbal and non-verbal behaviour during interactions. This aligns with communication accommodation theory. This theory argues that people adjust their gestures, vocal patterns and speech to accommodate others (Gallois & Giles 2015). Such behaviour is reflective of CQ, as people with high CQ can modify their behaviour in cross-cultural interaction, thus decreasing intercultural obstacles. As such, high CQ ICT professionals conceivably possess a cross-cultural adjustment ability that can reduce intercultural obstructions in culturally diverse ICT organisations.

From the above discussion, it appears that CQ can help enhance work relationships, cross-cultural adjustment, and communication by ICT professionals in culturally diverse work settings; this, in turn, could improve ICT organisation performance. Achieving a competitive advantage for an ICT organisation is critical in today's rapidly-changing technological business environment (Namada 2018). Although

several theoretical and pragmatic concepts are available to help an organisation achieve that advantage, tacit knowledge sharing among ICT professionals is considered as an especially desirable way to do so in the ICT context (as discussed in Section 2.5).

Specifically, as discussed in Section 2.3, there is high mobility of overseas ICT professionals in Australian ICT workplaces. In such a high-mobility environment, it is essential that the local ICT professionals interact with overseas ICT professionals and share their tacit knowledge to develop an ICT product or service in the stipulated time timeframe before the overseas ICT professionals return to their country (Shah 2012; Shemi, Mgaya & Nkwe 2014). This constant presence of cultural diversity in Australian ICT organisations adds another layer of challenges to tacit knowledge sharing. As discussed above, CQ can help individuals enhance cross-cultural communication, and thereby produce better interaction and faster cross-cultural adjustment, which may help to facilitate tacit knowledge sharing.

The next section discusses the possible link between CQ and tacit knowledge sharing in an ICT context.

2.7 CQ and Tacit Knowledge Sharing

This section argues that CQ may be used to facilitate tacit knowledge sharing and discusses the potential relationship between the four CQ components and tacit knowledge sharing. The discussion in Sections 2.2 and 2.5 suggests that ICT professionals in the ICT sector need to share tacit knowledge to develop ICT products and services and achieve competitive advantage. However, as discussed in Section 2.5.4, culturally diverse Australian ICT workplaces are likely to be challenging for tacit knowledge sharing among ICT professionals. This section argues that CQ may be used to facilitate tacit knowledge sharing and discusses the potential relationship between the four CQ components and tacit knowledge sharing.

Metacognitive CQ components can enhance cross-cultural adjustment for individuals, as CQ skills can lead persons to consciously question their cultural assumptions, reflect during interactions, and adjust their cultural knowledge when interacting with others from different cultures (Chua, Morris & Mor 2012; Lorenz et al. 2017). The outcome is improved intercultural relationships and social interaction,

including enhanced closeness (Brinol & DeMarree 2011; Chua, Morris & Mor 2012; Dreyer & Wynn 2016). Likewise, ICT professionals with high metacognitive CQ are likely to adjust well during encounters with other ICT professionals from different cultural backgrounds. Metacognitive components therefore aid ICT professionals in effective interaction in cross-cultural contexts. Accordingly, a close relationship between ICT professionals from different cultures may arise when they become aware of cultural cues, understand the cultural implications, and adjust during interactions (Mor, Morris & Joh 2013; Le, Jiang & Radford 2020). When there is a good and close relationship, trust among ICT professionals from various cultural backgrounds is more likely to be enhanced (Rockstuhl & Ng 2008). This trust may boost ICT professionals' willingness to share tacit knowledge in culturally diverse ICT workplaces (Balogun 2014; Tong, Tak & Wang 2013). Thus, there seems a possible link between metacognitive CQ and tacit knowledge sharing, and this link fits particularly well in the ICT work setting.

Individuals with high *cognitive* CQ skills can adjust well in culturally different societies and workplaces (Subramanian et al. 2011), owing to their cultural knowledge and understanding of different cultures (Adair, Hideg & Spence 2013; Huff, Song & Gresch 2014). Comprehending alternative cultural nuances likely helps ICT professionals communicate sensitively with other ICT professionals from dissimilar cultures, making judgement calls and decisive actions more relevant to the situation (Ang & Van Dyne 2008). According to Day (2017), Rockstuhl et al. (2011) and Van Dyne et al. (2012), those with high cognitive CQ will have a knowledge of norms and practices, an understanding of differences between cultures, and a conscious cultural awareness. All these factors will likely help to reduce anxiety, enhance trust and build confidence in cross-cultural interaction (Rockstuhl & Ng 2008; Ng, Van Dyne & Ang 2012). This might also assist ICT professionals who use storytelling for tacit knowledge sharing. Thus, there seems to be a possible link between cognitive CQ and a tacit knowledge sharing approach, especially in the ICT context.

Individuals with a high level of *motivational* CQ are attracted to intercultural situations because they value the benefits of these interactions and are confident that they can cope with the inherent challenges of cultural differences (Chen et al. 2010). Motivational CQ has received special attention within the cross-cultural literature

and is seen as a key capacity for adjusting to new cultural environments and improving relationship networks (Rose et al. 2010). Research also shows that individuals with high motivational CQ can interact effectively with people from various cultural backgrounds (Bücker et al. 2014; Gudmundsdottir 2015; Huff, Song & Gresch 2014). This is because such individuals will have an interest in learning new cultures; this then increases the person's frequency of interaction with individuals from other cultures (Rehg, Gundlach & Grigorian 2012; Van Dyne et al. 2012). Consequently, willingness to share tacit knowledge among individuals is likely enhanced (Gudmundsdottir 2015). Thus, there is a possible link between motivational CQ and tacit knowledge sharing and this is also relevant to ICT organisations

Finally, an individual with a high level of *behavioural* CQ can quickly adapt to another's gestures to ensure a comfortable intercultural exchange (Rehg, Gundlach & Grigorian 2012). Moreover, they exhibit behavioural flexibility in intercultural settings (Van Dyne et al. 2012). Behavioural expressions are significant in cross-cultural encounters and a critical factor when working closely with employees from different cultural backgrounds (Wu & Ang 2011). If ICT professionals possess a high level of behavioural CQ, intercultural barriers are more likely to be reduced in cross-cultural encounters, which subsequently helps to enhance cultural adjustment (Jyoti, Kour & Bhau 2015). In turn, teamwork is more likely to be improved, and a "clan culture" work environment may ensue (Putranto & Woods 2016; Yousofpourfard 2010). A clan culture work environment is defined as a friendly workplace where people perform the job with increased collaboration and commitment (Suppiah & Sandhu 2011). Consequently, clan culture settings, together with augmented collaboration, may aid ICT professionals in enhancing their attitudes and intention to share tacit knowledge (Wiewiora et al. 2014; Lee Shiue & Chen 2016). Such milieus might also reduce cultural barriers that hinder tacit knowledge sharing. Thus, there seems to be a possible link between behavioural CQ and tacit knowledge sharing, and this also applies to the ICT industry.

Although each CQ component seems to have a role to play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse ICT workplace, all four components are equally important and linked (Ang, Rockstuhl & Tan 2015; Chen & Lin 2013;). Scholars (e.g., Earley & Ang 2003; Thomas et al. 2008) also note

that CQ components are interlinked with no set sequence in achieving one component before others. From the above discussion, there seems to be strong evidence that CQ can help to enhance social interaction, closeness, trust, teamwork, and development of a clan culture work environment. These salutary outcomes likely help ICT professionals augment their willingness to share tacit knowledge, reduce the cultural barriers that impede tacit knowledge sharing, improve tacit knowledge sharing behaviour, and facilitate tacit knowledge sharing approaches.

This possible link between CQ and tacit knowledge sharing has been acknowledged by several scholars (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019). For example, Chen and Lin (2013) observe that all components of CQ directly influenced knowledge sharing in teams in 12 hi-tech Taiwanese firms. However, their work did not distinguish between explicit and tacit knowledge, nor did it consider tacit knowledge sharing specifically. Alidoust and Homaei (2010), using university students as the study sample, found that there was a relationship between CQ and knowledge management. They did not discuss whether CQ played a role in facilitating tacit knowledge sharing, nor did they collect data related to a CQ and tacit knowledge sharing relationship. Vlajcic et al. (2019) used 103 expatriate managers from multinational companies in Croatia and find that there was a relationship between CQ and knowledge transfer. The authors utilise quantitative methods to find the association between CQ and knowledge transfer. However, they do not expand understanding of the *underlying dynamics* of CQ's role in knowledge transfer. They focus solely on discovering the relationship between CQ and knowledge transfer rather than exploring *how* CQ facilitates tacit knowledge sharing in the ICT context. Similarly, research by Ali et al. (2019), Ismail (2015), and Ismail et al. (2016) uses quantitative methods and focuses on identifying a relationship between CQ and knowledge sharing; none of these studies consider the relationship between CQ and tacit knowledge sharing in depth (e.g., CQ's role in tacit knowledge sharing, tacit knowledge sharing willingness, and tacit knowledge sharing barriers). Furthermore, these investigations were not conducted primarily in an ICT context. In other words, there remains limited empirical evidence in the literature to support the supposition that CQ facilitates tacit knowledge sharing in the ICT context in Australia's unique culturally diverse work settings.

However, as already discussed, researching the relationship between CQ and tacit knowledge sharing in an ICT context is crucial. This is because tacit knowledge sharing in ICT organisations is vital for achieving sustainable and competitive advantage while, at the same time, cross-cultural interaction is inevitable in ICT organisations as they employ ICT professionals from around the world and serve customers globally. Thus, despite the efforts of the abovementioned scholars, CQ and tacit knowledge sharing in the ICT sector – in particular, within the Australian context – are not fully understood. As such, the relationship between CQ and tacit knowledge sharing has yet to be examined.

Despite the importance of facilitating tacit knowledge sharing in ICT organisations (Mohajan 2017; Ryan & O'Connor 2009), as discussed earlier in this chapter there is a paucity of research in knowledge management and cross-cultural literature regarding the role of CQ in facilitating tacit knowledge sharing in culturally diverse ICT organisations. Examining tacit knowledge sharing in an ICT context merits research attention. The current research, therefore, seeks to address the described knowledge gap regarding the potential contributions of CQ in facilitating tacit knowledge sharing in a culturally diverse Australian ICT organisation. Figure 2.7 presents the possible link between CQ and tacit knowledge. In the Figure 2.7, the content in the first two highlighted boxes (CQ and CQ outcomes) represents the actual factors extracted from literature, and the last box (outcome) represents the expected possible result. This will be examined by obtaining ICT professionals' viewpoints and experiences.

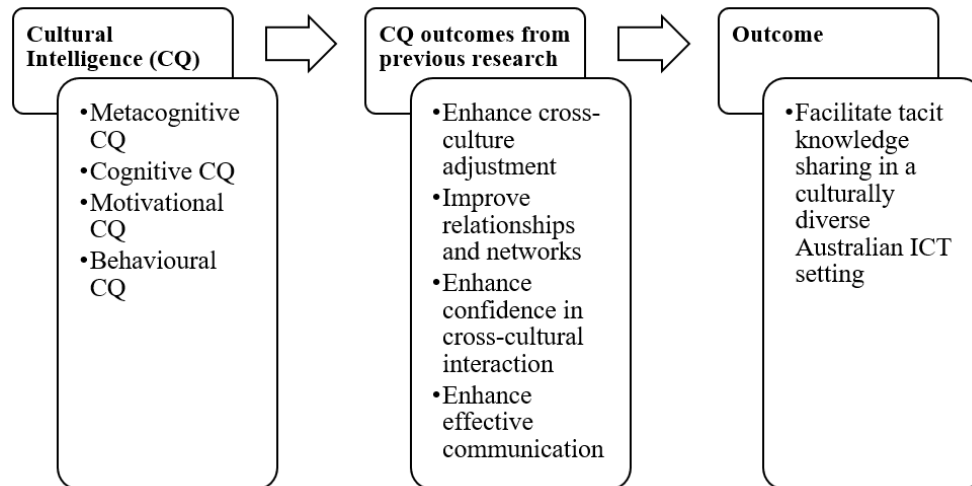


Figure 2.7. CQ and tacit knowledge sharing link.

2.8 Research Gap and Research Question

As already noted, close interaction tends to be reduced in culturally diverse ICT workplaces (Ang & Inkpen 2008), while social exclusion within the workplace and misunderstandings between individuals from different cultures are also likely (Mazur 2010; Mor Barak 2015; Shah & Barker 2017). This social milieu leads to problems in sharing tacit knowledge. A framework is needed to overcome the barriers posed by culturally diverse workplaces to sharing tacit knowledge among ICT professionals in Australia.

As a result of globalisation in business, CQ has become an increasingly important ability (Caputo et al. 2019; Imran Ali et al. 2019; Ott & Michailova 2016) and has captured scholarly attention (Korzilius, Bücken & Beerlage 2017). The researcher reviewed 80 journal articles regarding CQ, including conceptual and empirical studies, published between 2003 and 2019. Forty-five articles pertained to the outcome of CQ; this indicates the importance of possessing CQ in a globalised world. CQ outcomes identified included improved effective communication, expatriates performance, enhanced job satisfaction and collaboration, augmented cross-cultural adjustment in a cross-cultural setting, and heightened knowledge management (Ali et al. 2019; Al Mousa & Jones 2006; Ang et al. 2007; Chen 2015; Chen & Lin 2013; Chua, Morris & Mor 2012; Elenkov & Manev 2009; Imai & Gelfand 2010; Ismail et al. 2016; Ott & Michailova 2016; Rockstuhl et al. 2011). However, as previously mentioned, some studies (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Al Mousa

& Jones 2006; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019) have attempted specifically to link CQ and knowledge sharing and report that CQ components foster the knowledge sharing process. However, they do not specifically consider tacit knowledge sharing. Furthermore, the samples were not from an Australian ICT context.

A comprehensive review of the relevant literature reveals that minimal academic research has been specifically directed to the contributions of CQ to tacit knowledge sharing in the ICT sector, particularly in Australian culturally diverse work settings. This represents a major gap in the knowledge management literature and cross-cultural literature and requires further investigation. Further, Vlajcic et al. (2019) call for qualitative studies to explore and understand the role of CQ in tacit knowledge sharing in depth; such research can add value to knowledge management and cross-cultural literatures, thus assisting both academics and industry. Therefore, this study explores the role of CQ in supporting tacit knowledge sharing in culturally diverse ICT organisations and seeks to illuminate CQ's role by presenting findings from qualitative semi-structured interviews of ICT professionals working in culturally diverse Australian work settings. Accordingly, the main research question and the sub-questions of this thesis are as follows.

Main research question:

What role does CQ play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?

Sub-questions:

- *What role does each of the four CQ components (metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ) play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*
- *How are the four CQ components interrelated in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*

2.9 Conclusion

The above literature review demonstrates that tacit knowledge sharing plays a crucial role in ICT organisations. However, challenges to sharing tacit knowledge are posed by culturally diverse ICT organisations. Also discussed was the need to develop an effective framework for culturally diverse ICT organisations to use to facilitate tacit knowledge sharing among ICT professionals. This chapter then described CQ, its components, and its importance in the ICT context and in culturally diverse work settings. This chapter argues that CQ can be utilised as an effective capability to facilitate tacit knowledge sharing in culturally diverse Australian ICT workplaces. The next chapter will present the research methodology used in the study.

Chapter 3 Methodology

3.1 Introduction

The purpose of this study is to examine the role of CQ in facilitating tacit knowledge sharing among Australian ICT professionals working in culturally diverse workplaces. This chapter describes how the researcher designed the methodology to answer the research questions mentioned in Chapter 2. Figure 3.1 provides an overview of the structure of this chapter.

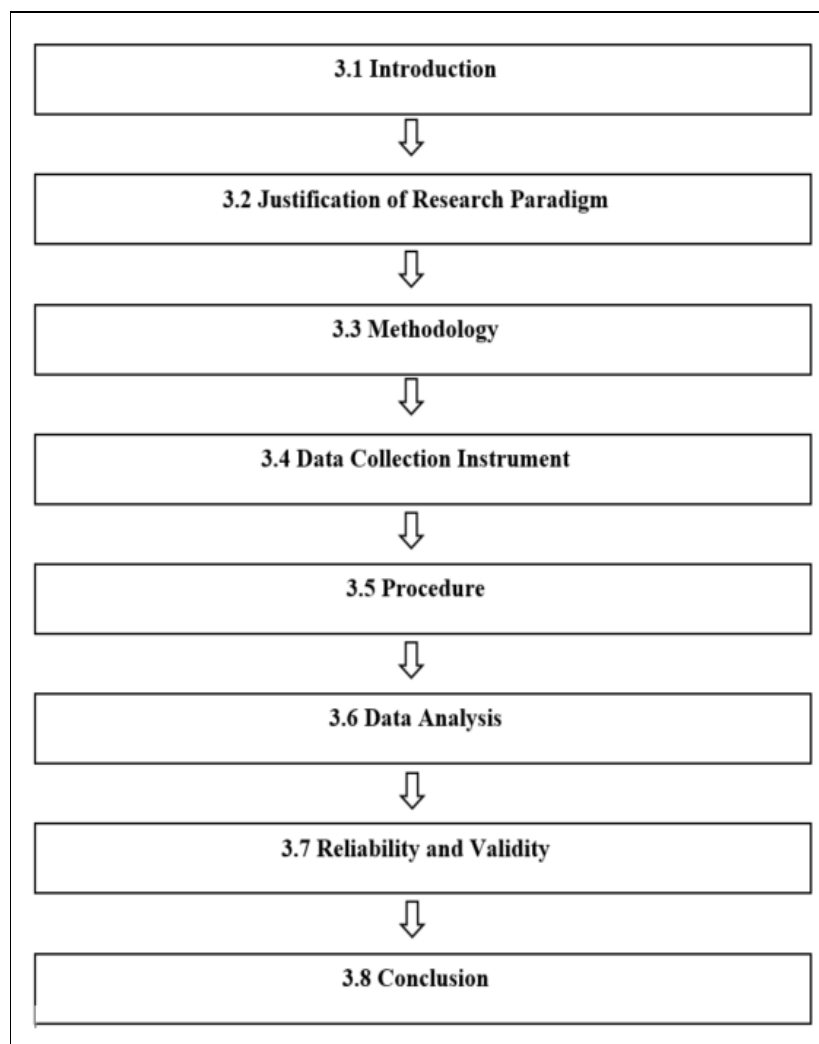


Figure 3.1. Chapter 3 overview.

This chapter commences with a discussion of research paradigms and then outlines the rationale for choosing a qualitative research method and research design for this

investigation. After that, a description of the data collection instrument is offered. The data collection procedure, including the interviews, interview guide, pilot interviews, sampling techniques, recruiting participants, and ethical issues, is presented. The section concludes by detailing computer-aided data analysis, using the software program NVivo 12 Pro, and reliability and validity.

3.2 Justification of Research Paradigm

Guba and Lincoln (1994, p. 105) define a paradigm as “an overall conceptual framework within which a researcher may work, that is, a paradigm can be regarded as the basic belief system or worldview that guides the researcher”. The paradigm reflects how the researcher interprets the world and the relationship between him/her and the knowledge sought (i.e. epistemology) (Alase 2017). Epistemology is the analysis of the character of knowledge and determines the means for acquiring it and its differentiation into truth and falsehood (Klakegg 2016). It raises many questions, such as how reality is known, the relationship between knower and knowledge, how the process of knowing is driven, and the probability of the knowledge and its processes being shared by others (Moyo 2017). Paradigms also define how the nature of reality is perceived (i.e. ontology) and how knowledge is gained (i.e. methodology) (Alase 2017). Ontology concerns what constitutes reality and is about understanding existence (Arghode 2012; Klakegg 2016). It interrogates the researcher’s assumptions about how the world works (Arghode 2012). Epistemology, ontology and methodology are described via three paradigms in social science research: positivism, interpretivism and realism (Savacool, Aksen & Sorrell 2018). A summary of the three paradigms is presented in Table 3.1 and discussed below.

Table 3.1 Summary of the three paradigms

| Paradigm | Ontology | Epistemology | Methodology |
|-----------------------|---|----------------------------|---|
| Positivism | Reality is real | Findings are true | Quantitative methods (e.g., surveys and experiments) |
| Realism | Reality is real with imperfection | Findings are probably true | Qualitative and quantitative (e.g., case study and convergent interviews) |
| Interpretivism | Multiple specific and locally-constructed realities exist | Creative findings emerge | Qualitative (e.g., hermeneutical) |

(Source: Killam 2013; Klakegg 2016)

First, positivism represents objectivity (Savacool, Axsen & Sorrell 2018). Positivists treat social reality as being absolute and independent of the observer's perceptions (Gopinath 2015). In addition, positivists observe reality from an objective stance, with emphasis on measuring social phenomena (Wella & Smyth 2016) and exploring direct cause-and-effect relationships (Purnamasari 2016). The present research is not situated in the positivist paradigm; it is not testing a theory or seeking a cause-and-effect relationship. Rather, it is exploring the role of CQ in facilitating tacit knowledge sharing in the ICT context in culturally diverse work settings.

The realist approach defies human understanding of phenomena, as it believes that reality is independent of the human mind (Mayer 2015). Realists assume that the world exists independently of human perception (Craig et al. 2009). Realism is based on the assumption of a scientific approach to the development of knowledge (Arghode 2012). Realists regard reality as independent of tacit human dimensions (Saunders 2011). However, the present work is intended to understand tacit knowledge sharing experience of ICT professionals in a culturally diverse Australian workplace. It will interpret and analyse participants' interpretations and experiences. Thus, a realist research approach is not appropriate for this research.

Interpretivists, also referred to as constructivists (Creswell 2013), seek to explain subjective meanings of social actions (Kivunja & Kuyini 2017). They are interested in experiences and perceptions and the meanings that people give to the social world, and believe that a subjective approach can enhance understanding of the human experience (Silverman 2016). They recognise that no interpretation of the world can be made independently of human sensations, perceptions, information processing,

feelings and actions (O'Connor 2015). Epistemologically, interpretivists think that understanding of the social world can only be obtained from participants inside that world (Antwi & Hamza 2015). Kivunja and Kuyini (2017) explain that interpretivism assumes that knowledge is socially constructed by the participants in the research and should, therefore, be understood from the participants' viewpoint.

A review of the basics of these three philosophical viewpoints in relation to the purpose of the current study indicated that the current study is situated in the interpretivist paradigm, in that the research focuses on eliciting meaning from the data by *interpreting* ICT professionals' perspectives. Furthermore, the aim of this investigation was not to examine research hypotheses or causal relations, nor to find scientific objectivity or to critique conventional norms and knowledge bases. In addition, tacit knowledge sharing is a complicated phenomenon that cannot be studied objectively (Borges 2013; Goffin & Koners 2011). The researcher's aim was to explore, analyse and interpret ICT professionals' experiences; specifically, the meanings that they give to CQ and tacit knowledge sharing in culturally diverse Australian workplaces. The findings were ultimately derived by *interpreting* ICT professionals' perspectives and experiences. Therefore, the interpretive paradigm seems most appropriate for achieving the goals of the study. A research paradigm aids in selecting the appropriate methodology, methods, literature and research design for the proposed research. In this study, a qualitative methodology was the ideal approach to adopt to address the main research question and sub-questions:

What role does CQ play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?

Sub-questions:

- *What role does each of the four CQ components (metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ) play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*
- *How are the four CQ components interrelated in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*

3.3 Methodology

3.3.1 Justification for qualitative research methods

The selection of the research method is determined by the nature of the research problem and the intended results (Silverman 2016). A study might be qualitative, quantitative or mixed-method (Babbie 2011). A quantitative approach, which is more structured and more statistically based, is the polar opposite of the qualitative approach. Qualitative and quantitative approaches are sometimes employed together to answer a specific research question. This combination comprises mixed-method research. Quantitative approaches measure and analyse relationships between variables using several statistical methods and tools (Punch 2014). However, this measurement process often cannot capture the meanings defined by participants (Bell, Bryman & Harley 2018). Kalu and Bwalya (2017) argue that the coding and standardising used in quantitative methods do not reveal participants' views and interactions, with tacit components often lost in simply summing questionnaire responses. Conversely, a qualitative approach enables the researcher to understand the research issues and to answer the research questions based on the information obtained from the experiences and perspectives of the participants in their social or organisational settings (Lune & Berg 2016).

This research will adopt a qualitative methodology. There are three reasons that fundamentally justify the use of a qualitative methodology for this study. First, as discussed in Section 3.2, this research is situated in the interpretivism paradigm, for which qualitative research is well suited. Qualitative methods are ideal means to explore individuals' interpretations of their experiences in certain situations or conditions, and interpretivism naturally supports such methods (Silverman 2016).

Second, this study is exploratory in nature. Ponelis (2015) argues that qualitative research is best used to explore areas in which little is known. Through exploratory qualitative research, the researcher gains an increased understanding of the research issues and is able to explain these issues based on the information obtained from participants' experiences and perspectives (Ticehurst & Veal 2000). Although some studies (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Al Mousa & Jones 2006; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019) have explored the relationship between CQ and knowledge sharing, little prior research has

examined the role of CQ in facilitating tacit knowledge sharing, particularly among ICT professionals in culturally diverse Australian workplaces. For example, CQ's role in tacit knowledge sharing, tacit knowledge sharing willingness, and tacit knowledge sharing barriers in the Australian ICT context remains poorly understood. This investigation explores ICT professionals' *subjective* opinions, experiences and perspectives concerning the potential influence of CQ in facilitating tacit knowledge sharing in culturally diverse Australian contexts. Thus, a qualitative approach is especially suitable for this study.

Third, as already discussed in Sections 2.2 and 2.3, the Australian ICT sector faces unique challenges, and this investigation aims to offer an in-depth understanding of the role of CQ in tacit knowledge sharing in that specific sector. Enhanced understanding of ICT professionals' tacit knowledge sharing can best be obtained through a qualitative approach, as such an approach facilitates acquiring increased in-depth understanding and meaning based on individuals' experiences, perspectives, beliefs and feelings (Silverman 2016; Yilmaz 2013). Also, *intangible* elements, such as ideas, experiences and perspectives, can be best understood and described using qualitative rather than quantitative research. Vlajcic et al. (2019) call for qualitative studies to provide in-depth understanding of the role of CQ in tacit knowledge sharing. This study aims to extend the knowledge in this area, and a qualitative approach is well suited to this goal.

3.3.2. The rationale for use of the generic qualitative approach

As discussed in Section 3.3.1, the qualitative approach is particularly appropriate for achieving the purpose of the study. There are various qualitative designs available, including phenomenological, ethnographic, grounded theory, narrative, case study and generic (Creswell 2013; Percy, Kostere & Kostere 2015). However, choosing a suitable method or methods is not always a simple task, and the decision must be based on the specific nature and context of each study. Among various qualitative designs available, phenomenology, case study, ethnography and grounded theory are often viewed as foundational and frequently used (Creswell 2013; Smith, Becker & Cheater 2011). Despite this, the current study adopts a generic qualitative research design given its specific nature and context.

Percy, Kostere and Kostere (2015, p. 78) define generic qualitative research design as an approach that can be used to investigate “people’s reports of their subjective opinions, attitudes, beliefs, or reflections on their experiences, of things in the outer world”. There are several reasons for selecting the generic qualitative design for this research.

The first benefit of a generic qualitative design is that it offers methodological flexibility (Kahlke 2014; Kahlke 2018; Yilmaz 2013). According to Lim (2011), flexible methodological approaches are a prerequisite for those conducting research on a topic or in an area where few theories or empirical studies are available. This approach is more appropriate for this study as there is limited empirical work on understanding the role of CQ in facilitating tacit knowledge sharing among ICT professionals in culturally diverse Australian workplaces.

Second, based on the findings from studies explored in Chapter 2, the researcher believes that a relationship between CQ and tacit knowledge sharing exists. This presupposition supports selecting a generic qualitative inquiry for this study. Specifically, it recognises that some objective reality and knowledge may exist outside of the research, and some knowledge and reality may only be subjectively determined from the interaction between the researcher and participant (Kahlke 2018). According to Kennedy (2016), a generic qualitative approach is appropriate if the researcher knows the theoretical underpinning, brings his or her reality to the study and is open to newly constructed knowledge when interacting with study participants and generating data. Thus, a generic qualitative design is an appropriate choice for the current study. Table 3.2 outlines the rationale for selecting a generic qualitative approach for the current study.

Third, the generic approach makes the research aim a priority over a philosophical stance (Kennedy 2016), and a desire to represent participants’ views accurately take precedence in the current work. This focus is supported by Kahlke (2014), who argues that generic approaches can be used where researchers seek to pursue questions and explore approaches. As shown in Table 3.2, a generic qualitative approach seems particularly suitable as this study aims to explore the role of CQ in facilitating tacit knowledge sharing among ICT professionals in culturally diverse Australian workplaces by understanding the perspectives of ICT professionals.

Table 3.2. Rationale for use of the generic qualitative approach

| Qualitative Design | Purpose | Suitable for this study? | Reason |
|---------------------------|--|---------------------------------|---|
| Ethnography | To investigate a culture through in-depth study of the members from the culture. | No | Though this is related culturally diverse workplaces, it is not an investigation of a culture, so ethnography is not suitable. |
| Phenomenology | To understand the essence of a 'lived experience' of a phenomenon for several individuals. | No | Phenomenological design chiefly employs unstructured interviews to allow study participants to describe the meaning of their experiences with a given phenomenon. This kind of interview is usually driven by the interviewee. However, this study uses a semi-structured interview, which is guided by interview questions (the reasons are explained in <i>Section 3.4</i>). Also, this study is not an investigation of the 'lived experience'. |
| Grounded theory | To develop or discover a theory or theories that are grounded in the data. | No | Grounded theory design is particularly useful when no theory exists to explain an action or process in a topic area. However, the link between CQ and knowledge sharing, though not in-depth investigation, has been established by several authors. This study focuses on exploring the role of CQ in facilitating tacit knowledge sharing in detail. |
| Case study | To investigate in-depth a case or cases that are studied over time using multiple sources of information. | No | This research is not an in-depth study of a case or cases. Rather, it aims to investigate individuals' perspectives of the role of CQ in facilitating tacit knowledge sharing within the Australian ICT context. |
| Generic | To discover and understand a phenomenon, a process, or the perspectives and world views of the people involved. Presentation of the facts and a comprehensive summary of an event of those events are provided in everyday language. | Yes | This study aims to explore the role of CQ in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse Australian workplace by understanding the perspectives of ICT professionals. |

(Sources: Kahlke 2014; Silverman 2016)

3.4 Data Collection Instrument

Data collection is an important part of research and is dependent on the selected research methods (Creswell 2013). For this study, in-depth interviews are utilised to collect data because the purpose is to understand the research topic from participants' perspectives and to provide meaningful information to address the research question (Saunders 2011). In an exploratory study using an interpretive paradigm, such as the present study, in-depth interviews are often considered appropriate for gathering data as they help gain an understanding of the area of interest and develop appropriate theories (Guest, Namey & Mitchell 2013). The in-depth interviews will also help to understand why and how the ICT professionals hold the perceptions they do.

In addition, in-depth interviews can create greater rapport between researcher and participants due to the time spent together (Guest, Namey & Mitchell 2013), which also allows the researcher to gather the rich data needed to understand ICT professionals' perceptions. The time spent together in in-depth interviews helps participants express and explain their feelings, experiences and perceptions (Yin 2013). This is important for this study as the researcher aims to ascertain ICT professionals' experience and perceptions.

Furthermore, in-depth interviews are the most commonly used instrument in qualitative research and can vary in methodological features, such as the questioning style, length, and participants (Kallio et al. 2016). Three types of in-depth interviews are commonly used in research: structured, semi-structured and unstructured (Rubin & Rubin 2011) as shown in Table 3.3.

As can be seen from the analysis in Table 3.3, semi-structured interviews are the most suitable instrument for the present study. They help the interviewer obtain in-depth information about an area of inquiry through guided discussion (Doody & Noonan 2013; Silverman 2016) as well as providing the researcher the flexibility needed to follow up on an idea for greater detail (Rubin & Rubin 2011). Additionally, this investigation is exploratory in nature, and semi-structured interviews allow the researcher to ask participants for a detailed explanation of their experiences, thus affording the opportunity to follow up on themes that are not expected (Evans & Lewis 2018; Saunders et al. 2009). Researching tacit knowledge sharing, which is a highly complex concept, requires an in-depth understanding of the phenomenon to

yield a variety of perspectives and experiences (Panahi, Watson & Partridge 2013). Such an understanding can be achieved by conducting semi-structured interviews.

There are several formats for executing semi-structured interviews: interaction via phone or internet and face-to-face. This study conducted interviews face-to-face, via the telephone and via video chat (Skype or Zoom or Google Meet), according to which option was convenient and appropriate for a particular participant. Scholars have reported that there is no significant difference across these interview methods (Szolnoki & Hoffmann 2013) as long as observation of body language is not crucial (Shapka et al. 2016). For this study, ICT professionals' experiences and perspectives were more important than observing their body language; as such, the use of face-to-face interviews only was unnecessary and any of these interview formats should provide the same outcome.

Each participant was given the opportunity to choose an interview method before the interview was organised. As it turned out, telephone and video chat formats were utilised more frequently as they provided flexibility for the participants and interviewer to conduct an interview after work hours and also offered potential comfort for interviewees (i.e., they were in their own setting) (Adhabi & Anozie 2017). The researcher used an interview guide in the semi-structured interviews to allow participants to talk expansively about the issues (Kallio et al. 2016). More explanation regarding data collection procedure for this study is provided in Section 3.5.1.

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Table 3.3. Rationale for use of the semi-structured interviews

| Interview type | Explanation | Suitable for this study? | Reason |
|--|--|---------------------------------|---|
| Structured | Uses pre-established questions that are created in advance and asked in a pre-defined order. | No | Has little flexibility, as the questions are in a predetermined order. Structured interviews tend to be used for quantitative research. The current research is qualitative and requires in-depth understanding of ICT professionals' tacit knowledge sharing in a culturally diverse Australian work setting. |
| Unstructured (also referred to as open-ended, narrative or in-depth) | Consists of open-ended questions that are not prepared in advance. Allows participants to take the lead and share their stories at their own pace, in their own way, within time frames. | No | Methodological techniques used are standard irrespective of context, leaving less space for adaptability to ICT settings. Furthermore, ICT professionals are busy with time pressure, whereas unstructured interview required greater commitment in terms of time. Also more time-consuming to analyse. Possibility of obtaining more incomplete responses, as there is an absence of an outline (Adhabi & Anozie 2017). |
| Semi-structured | Is a type of interview in which the interviewer asks a few predetermined, as well as unplanned, questions? | Yes | Can use the same questions, and the questions do not need to be asked in a set order (as in a structured interview). Allows the researcher to follow the themes that evolve but are not predicted prior to the interview. Thus, assists in obtaining in-depth information about an area of interest that requires investigation (such as ICT professionals' tacit knowledge sharing in a culturally diverse Australian work setting). |

(Sources: Kallio et al. 2016; Rubin & Rubin 2011)

3.5 Procedure

3.5.1 Interview guide and pilot interview

An interview guide supports researchers in outlining a topic and questions but provides the flexibility necessary in an interview process (Castillo-Montoya 2016). Use of a guide is an integral part of conducting semi-structured interviews. This interview guide ensures that all relevant questions are included. All the questions from the interview guide were based on a broad review of the relevant topic from the contemporary literature. Thus, the interview guide aids in fulfilling the objectives of

the study and helps to generate pertinent answers (Kallio et al. 2016). This also saved time, as focused questions are developed. In this study, the interview questions were divided into introductory questions, questions regarding tacit knowledge sharing, and questions regarding CQ and tacit knowledge sharing. The interview questions are shown in Appendix C.

First, introductory questions ensured that participants met the criteria for participating in the study. Second, questions pertaining to tacit knowledge that ICT professionals usually share aimed to gain a deep understanding of tacit knowledge sharing in the ICT context. A series of probing questions were also asked to encourage participants to articulate their experiences of when and how they shared tacit knowledge. These questions aided the researcher in exploring the approaches ICT professionals used to share tacit knowledge, the challenges they faced and their experience of sharing tacit knowledge in culturally diverse Australian workplaces. Third, CQ questions were asked to further the understanding of the potential contributions of CQ components in facilitating tacit knowledge sharing in Australian ICT organisations. The interviews were concluded by asking participants to express anything else of importance for facilitating tacit knowledge sharing in culturally diverse workplaces. Participants were also asked whether they could recommend any other informant for the study, commonly referred to as the ‘snowball’ sampling technique (Etikan & Bala 2017). In addition to the above, further probing questions were asked to encourage participants to articulate their experiences of sharing tacit knowledge in culturally diverse Australian ICT workplaces.

Pilot testing of the data collection instrument is an important process, as semi-structured interviews constitute the only primary data in this research, so ensuring the accuracy and validity of the interview guide is essential (Kallio et al. 2016). In this study, the researcher undertook pilot testing to avoid errors, prevent potential risks and improve validity (Anney 2015). Pilot studies also assisted in fine-tuning the interview questions to obtain the required understanding of the topic (Kallio et al. 2016).

Pilot interviews were conducted with five ICT professionals in March 2019. The same sampling and recruiting procedure was employed for the pilot interviews. Following the pilots, some interview questions were modified as the test revealed some repetitive questions in the initial interview guide. After updating the interview

questions, a rigorous search for potential participants for interviews was conducted. The next section discusses the sampling and recruitment strategy in more detail.

3.5.2 Participants: population, sampling and recruiting

In Australia, overseas ICT organisations – including Accenture, HP, IBM, Infosys, Wipro, Oracle, Salesforce, Tata Consultancy Services (TCS), Mahindra Satyam, and HCL, which have established partnerships with many of the top 100 companies on the Australian Securities Exchange (e.g., National Australia Bank (NAB), Sydney Water, Rio Tinto, Jetstar, AGL) – have made important investments in infrastructure, human resources, new services and the ICT industry. The primary population of the present study is ICT professionals working in culturally diverse ICT organisations located in Australia. As discussed in Chapter 2, the likelihood of ICT professionals working in culturally diverse settings is high in Australia. Collecting information from ICT professionals regarding tacit knowledge sharing in culturally diverse work settings is critical to understanding the role of CQ in tacit knowledge sharing among ICT professionals.

Qualitative researchers use non-probability sampling techniques to select research participants from the population (Boddy 2016). Etikan and Bala (2017) identify four non-probability sampling techniques: convenience, purposive, quota and snowball sampling. For this study, the researcher purposively selected ICT professionals based on considerations of availability and suitability to contribute insights on the issues being studied (Malterud, Siersma & Guassora 2016). Suitability was assessed according to the following criteria: participants must be working in a culturally diverse Australian ICT organisation with at least five years' experience in that organisation. This allowed the participants sufficient time to experience what it is like being a member of a culturally diverse work setting in Australia. Also, the ICT organisations must have been established for ten years with at least five years of maintaining diversity and ethics practices.

The researcher identified the first group of ICT professionals, particularly during the pilot interviews, working in the ICT organisations located in Australia through LinkedIn and contacted them through email or phone to ascertain their willingness to participate in the study. At the end of each interview, the researcher used snowball sampling, with interviewees referring other eligible participants to the researcher

(Boddy 2016). ICT professionals know other ICT professionals in the same situation as themselves and could inform those individuals about the benefits of the study and assure them of confidentiality. The snowball sampling method assisted the researcher in obtaining additional interviewees (Etikan & Bala 2017).

There are no rules about the actual sample size required for qualitative research projects. That is, the number of participants needed to assure validity and generalisability of findings is uncertain (Gentles et al. 2015). Taherdoost (2016) states that qualitative researchers might choose sample sizes based on the research design, the scope of the study, the nature of the topic, and the quality and quantity of data obtained per participant. A sample size is appropriate and adequate for a qualitative study as long as it produces data that adequately answer the research question (Boddy 2016).

Some researchers suggest that around 30 interviews is a reasonable sample size for qualitative interviews (Teddlie & Tashakkori 2009). However, data saturation can often be a more important consideration than the actual number of participants (Boddy 2016). In other words, sampling must be continued until saturation is achieved and no new data emerge (Sim et al. 2018). In this study, saturation was reached after 27 interviews.

During the initial contact, the background of the study, purpose of the research project, and data collection methods were explained. Then the researcher followed up with a phone call to allow potential interviewees to ask any questions they might have. After they agreed to participate, the researcher scheduled an interview time and sent a confirmation email. A consent form informing participants of the purpose of interview and how the data would be utilised was attached to the email for participants to sign.

In total, 36 ICT professionals were interviewed for the purpose of the study. Participants were from Australia, India, Malaysia, Singapore, Sri Lanka, China, the Middle East, Pakistan, Bangladesh, Nepal and the Philippines (Figure 3.2). Their names, contact details and company names are omitted to protect the confidentiality of participants. Each participant was assigned a code, such as ICTP 01, ICTP 02 through to ICTP 36, as illustrated in Table 3.4. The ICT professionals interviewed were working in various Australia-based organisations that have culturally diverse

work settings (e.g., NBN, Telstra, Accenture, Infosys, Salesforce and Oracle). As shown in Figure 3.3, the highest percentage of participants were from India (33%), followed by Australia (19%) and Sri Lanka (14%). The large proportion of Indian participants reflect the fact that India accounts for more than 50% of the global ICT services market with many ICT professionals employed in the offshoring ICT sector (Kong, Chadee & Raman 2013). Another reason might be that the first participant interviewed for the study was Indian, so subsequent recruitment of participants might have been influenced by his and his colleagues' recommendations. Also, the majority of ICT professionals working in Australia are Indians, as discussed in Chapter 2.

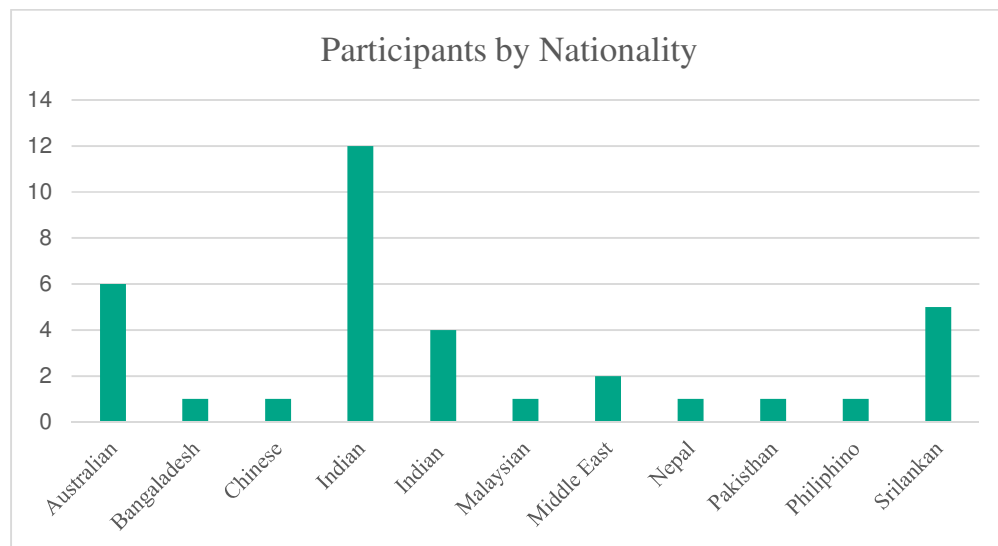


Figure 3.2. Participants' cultural backgrounds (Source: Developed for the study).

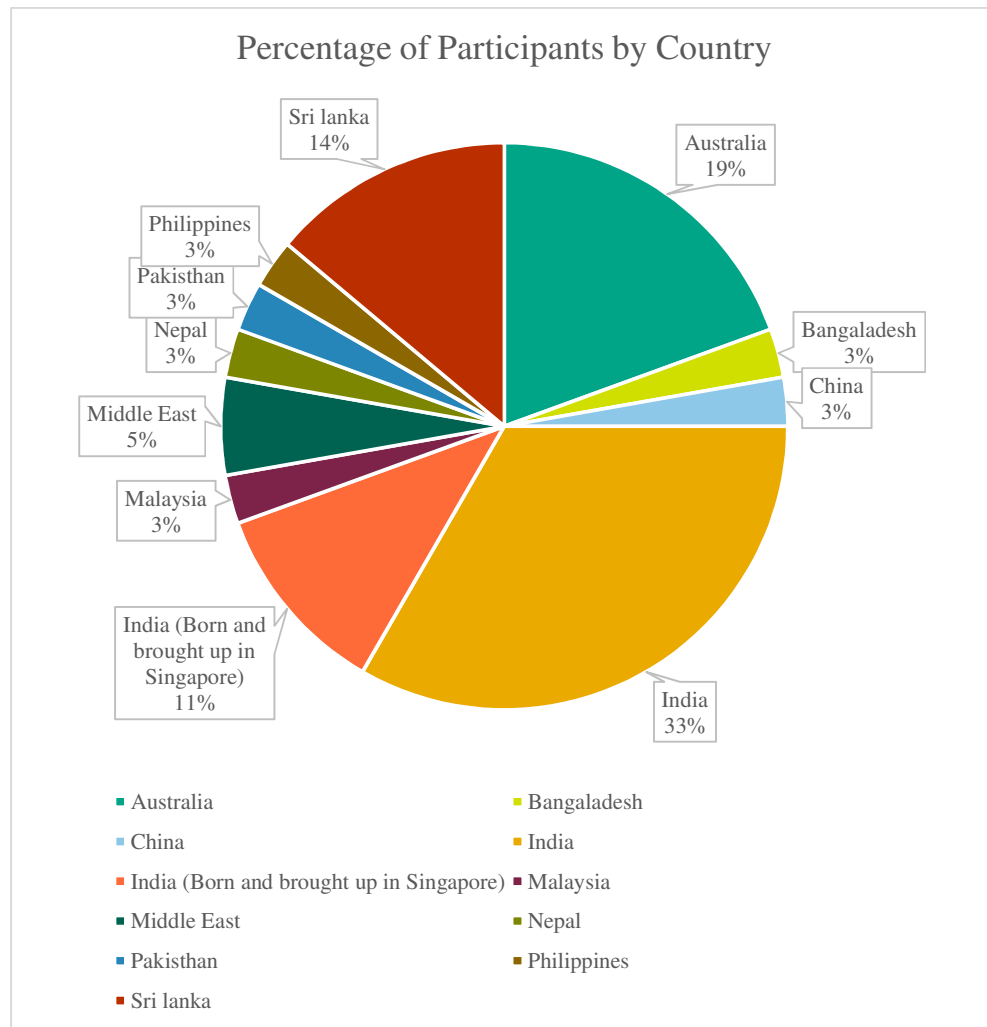


Figure 3.3. Percentage of participants by country (Source: Developed for the study).

The 36 interviewees worked with ICT professionals from different countries and geographical areas: Australia, India, Sri Lanka, China, the Middle East, Pakistan, Canada, Malaysia, Vietnam, Poland, Portugal, Bangladesh, Nepal, Russia, Ukraine, the USA, the UK and the Philippines. Participants’ average work experience in the ICT field was 15 years (with a range between five and 26 years). Detailed information about interviewees is reported in the participant inventory in Table 3.4.

Table 3.4 Participant inventory

| Participant code/Job title | Years of experience | Nationality | Gender | Age Group | Daily interaction with ICT professionals from: |
|---------------------------------------|----------------------------|--------------------|---------------|------------------|---|
| ICTP 01 – Associate Software Manager | 12 | India | Female | 30–39 | Philippines, India, China, Singapore, Vietnam, USA, UK, Australia |
| ICTP 02 – Consultant | 13 | India | Male | 30–39 | UK, Australia, Asia |
| ICTP 03 – Senior Consultant | 15 | India | Male | 40–49 | Malaysians, Australia, Asia |
| ICTP 04 – Senior Consultant | 15 | India | Male | 40–49 | Europe, US, Australia |
| ICTP 05 – Developer Consultant | 16 | India | Male | 40–49 | Sri Lanka, Malaysia, Australia |
| ICTP 06 – Consultant | 21 | Philippines | Male | 40–49 | Philippines, India, Thailand, Australia |
| ICTP 07 – Technology Delivery Manager | 21 | India | Male | 40–49 | South Asia, Middle East, Europe, Australia |
| ICTP 08 – Consultant | 12 | Australia | Male | 40–49 | Australia, Asian |
| ICTP 09 – General Manager | 16 | India | Male | 30–39 | Japan, Africa, America, Australia, Europe, Middle East |
| ICTP 10 – Solution Delivery Manager | 21 | Sri Lanka | Male | 40–49 | India, Australia |
| ICTP 11 – Senior Consultant | 26 | Sri Lanka | Male | 50–59 | India, Australia |
| ICTP 12 – Consultant | 5 | Sri Lanka | Female | 30–39 | India, Australia, Europe, China, Philippines |
| ICTP 13 – Senior Consultant | 12 | Malaysia | Female | 30–39 | India, Australia, Malaysia |
| ICTP 14 – Senior Consultant | 16 | Australia | Male | 40–49 | India, Australia |
| ICTP 15 – Consultant | 9 | India | Male | 30–39 | China, India, Australia |
| ICTP 16 – Consultant | 14 | India | Male | 40–49 | India, Australia, Malaysia |
| ICTP 17 – Consultant | 15 | India | Male | 40–49 | Asia and Australia |
| ICTP 18 – Senior Consultant | 20 | Australia | Male | 40–49 | American, Poland, India, Asia, Ukraine |

| Participant code/Job title | Years of experience | Nationality | Gender | Age Group | Daily interaction with ICT professionals from: |
|---|----------------------------|--------------------|---------------|------------------|---|
| ICTP 19 – Consultant | 10 | Middle East | Female | 30–39 | Australia, Russia |
| ICTP 20 – Consultant | 8 | Australia | Male | 40–49 | India, Australia, Malaysian |
| ICTP 21 – Consultant | 8 | Bangladesh | Female | 30–39 | Europe, Australia, India |
| ICTP 22 – Consultant | 15 | Nepal | Male | 30–39 | Australia, Scotland, India |
| ICTP 23 – Software Manager | 13 | Pakistan | Male | 30–39 | India, Canada, Australia, UK, US, China, Vietnam |
| ICTP 24 – Senior Consultant | 12 | Sri Lanka | Male | 30–39 | Portugal, UK, Australia and Philippines |
| ICTP 25 – Technology Delivery Lead | 20 | Australia | Male | 50–59 | Australia, India, Russia |
| ICTP 26 – Testing Consultant | 14 | Sri Lanka | Female | 40–49 | Bangladesh, India, China, Australia, America, Japan |
| ICTP 27 – Senior Consultant | 20 | India | Male | 40–49 | India, Canada, Australia, UK, US, China, Vietnam |
| ICTP 28 – Consultant | 12 | India | Female | 30–39 | Multicultural team |
| ICTP 29 – Consultant | 13 | India | Female | 40–49 | India, Australia |
| ICTP 30 – Consultant | 7 | India | Female | 20–29 | India, Australia, China |
| ICTP 31 – Consultant | 6 | India | Female | 20–29 | Australia, America, India |
| ICTP 32 – Consultant | 10 | China | Male | 30–39 | India, Australia, China |
| ICTP 33 – Consultant | 16 | India | Female | 40–49 | Multicultural team |
| ICTP 34 – Technology Manager | 18 | Australia | Male | 40–49 | Multicultural team |
| ICTP 35 – Technology Delivery Lead Senior Manager | 13 | Middle East | Male | 30–39 | Multicultural team |
| ICTP 36 – Senior Technology Manager | 19 | Australia | Male | 40–49 | India, Singapore, Canada, Australia, UK, US, China, Vietnam |

As depicted in Figure 3.4, 69 per cent of the participants were male and 31 per cent female. The low percentage of female participants may reflect the fact that females form only 20 per cent of Australian ICT industry employees (Al-Saggaf & Thompson 2018). As portrayed in Figure 3.5, 50 per cent of participants were between 40 and 50 years old, 39 per cent between 30 and 40 years old, five per cent between 20 and 30 old, and six per cent between 50 and 60 years old.

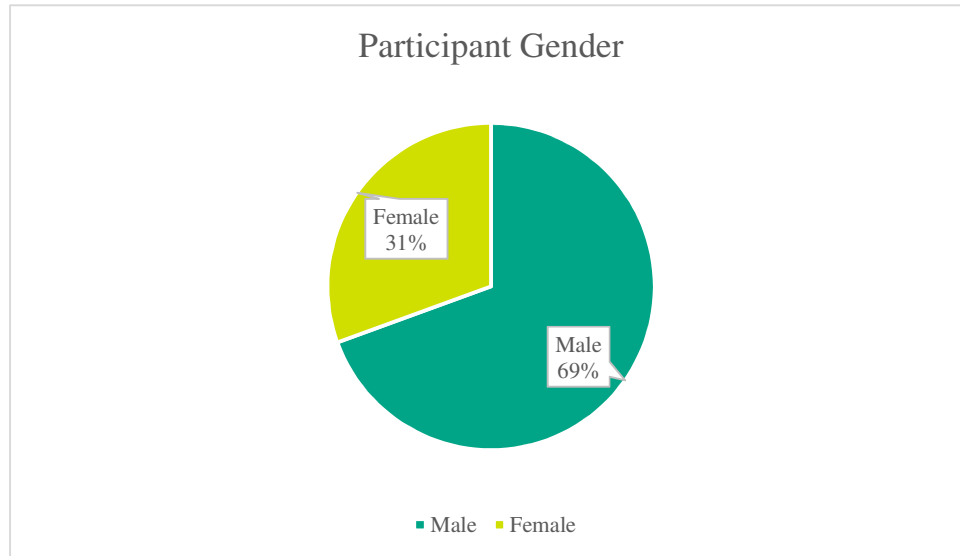


Figure 3.4. Participants' gender (Source: Developed for the study).

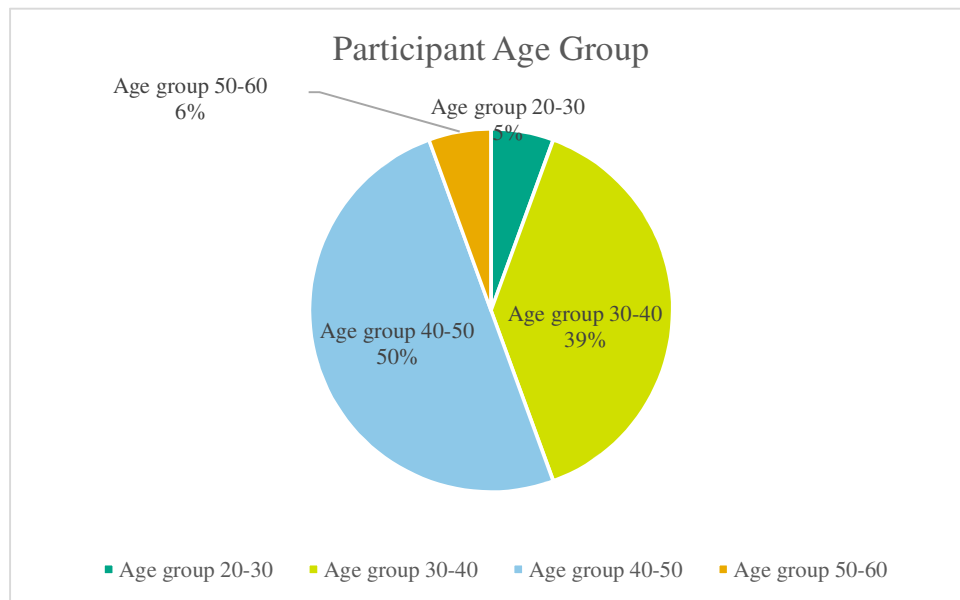


Figure 3.5. Participants' age classification (Source: Developed for the study).

Based on the scope and purpose of this study, interviewed ICT professionals were working in a culturally diverse Australian workplace alongside, and directly interacted with, one or more persons from different cultural backgrounds other for their work, either face-to-face or virtually. Because the interviewed ICT professionals were highly experienced in their ICT field and worked in culturally diverse work settings, their perceptions and experiences aided in exploring and understanding the role of CQ in facilitating tacit knowledge sharing.

3.5.3 Ethical considerations

As this research involved human participants, ethical clearance before data collection was important. Khan (2014) states that ethical considerations include informed consent and the rights of interviewees to confidentiality, anonymity and privacy. Throughout this research project, protocols were established for both the collection and the dissemination of data. This study complied with the USQ requirement to protect participant confidentiality. Three ethical practices were adopted for this research. First, the methodology used was systematic and the objective was stated and approved by USQ. Second, all recipients received a consent form and an information sheet regarding their rights when participating in the interviews. Finally, the research findings consisted of a complete report in an unbiased manner, including errors and results not supporting the research propositions, all within a documented research design and providing an overview of the investigation to the USQ Human Research Ethics Committee.

The researcher provided a consent form along with the background of the study, purpose of the research project, participant information sheet and data collection methods to the participants as shown in Appendix D and E. It was explicitly mentioned in the participant information sheet that participants could withdraw from participation at any time during the project without comment or penalty. All participants signed the consent form and returned it to the researcher. All aspects of the study, including collected data and results, were treated as strictly confidential, and only the researcher and his supervisors had access to the interview data. All data collected for this study were de-identified in the public domain using a coding system; therefore, individual participants were not identifiable. All taped interviews remained entirely confidential.

3.5.4 Interview process

The researcher conducted a 30- to 60-minute interview with each ICT professional to cover all the interview questions, undertook analysis after every interview and compared findings with previous interviews. This analysis of interview data ensures the justification of theoretical saturation which determined the number of participants (Hennink, Kaiser & Marconi 2017; Marshall et al. 2013; Rowlands, Waddell & McKenna 2016). The researcher conducted 36 interviews, as Teddlie and Tashakkori (2009) mention that 30–35 is a reasonable sample size for qualitative research. However, the participant numbers were based on data saturation (Fusch & Ness 2015; Saunders & Townsend 2016). The interviews took place on the participants' organisational premises (either their offices or meeting rooms) or through telephone or video chat (Skype or Zoom or Google meet). A digital recorder was used to record all interviews to ensure the accuracy of data collection and to facilitate transcription (Markle, West & Rich 2011). The audio recording allowed thorough examination of participants' comments and permitted repeated review of their answers (Male 2016). It also helped to correct the natural limitations of the researcher's memory. However, a voice recorder used only with the consent of the interviewees. The audio files and data were kept in the researcher's password-protected computer. The next section details the method applied for data analysis.

3.6 Data Analysis

Data analysis has the function of interpreting the collected data to produce conclusions and ensure that alternative conclusions are considered (Johnston 2017; Silverman 2016). The objective of data analysis in this research was to make sense of the data; this involved segmenting and combining the data (Creswell 2013). Denzin and Lincoln (2011) state that software programs are useful tools for qualitative data analysis. There are different software programs available, such as ATLAS.ti and NVivo. The researcher used NVivo 12 Pro for data analysis and the associated development of categories to elucidate the data. NVivo software was used to record, store, index, sort, retrieve, and cross-index without losing the data richness (Nowell et al. 2017). NVivo features, such as richness of information and closeness to data, make this tool especially appropriate for use in this study.

There are a variety of data analysis approaches for qualitative data based on the research problem and its purpose; these include template analysis (Evans & Lewis 2018), thematic analysis (Sutton & David 2011), critical discourse analysis (Ngulube 2015) and narrative analysis (Bryman 2012). All share common features: summarising, categorising and structuring of meanings in practice (Saunders 2011). Creswell (2009) argues that the researcher should employ a combination of analysis approaches as this can enhance the quality of interpretations and findings.

Thematic analysis is a method commonly used in qualitative data analysis (Herzog, Handke & Hitters 2019). It primarily seeks to identify, categorise and report patterns of experiences and important concepts and meanings within a data set (Evans & Lewis 2018). This aim of this study was not to quantify concepts but to explore and identify emerging concepts regarding the main research question. Therefore, thematic analysis was used to provide the interpretive perspective necessary for analysing the collected qualitative data.

Thematic analysis was conducted in four stages: preparation, coding, theme identification and reporting (Bryman 2012; Creswell 2009, Zhang & Wildemuth 2009), as shown in Figure 3.6.

The following steps were followed during thematic analysis (TA) (Creswell 2009) in this study. The initial step was preparation of the data for analysis. The recorded interviews were transcribed by the researcher; although manual typing can be time-consuming process, it helped the researcher obtain rich information from the data (Male 2016). This process also helped the researcher to acquire early familiarisation with the data. Next, the transcribed interviews were sent to participants for their review and feedback. Participants were also given additional opportunity to provide any new comments if they wanted to do so. The edited and verified version of transcripts were stored in a password-protected computer system. NVivo 12 Pro was utilised to facilitate this process, as discussed above. The transcripts were read more than three times to obtain a detailed understanding of the data.

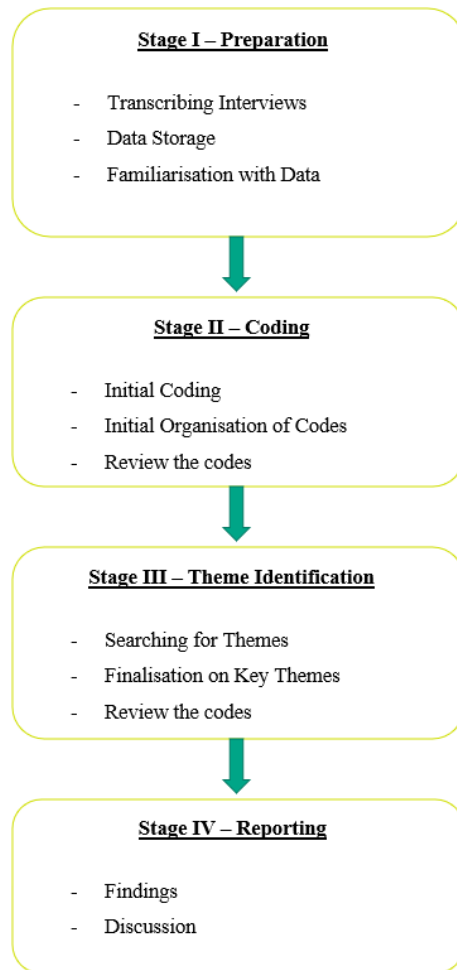


Figure 3.6. Thematic analysis steps (Sources: Creswell 2009; Zhang & Wildemuth 2009; Bryman 2012).

The second step in the thematic analysis was coding the data. Reading the data line-by-line, the researcher familiarised himself with the data, with participants' expressions of an idea regarding the research question considered as the unit of data analysis (Silverman 2016). The researcher used NVivo 12 Pro to create codes for units of meaning and according to the exact words of participants related to CQ and tacit knowledge sharing. A combination of emergent and predetermined codes was utilised (Creswell 2013). New codes were created by analysing participants' exact words and the underlying meaning of the data concerning the research question. When creating new codes, the constant comparative method was employed (Evans & Lewis 2018). A line-by-line in-depth review was performed multiple times to identify and establish broad data categories by themes, concepts or similar features related to the research question. The processes of reading and coding were continued

until no new codes were found in the transcripts. The codes that had similar structures were grouped into one category. Those codes and categories were reviewed to determine whether the codes were located appropriately. Irrelevant codes were deleted, similar codes were merged, and some were modified.

The third step in the thematic analysis involved identifying the themes of the study, which included searching for themes. Themes are patterns in the data that explain and organise “the possible observations” and “aspects of the phenomenon” (Boyatzis 1998, p.161). The process of identifying themes in the study started with transcribing interviews, during which the emerging themes were documented in the memo for each interview. The codes that emerged in step 2 were reviewed multiple times against the research questions to determine the main themes of the study. CQ and tacit knowledge sharing theories were also consulted when creating themes. After initial identification of themes, the themes were compared to each other using the constant comparative technique to discover similarities, differences and relationships between them. The themes were reviewed individually and weighted based on their importance to the research question. Information about codes and themes is provided in the snapshot of codes and themes in Appendix F.

The fourth step in the thematic analysis involved explanation of the findings and discussions, an important part of qualitative analysis. This stage introduced the identified themes, explored the possible relationship among the identified themes, and presented a conceptual map of the themes. The write-up of findings began in the early stages of data analysis using NVivo 12 Pro software. As recommended by Vaismoradi et al. (2016), each theme was described and compared, and then potential relationship among the themes were proposed. Additionally, the content of each theme was defined and supported by sample quotations from the data. Furthermore, with the support of the literature on CQ and tacit knowledge sharing, further analysis was performed to discern the relationship among the themes presented in a conceptual map of themes identified in the study. Finally, the data analysis was concluded by discussing the results concerning research questions, presenting questions for future research, acknowledging the limitations of the study and offering practical recommendations.

3.7 Reliability and Validity

Reliability and validity play an important role in the success of qualitative research (Spiers et al. 2018). Reliability is concerned with the consistency of the measures devised for concepts in business research or the repeatability of research results (Creswell 2013). Validity is concerned with the integrity of the conclusions that are generated from the research (Bell, Bryman & Harley 2018). There are various criteria and verification strategies for evaluating a qualitative inquiry and ensuring the accuracy of interpretation and findings (Cypress 2017; Morse 2015; Riviera 2010). Some assessment methods used for qualitative inquiry are sampling appropriateness, sampling adequacy, transparency of data collection and analysis, credibility, dependability, authenticity and coherence in the presentation of findings and interpretations, member checks, generalisability of findings, permeability of the researcher's intentions, and concurrent data collection and analysis (Creswell 2013; Silverman 2016).

The researcher used the member validation technique for reliability (Thomas 2017). In this technique, the researcher provided each participant with a transcription of the interview material to ensure that the views collected were accurate. Participants were also allowed to give feedback on the transcription. According to Simpson and Quigley (2016), this member-checking technique increases the reliability of the data by allowing participants to note potential errors arising in the transcription process without changing the data. In addition to member validation, a detailed description of the data collection procedure was presented in this research, thus allowing for future replication of the study to verify the findings, which can increase the validity (Birt et al. 2016).

The researcher presented the study findings using participants' own words by quoting a range of examples of their opinions and experiences (MacPhail et al. 2016). Doing so increased the authenticity of the discussion and findings, as the arguments in the discussion were supported by real data (Elliott 2018; Pandey & Patnaik 2014). Furthermore, the researcher utilised two PhD holders with over a decade of experience in qualitative research analysis to separately code the sample interviews (Bazeley & Jackson 2013). These individuals held no conflict of interest with the researcher or subject. The codes assigned were compared and discussed, which

helped increase the consistency and validity of coding. This process is referred to as intercoder reliability, in which the coders agree on the coding scheme and the themes (MacPhail et al. 2016).

3.8 Conclusion

This chapter presented a comprehensive description of the qualitative methodology used in this research, together with the rationale for using this methodology. The researcher explained the research approach, the methods of data collection, the process of data analysis, and reliability and validity. The chapter also justified the use of qualitative research methods and the selection of the interpretive paradigm. The analysis of the interview data will be presented in the next chapter.

Chapter 4 Analysis and Findings

4.1 Introduction

The previous chapter presented the study's methodology, qualitative methods and data analytic approach (thematic analysis). This chapter presents and discusses the findings from semi-structured interviews with 36 ICT professionals in 14 ICT organisations in Australia. The main findings of the study – identified in the analysis depicting the role of individual CQ components in tacit knowledge sharing among ICT professionals working in a culturally diverse Australian workplace – and a detailed description of each theme with attendant illustrative quotations from participants are provided.

As enunciated in Chapter 1, this study addresses the following research question: *'What role do CQ and its components play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting in Australia?'* Figure 4.1 provides the overview of this chapter.

The results are described and discussed in five sections. First, an overview and summary of findings are discussed in Section 4.2. The subsequent sections detail the findings of each of the CQ components in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse Australian work setting. Section 4.3 details the findings in relation to metacognitive CQ. Section 4.4 focuses on cognitive CQ. Section 4.5 reports the findings related to motivational CQ. Section 4.6 offers the findings related to behavioural CQ. The interrelationship of the CQ components in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse Australian work setting is then presented in Section 4.7. Finally, an overarching conceptual framework is proposed in Section 4.8; it posits that CQ is a critical facilitator of tacit knowledge sharing among ICT professionals in a culturally diverse work setting and explains its role in facilitating tacit knowledge sharing in a culturally diverse work setting. Section 4.9 concludes with a summary of the chapter.

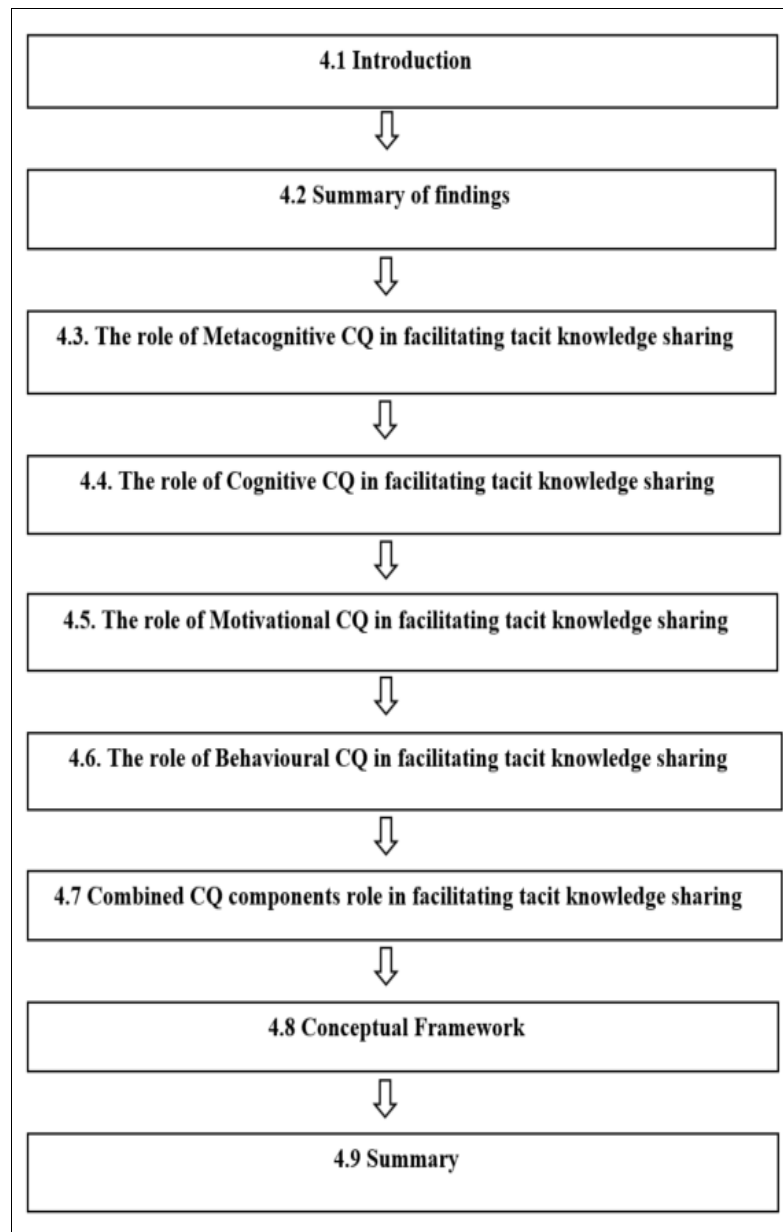


Figure 4.1. Chapter 4 overview.

4.2 Summary of Findings

The purpose of this section is to offer a summary of the findings from the interview data. A more detailed critical analysis and discussion of the findings is provided in the upcoming sections. From the 36 semi-structured interviews with Australian ICT professionals, the study made three main findings.

First, results revealed that all four CQ components play an important role in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse Australian work setting.

ICT professionals consider metacognitive CQ an important quality for facilitating tacit knowledge sharing. Specifically, interviewees perceive that metacognitive CQ aids ICT professionals to select an appropriate approach for sharing their tacit knowledge among ICT professionals in culturally diverse Australian work settings. From the interview data, evidence emerged that four sub-dimensions (identifying co-workers' cultural background, consciously planning prior to cross-cultural interaction, using previous cross-cultural interaction experience, and assessing the selected plan and approach) constitute metacognitive CQ. As per the interviews, these four help develop an ability for Australian ICT professionals to select an appropriate tacit knowledge sharing approach. The role of metacognitive CQ in facilitating tacit knowledge sharing is presented, analysed and discussed in detail in Section 4.3.

The next CQ component, cognitive CQ, also was found to be of importance to interviewees. They perceived that cognitive CQ plays a critical role in facilitating their tacit knowledge sharing, as it increases their intention to share such knowledge. The results revealed that there are three sub-dimensions (understanding co-workers' cultural behaviour, understanding co-workers' national culture and understanding co-workers' religious beliefs and customs) of cognitive CQ that foster sharing ICT professionals' tacit knowledge in a cross-cultural setting. The role of cognitive CQ in tacit knowledge sharing is presented, analysed and discussed in detail in Section 4.4.

In addition, ICT professionals' motivational CQ was observed to play a significant role in facilitating tacit knowledge. The findings showed that it fosters ICT professionals' willingness to share tacit knowledge in culturally diverse work settings. Three sub-dimensions (reciprocity, self-satisfaction and identification, and increased tacit knowledge stock) emerged within motivational CQ. The role of motivational CQ in facilitating tacit knowledge sharing is presented, analysed and discussed in detail in Section 4.5.

Behavioural CQ was also shown to play a role in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. It helps ICT professionals enhance their tacit knowledge sharing attitude. From the interview data, three sub-dimensions (adjusting communication style, adjusting work style and adjusting the tacit knowledge sharing approach and mechanism) emerged within behavioural CQ. The role of behavioural CQ's role in facilitating tacit knowledge sharing is discussed in detail in Section 4.6.

The second major finding revealed that the interrelationship of four CQ components plays a role in facilitating tacit knowledge sharing in cross-cultural work settings. The finding also reflected the importance of practising CQ and its impact on facilitating tacit knowledge sharing. The details of interrelationships across the four CQ components in facilitating tacit knowledge sharing are explained, analysed and discussed in detail in Section 4.7.

The third key finding provides support for the study's theoretical assumption regarding the link between tacit knowledge sharing and CQ outcomes. Indeed, the results revealed that four CQ outcomes (effective communication, contentedness and bonding, enhanced interpersonal trust and socialisation) facilitate tacit knowledge sharing in a cross-cultural work setting. CQ outcomes and their relationship with tacit knowledge sharing are explained, analysed and discussed in detail in Section 4.7.

Based on these findings, this study proposes a conceptual framework in Section 4.8. This framework helps clarify CQ's role in facilitating tacit knowledge sharing. The next section discusses the findings of the role of metacognitive CQ in facilitating tacit knowledge sharing.

4.3 The Role of Metacognitive CQ in Facilitating Tacit Knowledge Sharing

Metacognitive CQ refers to people's cultural awareness during cross-cultural interaction: specifically, the processes of planning, examining and reviewing mental models of cultural norms (Ang et al. 2007; Earley & Ang 2003). As highlighted in Chapter 2, metacognitive CQ plays an important role in cross-cultural interaction. It does so because it helps the individual become aware of cultural differences among employees and adapt accordingly in a culturally diverse work setting (Brinol & DeMarree 2011; Chua, Morris & Mor 2012). The major theme emerging from the

interview data was that metacognitive CQ was perceived as one of the important CQ components in facilitating tacit knowledge sharing among ICT professionals working in culturally diverse Australian work settings. This is because it helps ICT professionals to be cognisant of cultural differences among other ICT professionals during cross-cultural interaction. This awareness helps ICT professionals select an appropriate approach for sharing tacit knowledge with other ICT professionals from diverse cultural backgrounds. The study argues that metacognitive CQ plays an important role in enabling tacit knowledge sharing in a culturally diverse Australian work setting. This argument is supported by quotes derived from the interview data, which are discussed in Sections 4.3.1 and 4.3.2.

Another finding was the existence of metacognitive CQ's interrelationship with the other three CQ components (cognitive CQ, motivational CQ and behavioural CQ) in facilitating tacit knowledge sharing. This result is analysed and discussed in Section 4.7.1 under the sub-heading 'Interrelationship of CQ components'. The next section discusses the overview of the four sub-dimensions related to metacognitive CQ.

4.3.1 Overview of metacognitive CQ sub-dimensions

Metacognitive CQ was found to play an important role in facilitating tacit knowledge sharing. In support of the theme pertaining to the perceived importance of metacognitive CQ, four sub-dimensions of metacognitive CQ emerged. These sub-dimensions were identifying co-workers' cultural background, consciously planning prior to cross-cultural interaction, using previous cross-cultural interaction experience, and assessing the selected plan and approach (Table 4.1).

Table 4.1 Metacognitive CQ sub-dimensions

| CQ component | Sub-dimensions |
|---------------------|--|
| Metacognitive CQ | Identifying co-workers' cultural background |
| | Consciously planning prior to cross-cultural interaction |
| | Using previous cross-cultural interaction experience |
| | Assessing the selected plan and approach |

(Source: Developed for the study)

Identifying co-workers' cultural background. Identification of co-workers' cultural backgrounds reflects that ICT professionals recognise their co-workers' cultural difference in cross-cultural interaction. This was evidenced in the interview data when a participant highlighted that:

I mainly note [identify] my colleagues, their accent, name and appearance and get sort of an idea where they are from [cultural background]. It helps in many ways when you interact. (ICTP 28)

Section 4.3.2 will further discuss the concept of identifying co-workers' cultural background as a sub-dimension of metacognitive CQ and its importance in tacit knowledge sharing.

Consciously planning prior to cross-cultural interaction. Omatayo (2015) defines planning as a decision-making process whereby a way of action is created to move from a current state to the desired state, which includes gathering information and choosing the best course of action. This definition parallels the findings from the interviews. Participants mentioned that they planned and prepared the appropriate approach for tacit knowledge sharing with other ICT professionals from different cultural backgrounds. This was clearly remarked by one participant:

Before sharing knowledge [tacit] with a colleague [from a different cultural background], you should prepare and plan for it at our [culturally diverse] work setting. Doing so will help you use an appropriate way. (ICTP05)

The concept of consciously planning prior to cross-cultural interaction as an important sub-dimension of metacognitive CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in Section 4.3.2.

Using previous cross-cultural interaction experience. This sub-dimension of metacognitive CQ refers to ICT professionals' utilisation of their prior cross-cultural experience to select an appropriate tacit knowledge sharing approach in cross-cultural interaction.

Your previous experience [cross-cultural interaction] is significant. If it was successful, then plan and use a similar way [tacit knowledge sharing approach] with a similar group [co-workers with the same cultural background]. (ICTP 24)

Section 4.3.2 will further discuss the concept of using previous cross-cultural interaction experience as a sub-dimension of metacognitive CQ and its importance in tacit knowledge sharing.

Assessing the selected plan and approach. This sub-dimension emerged from data analysis. It reflects that ICT professionals evaluate whether the method they are employing is effective when sharing tacit knowledge with a co-worker from a different cultural background. One participant aptly highlighted this presupposition:

I always think and question myself like, how can I even share my ideas [tacit knowledge sharing approach] with them [co-workers from a different culture]? Or what is the approach I should use? Is the approach correct? I also check with them to see whether they understood what I am saying [sharing tacit knowledge]. (ICTP 30)

The concept of assessing the selected plan and approach as an essential sub-dimension of metacognitive CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in Section 4.3.2.

4.3.2 Critical analysis: metacognitive CQ's role in tacit knowledge sharing

The interviewees perceived metacognitive CQ as an important CQ component. ICT professionals repeatedly emphasised this view during the interviews. Almost all the participants acknowledged the relevance of the metacognitive CQ dimension, referring primarily to the importance of cultural awareness when interacting with people from different cultures, especially when sharing tacit knowledge in a culturally diverse workplace. The following quotations are illustrative of this point:

I think it's very important to be aware of other's background [cultural] because if you are not aware, you may sometimes end up talking or doing something that affects the relationship, which makes sharing ideas [tacit knowledge] harder. (ICTP 24)

If you are aware that another person is from a different cultural background, you can approach the person accordingly, which is important in work [culturally diverse work settings]. You will be able to connect with the person better, which helps in sharing your experience [tacit knowledge]. (ICTP 12)

What I generally do, and I think a lot of us do, is we think and plan [cultural consciousness] the communication based on our intended audience [different cultural backgrounds], which is important for sharing your knowledge [tacit].
(ICTP 14)

Thus, participants emphasised the importance of metacognitive CQ in sharing tacit knowledge in a cross-cultural work setting. For example, ICTP 24 perceived being mindful of a co-worker's cultural background (metacognitive CQ) in a culturally diverse work setting as crucial, as it helps avoid engaging in an act that could impair the working relationship with that co-worker. Indeed, good work relationships foster tacit knowledge sharing (Solli-Sæther & Karlsen 2014; Wei & Miraglia 2017). ICT professionals thus believed that being mindful of co-workers' cultures could assist them in selecting an appropriate approach to share their tacit knowledge. Hence, from the above sample quotations, metacognitive CQ was regarded as a significant factor in sharing tacit knowledge in a culturally diverse Australian workplace. Four sub-dimensions of metacognition CQ emerged from the data analysis: ICT professionals' identifying co-workers' cultural background, consciously planning (for tacit knowledge sharing) prior to cross-cultural interaction, using previous cross-cultural experience in selecting the approach for tacit knowledge sharing, and assessing the planned approach before and during tacit knowledge sharing. The importance of each of these sub-dimensions is discussed below.

Identifying co-workers' cultural background

Identification of co-workers' cultural background is considered a sub-dimension of metacognitive CQ because it refers to the mental capability representing cognitive functioning of an individual in a cross-cultural work setting. ICT professionals perceived identifying co-workers' cultural background as being essential in culturally diverse work setting, as it helps them plan an appropriate tacit knowledge sharing approach. Planning and selecting the approach is an important factor for effective tacit knowledge sharing (Navimipour & Charband 2016). Thus, ICT professionals considered identification of co-workers' cultural background as an important factor in selecting the tacit knowledge sharing approach in a cross-cultural work setting. The below quotations illustrate further the importance of identifying co-workers' cultural background.

There are different ways [knowledge sharing approaches] and different techniques that you could apply. But just by identifying people and what kind of a background [cultural] they're coming from, you can plan and select the better way [approach] to share knowledge. (ICTP 23)

Some colleagues' [from a different cultural background] feel difficulty to socialise [with co-workers]. And then you feel that sharing [tacit knowledge] through interaction is difficult. Often it is probably a cultural difference that limits their interaction, so you need to identify the background [cultural] first and plan which way you can share your ideas. (ICTP 18)

ICTP 18 perceived identifying the cultural background as helping to plan the manner in which s/he will share the tacit knowledge. For example, if sharing tacit knowledge through social interaction is not effective due to lack of socialisation, then s/he could show and demonstrate the knowledge through social interaction. Another participant emphasised the importance of identifying co-workers' cultural background:

And then identifying the background [culture] of your team members [co-workers] is also very important, so you can plan your interaction accordingly and plan the way you approach [tacit knowledge sharing approach] things. (ICTP 06)

From the above, it can be argued that identifying co-workers' cultural background can aid ICT professionals in selecting an appropriate tacit knowledge sharing approach and planning for tacit knowledge sharing in cross-cultural work settings.

Consciously planning prior to cross-cultural interaction.

Findings from the interview data revealed that ICT professionals perceived planning an appropriate approach as important for effective tacit knowledge sharing in a cross-cultural setting. This cultural awareness of ICT professionals and attendant planning of the tacit knowledge sharing approach is a factor of metacognitive CQ. Thus, consciously planning prior to cross-cultural interaction is considered a sub-dimension of metacognitive CQ that helps ICT professionals in selecting an appropriate approach that will be effective in a culturally diverse work setting. Statements from participants expressing this view are presented below.

I consider that it is important to be aware [culturally], as it helps me to think and plan a better way of sharing tacit knowledge with colleagues from a different cultural background. (ICTP 09)

You establish a strategy [plan] about how to approach people and then share or converse with other people from a different culture if you are mindful that there is a cultural difference. (ICTP 22)

Cultural awareness is important, and it will surely help with sharing knowledge [tacit], as it will help to design the better approach to share and avoid misunderstandings during communication. If you are aware of the cultural differences, you can plan accordingly. (ICTP 01)

In the above quotations, ICT professionals indicate that they are mindful of the cultural difference (metacognitive CQ) in their culturally diverse work setting, which enables them to plan for a seemingly effective tacit knowledge sharing approach. The statements also revealed that ICT professionals perceived planning as an important process because it helps them select an appropriate approach for sharing knowledge that comports with a co-worker's culture. This finding is consistent those of with Navimipour and Charband (2016), who showed that planning and selecting a suitable approach for sharing tacit knowledge is crucial for effectiveness. Thus, ICT professionals should consciously plan prior to cross-cultural interaction; doing so will help them select an appropriate tacit knowledge sharing approach.

Using previous cross-cultural interaction experience.

The interviews revealed that ICT professionals considered use of their prior tacit knowledge sharing experience in cross-cultural work settings and subsequent employment of the same approach (if previously effective) as beneficial. Utilisation of relevant experience aids ICT professionals in selecting an appropriate tacit knowledge sharing approach with co-workers of similar cultural backgrounds; such efforts entail a cognitive process. This cultural mindfulness, drawing on previous cross-cultural experience, is a factor of metacognitive CQ that can foster effective tacit knowledge sharing in a culturally diverse work. This point was remarked by a number of participants:

I try to be mindful of different cultural backgrounds of co-workers and be aware of the past experience with similar backgrounds [cultural] of other colleagues. I tend to use a similar style [tacit knowledge sharing approach] that I used in the past when dealing [sharing] with colleagues having similar backgrounds [cultural]. (ICTP 20)

If a person is from India and came here within only the last 3 months, then I think about what help [practical tips, tacit knowledge] that I should provide him from my previous interaction with a new immigrant from India. (ICTP 04)

In the above remark, ICTP 04 notes that he considered his earlier experience with a co-worker from India and then used it to select an appropriate tacit knowledge sharing approach for a relatively newly-arrived co-worker from India.

Another interviewee highlighted the importance of prior experience in sharing tacit knowledge.

If it is a western background, I will openly ask for the feedback, as that works well; I know it [from my past experience]. However, if the co-worker is from an Asian background, then I use appropriate words from previous experience to ensure that they understand the information that I share. If it [tacit knowledge sharing] worked well, then next time when I share stuff [tacit knowledge] with people from similar backgrounds, I will use the same approaches. (ICTP 01)

ICTP 01 describes the use of different approaches based on various cultural backgrounds. This participant used their previous experience of cross-cultural interaction to select an appropriate approach based on the co-worker's cultural background.

The above quotations clearly illustrate that ICT professionals perceive employing their previous experience of tacit knowledge sharing in cross-cultural interaction, and replicating previously effective approaches with co-workers of a similar cultural background, as important. Therefore, being mindful of one's cross-cultural experience can help ICT professionals to select the appropriate tacit knowledge sharing approach. The views expressed accord with the findings of Navimipour and Charband (2016), who argue that selection of a suitable approach is crucial for effective tacit knowledge sharing.

Assessing the selected plan and approach.

ICT professionals' mindfulness of cultural differences seemingly compels them to assess the selected plan and approach for sharing tacit knowledge in a cross-cultural setting. Such efforts represent a sub-dimension of metacognitive CQ: it is a cognitive process related to cross-cultural interaction. Indeed, this sub-dimension involves deep thinking and checking the plan and the effectiveness of the tacit knowledge sharing approach. Interviewees perceived that evaluating the selected tacit knowledge sharing approach to ensure effectiveness in a cross-cultural work setting is imperative. Participants' comments reflect this.

Also, check frequently with the other people that they understand what you are trying to explain, even though they might say that they understand you; it's important to check. For example, you can question them to see they understand [share tacit knowledge] you. Maybe the first time they will hesitate to say they don't understand [the shared tacit knowledge]. However, if you keep asking the question frequently and check yourself, then they will likely come to know that you are trying to help them. This will help to ensure that the selected approach works with this group [having the same cultural background] and you can plan the same for the future. (ICTP 05)

We do ask the questions in a way that is helpful for them to understand, which help us to know that we are in the correct direction [using the correct approach]. It gives confidence that selected approach is working; so we can continue to use the same approach to share [tacit knowledge] and plan similarly; that is important for successful knowledge transfer. (ICTP 35)

From the above statements, ICT professionals evidently perceive assessing the selected tacit knowledge approach as being crucial in a cross-cultural setting, as it helps ICT professionals to continue utilising an appropriate approach to share tacit knowledge. Such perceptions are concordant with those of extant work suggesting that using an appropriate approach is important for effective tacit knowledge sharing (Navimipour & Charband 2016).

Summary. As discussed above, ICT professionals perceived that the four sub-dimensions (identifying co-workers' cultural background, consciously planning prior to cross-cultural interaction, using previous cross-cultural interaction experience, and

assessing the selected plan and approach) of metacognitive CQ play an important role in facilitating tacit knowledge sharing. This is because the four sub-dimensions help ICT professionals select and use an appropriate tacit knowledge sharing approach in culturally diverse work settings.

Most previous work has discussed only the four CQ components and their outcomes (e.g., Ali et al. 2019; Al Mousa & Jones 2006; Ang et al. 2007; Chen 2015; Chen & Lin 2013; Elenkov & Manev 2009; Imai & Gelfand 2010; Ismail et al. 2016; Rockstuhl et al. 2011; Templer, Tay & Chandrasekar 2006). Few scholars have examined the sub-dimensions of each CQ component. This study discusses sub-dimensions of all four CQ components and their role in facilitating tacit knowledge sharing. In this section, four sub-dimensions of metacognitive CQ and their importance in facilitating tacit knowledge sharing were discussed. As far the researcher is aware, only Van Dyne et al. (2012) have discussed the sub-dimensions (planning, awareness and checking) of metacognitive CQ. However, Van Dyne et al.'s (2012) study was theoretical with no supporting empirical evidence; moreover, they did not relate the CQ components to tacit knowledge sharing. Thus, the emerging sub-dimensions of metacognitive CQ in the current investigation's findings are new and the research advances understanding of their role in selecting and using appropriate tacit knowledge sharing approaches in cross-cultural settings.

Moreover, previous research has shown that the use of an appropriate approach is important in tacit knowledge sharing (Navimipour & Charband 2016). The current work, based on ICT professionals' perspectives, supports and advances that research claim and suggests that selection and use of an appropriate approach for tacit knowledge sharing is especially crucial in culturally diverse work settings. As discussed in Chapter 2, the knowledge management literature proposes various alternatives for sharing tacit knowledge in an ICT context, such as social interaction, storytelling and observation (Borges 2012; Huzooree & Ramdoo 2015; Ozer & Vogel 2015; Ryan & Connor 2013). However, not all approaches are applicable in every circumstance, particularly in culturally diverse settings. For instance, sharing tacit knowledge through social interaction might be appropriate for some cultural groups whose members evince openness. It may not be appropriate, however, for more reserved groups. Within the same cultural group, for example, tacit knowledge is likely to be shared through close interaction, but where individuals are from

dissimilar cultures close interaction is likely to be a challenge. There are no universal approaches for sharing tacit knowledge in culturally diverse work settings, so selection and employment of an appropriate method for sharing tacit knowledge effectively is important. ICT professionals in this study perceived the four sub-dimensions of metacognitive CQ as assisting them in doing so.

The role of metacognitive CQ in facilitating tacit knowledge sharing has not been adequately discussed in extant literature. Scholars have described the relationship between metacognitive CQ and knowledge sharing (Alidoust & Homaei 2010; Chin & Lin 2013). They have also noted the influence of metacognitive CQ on organisational performance, effective communication and team satisfaction (Bücker et al. 2014; Chen et al. 2010; Groves, Feyerherm & Gu 2015; Gudmundsdottir 2015). They have not, however, considered the role of metacognitive CQ in facilitating tacit knowledge sharing. Indeed, Vlajcic et al. (2019) suggest exploring the role of all four CQ components in knowledge sharing. This study's findings regarding the role of metacognitive CQ in tacit knowledge sharing should be informative to ICT professionals, ICT organisations and CQ and knowledge management scholars in enhancing their understanding of the role of metacognitive CQ.

4.4 The Role of Cognitive CQ in Facilitating Tacit Knowledge Sharing

Cognitive CQ is an individual's knowledge of cultural norms, practices, and conventions in different cultural settings (Van Dyne et al. 2012). It represents an individual's understanding of the elements that constitute cultural environment and the similarities and differences of self and others in culturally diverse situations. Cognitive CQ is important to ICT professionals because comprehending cultural nuances helps them communicate sensitively with other ICT professionals from dissimilar cultures and take decisive action relevant to the situation (Ang & Van Dyne 2008). Analysis of the interview data revealed three sub-dimensions of cognitive CQ that facilitate tacit knowledge sharing among ICT professionals in a culturally diverse Australian work setting: understanding co-workers' cultural behaviour, understanding co-workers' national culture, and understanding co-workers' religious beliefs and customs. These will be discussed in Section 4.4.1.

Another finding that emerged from the data analysis was cognitive CQ's interrelationship with the other three CQ components (metacognitive CQ,

motivational CQ, and behavioural CQ) in facilitating tacit knowledge sharing. This finding is analysed and discussed in Section 4.7.1 under the sub-heading ‘Interrelationship of CQ components’. The next section presents an overview of the three sub-dimensions related to cognitive CQ.

4.4.1 Overview of cognitive CQ sub-dimensions

Cognitive CQ was found to play an important role in facilitating tacit knowledge sharing via three sub-dimensions: understanding co-workers’ cultural behaviour, understanding co-workers’ national culture, and understanding co-workers’ religious beliefs and custom (Table 4.2).

Table 4.2. Cognitive CQ sub-dimensions

| CQ component | Sub-dimensions |
|---------------------|---|
| Cognitive CQ | Understanding co-workers’ cultural behaviour |
| | Understanding co-workers’ national culture |
| | Understanding co-workers’ religious beliefs and customs |

(Source: Developed for the study)

Understanding co-workers cultural behaviour. This sub-dimension represents ICT professionals’ comprehension of the cultural behaviour of their co-workers in cross-cultural interaction while sharing tacit knowledge. The existence of this sub-dimension is evidenced in the following remark:

We feel that they are different or that their style is different; they might also feel or think about us the same way. So, if we understand them [other’s cultures] when you are interacting [sharing tacit knowledge], it avoids misunderstanding and builds the relationship while sharing your ideas. (ICTP 29)

The concept of understanding co-workers’ cultural behaviour as an important sub-dimension of cognitive CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in *Section 4.4.2*

Understanding co-workers’ national culture. Another sub-dimension that emerged from the data analysis was *understanding co-workers’ national culture*. National culture refers to a set of norms, behaviours, beliefs and customs that exist within the

population of a nation. This was evidenced in the interview data when a participant stated:

Let's say you're dealing [sharing tacit knowledge] with an Australian. You have to understand that they might not go in circle as our Asian person does, which is usual for Aussies, as they are direct and to the point. So it will be good to understand where they are from [national background] and their beliefs. (ICTP 03)

Section 4.4.2 will further discuss the concept of understanding co-workers' national culture as a sub-dimension of cognitive CQ and its importance in tacit knowledge sharing.

Understanding co-workers' religious beliefs and customs. This sub-dimension represents ICT professionals' comprehension of other ICT professionals' sectarian creeds and traditions in a cross-cultural work setting. Collectively, they refer to a set of norms, behaviours, precepts and conventions that exist within the religious system (Cohen 2012). The importance of understanding another's spiritual convictions is highlighted by the following comment from an interviewee:

I always try to understand the religious festival[s] of the co-worker and their beliefs[s], so I can be clear that I don't hurt them in the interaction. (ICTP 35)

The concept of understanding co-workers' religious beliefs and customs as an important sub-dimension of cognitive CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in Section 4.4.2

4.4.2 Critical analysis: cognitive CQ's role in tacit knowledge sharing

ICT professionals perceive cognitive CQ as playing an important role in facilitating tacit knowledge sharing. The ICT professionals repeatedly emphasised this during the interviews. Participants acknowledged the relevance of cognitive CQ, referring primarily to the importance of understanding other cultures when interacting with people, especially when sharing tacit knowledge in a culturally diverse workplace. The following quotations are illustrative.

So, it [understanding another's culture] is very important. It's important to understand because it actually helps you. In the workplace, to get outcomes and share your ideas [tacit knowledge], you need to understand more [cultural background] about your team members. My colleague is from a Jewish background. Their eating habits are slightly different. If you know a colleague is Jewish, obviously you will never offer them pork. You're not going to take them to a restaurant which only offers pork. It helps you to connect them with you. So, it is quite important to understand [a co-worker's culture], so you can connect well and interact easily with them. (ICTP 07)

Understanding [co-workers' cultural backgrounds] is important, and it helps. My strength is I integrate with anyone. I try to understand co-workers' backgrounds [cultural] and their likes. So then, next time I know what they're talking about. You can relate the topic, then you build the relationship, interact better, and exchange your ideas [tacit knowledge] openly. (ICTP 11)

From the above quotations, participants clearly see the importance of cognitive CQ in sharing tacit knowledge in a cross-cultural work setting. For example, ICTP 07 perceived that understanding a co-worker's cultural background (cognitive CQ) in a culturally diverse work setting is crucial, as doing so will foster a connection with the co-worker. Indeed, efficacious bonding and interaction across team members enhance their intention to share tacit knowledge, thus leading to tacit knowledge sharing behaviour (Ramayah, Yeap & Ignatius 2014; Razak et al. 2016; Reychav & Weisberg 2010; Yang & Farn 2009).

The following sections explain and critically analyse the importance of the three sub-dimensions of cognitive CQ in facilitating tacit knowledge sharing in culturally diverse work settings.

Understanding co-workers' cultural behaviour.

ICT professionals' understanding of other ICT professionals' cultural behaviour is considered an important sub-dimension of cognitive CQ. Apprehending another's cultural behaviour reflects an acknowledgement of other cultures; such efforts denote an individual's cognitive function in a cross-cultural work setting and imply that a person is implicitly aware of a co-worker's dissimilar cultural values, norms and beliefs.

ICT professionals perceived understanding co-workers' cultural behaviour as essential in a culturally diverse work setting. This is because behaviour can be misunderstood in cross-cultural interaction, and such misinterpretation could create disharmony in the team and negatively impact tacit knowledge sharing. By accurately comprehending co-workers' cultural behaviour, however, ICT professionals avoid misapprehension, thus likely fostering tacit knowledge sharing behaviour. Tacit knowledge sharing intention can assist individuals to share their tacit knowledge effectively in a team environment (Hau et al. 2013; Zhang & Ng 2013). Interviewees considered understanding of co-workers' cultural behaviour as an important factor in facilitating tacit knowledge sharing in cross-cultural work settings, as it enhances their intention to share.

We had a Caucasian co-worker in our team. The first time I met him, I thought he was extremely rude [behaviour]. So, I was keeping a distance. But I was not correct being judgmental initially without understanding [the co-worker's culture]. Later, I understood his culture through a friend and realised that everybody's different, and they do things differently. After understanding more, I felt that he is one of the best guys I've had in my team. Initially, we don't know them, and that is where this cultural difference comes in; each and everybody is different. It is crucial to understand to have a better affiliation so that you can share your thoughts [tacit knowledge] better. (ICTP 10)

A colleague of mine is from Iraq, and that's the first time I have interacted with somebody from an Iraqi background. I felt he was impolite [behaviour], and I was very fearful of having a conversation with him. Every time I raised something, it would be a big issue, and it was a back and forth, and our relationship was not that great. But when I understood his culture, I realised that it is normal to talk like that in their culture. This understanding [cultural] changed the whole direction of our relationship and made our interaction [sharing tacit knowledge through interaction] easier. (ICTP 19)

From the above statements, ICT professionals clearly perceived understanding co-workers' cultural behaviour as crucial for enhanced associations. ICT professionals also mentioned that understanding co-workers' cultural behaviour could prevent misunderstanding among ICT professionals in culturally diverse work settings. The below quotation illustrates this point.

One big thing that has worked for me is basically, like I said before, just understanding what their [the co-worker's] actions are and how they differ from mine. I try to understand the background [cultural] about them [the co-worker], where they studied, where they come from, and how they do things. Doing so helps in avoiding misunderstanding from their behaviour, which is important for sharing information. (ICTP 27)

From the above discussion, the cognitive CQ sub-dimension of understanding co-worker cultural behaviour could create an improved connection and prevent cultural misapprehension among ICT professionals in culturally diverse work settings. Previous research has found that enhanced associations among team members are likely to augment the tacit knowledge sharing intention of team members (Gubbins et al. 2012; Okoroafor 2014). The intention of tacit knowledge sharing is the degree to which an individual is likely to engage in tacit knowledge sharing activities; the greater that likelihood, the higher the probability that tacit knowledge sharing behaviour is manifested (Hau et al. 2013). As such, cognitive CQ could lead ICT professionals to enhance their intention to share tacit knowledge and, thus, have a significant impact on tacit knowledge sharing among ICT professionals in culturally diverse work settings.

Understanding co-workers' national culture

ICT professionals' understanding of other ICT professionals' national culture is a sub-dimension of cognitive CQ, as it pertains to comprehending the culturally specific values, norms and beliefs of a nation. Such knowledge is considered a component of cognitive CQ (Van Dyne et al. 2012). Understanding others' national culture entails a cognitive function in a cross-cultural work setting.

ICT professionals perceived that understanding co-workers' national culture is important in cross-cultural work settings. For example, apprehending co-workers' national festivals and holidays and then scheduling their work time and greeting them accordingly can create rapport among team members in a culturally diverse workplace. When there is a favourable bond among team members in a culturally diverse work setting, co-workers are likely to support each other. In fact, Borges (2019) states that improved connection and commitment across team members leads

to tacit knowledge sharing behaviour. The following comments by interviewees illustrate this view.

To an extent, it [understanding co-workers' national culture] is important and helps. I would say like, if you're going and speaking to an Aussie and you speak about 'footy', which is the most liked sports in Australia, you will connect with them. It will help you to move on with the conversation. That comes only when you understand their likes and beliefs, and you are on the same wavelength. This is important to build the rapport, which helps the team share their experience [tacit knowledge] more openly. (ICTP 04)

When I came to Australia, Easter or Cup Day was not a big thing for me. But it's a big thing for Australians. During my initial days, I scheduled meetings for discussion [knowledge shared through the discussions] just before the holiday without realising the festive seasons. I finally understood, and then started greeting them and adjusting the schedules, which helped to have a nice and friendly relationship. In fact, they commit and contribute more during the future discussions [tacit knowledge sharing occurs]. (ICTP 13)

I work with some French people, and they argue strongly in the office. By any Australian definition, and probably in most cultural definitions, they would argue all the time. You will almost think that they would just argue and not talk to each other anymore; but actually, they are very good friends. I understood later that French people actually like to argue a lot. They like to debate a lot. So it is important to understand other cultures [national] and how they interact, how they treat people, and how they work on ideas. Once you understand that, your perception changes, and you will get connected with them well, which helps in knowledge sharing. (ICTP 36)

The above discussion suggests that the cognitive CQ sub-dimension of understanding co-workers' national culture enables development of strong connections among ICT professionals in culturally diverse work settings. Previous research has observed that enhanced bonds among team members are likely to augment tacit knowledge sharing intention and behaviour (Gubbins et al. 2012; Hau et al. 2013; Jolaei et al. 2014). Thus, cognitive CQ plays a significant role in tacit knowledge sharing among ICT professionals working in culturally diverse settings.

Understanding co-workers' religious beliefs and customs

ICT professionals' understanding of other ICT professionals' religious beliefs and customs in a cross-cultural interaction can be considered culturally specific knowledge, since religion is part of a culture (Wellman & Corcoran 2013). Van Dyne et al. (2012) argue that an individual's culturally specific knowledge represents his/her cognitive CQ.

The sub-dimension of understanding co-workers' religious beliefs and customs that emerged from the data analysis was considered by ICT professionals to be essential in tacit knowledge sharing in culturally diverse work settings. This is because comprehending such information can assist ICT professionals in evaluating their own behaviour with their co-workers. Religious precepts are intense and connect emotionally (Nesami et al. 2015). When adequately understood and respected, increased team bonding can occur. The following quotations illustrate this sub-dimension.

Sometimes we should not use certain words in front of certain people, for example, religion related. I mean, when we speak, we might have to give examples. So, we have to be aware that certain things might offend some people based on their religion or background. You will know that, only if you have a basic understanding of particular religious beliefs. By understanding [religious customs], we can prevent offending co-workers. So, we will always have good bonding, and sharing our ideas [tacit knowledge] will be smooth. (ICTP 28)

One of the guys I worked with earlier would go to prayer every Friday at lunchtime. So having a meeting just before could be uneasy for him, as he wanted to go to the mosque. Understanding his preferences and working around his schedule made my life easier. In fact, he appreciated my understanding, and it created a good bonding. He shared lots of tips [tacit knowledge] with me and supported me always. (ICTP 18)

The above discussion indicates that the cognitive CQ sub-dimension of understanding co-workers' religious beliefs and customs enables good team bonding among ICT professionals in culturally diverse work settings. Previous research has found that close attachments among team members are likely to increase tacit knowledge sharing (Nakano, Muniz & Batista 2013; Wu & Lin 2013). Thus,

cognitive CQ plays a significant role in tacit knowledge sharing among ICT professionals working in a culturally diverse settings.

Summary. From the interview data, evidence revealed that ICT professionals perceived that three sub-dimensions of cognitive CQ (understanding co-workers' cultural behaviour, understanding co-workers' national culture, and understanding co-workers' religious beliefs and customs) are important in facilitating tacit knowledge sharing. This is because these three sub-dimensions help ICT professionals enhance their tacit knowledge sharing behaviour in culturally diverse work settings.

Previous research has not adequately discussed the sub-dimensions of CQ components. In fact, only a few researchers (e.g., Gregory, Prifling & Beck 2009; Van Dyne et al. 2012) have explored the sub-dimensions of the CQ components. However, as noted previously, Van Dyne et al. (2012) conducted a theoretical study with no empirical support. In relation to cognitive CQ, Van Dyne et al. (2012) mention two sub-dimensions: context-specific knowledge and cultural-general knowledge. Gregory, Prifling and Beck (2009) identify the sub-dimensions of objective and subjective culture but do not relate these sub-dimensions to tacit knowledge sharing. The present work thus advances Gregory, Prifling and Beck's (2009) research by finding that subjective culture may be more salient than objective culture for tacit knowledge sharing: interviewees expounded on subjective culture, which they considered important in facilitating tacit knowledge sharing in cross-cultural settings. In addition, this investigation found three specific subjective culture sub-dimensions of cognitive CQ that facilitate tacit knowledge sharing. These three sub-dimensions have not hitherto been identified or discussed as far the researcher is aware.

The three sub-dimensions of cognitive CQ found in this study assist ICT professionals to develop a strong bond and commitment. This, in turn, can lead to increased intention to share tacit knowledge sharing among ICT professionals and subsequent tacit knowledge sharing behaviour. Relevant literature implies that, if the work setting consists of team members who are committed to their job and have good relationships with co-workers, tacit knowledge sharing behaviour is manifested (Hau et al. 2013; Jolaei et al. 2014).

The role of cognitive CQ has not been adequately discussed in extant literature. While researchers have discussed the relationship between cognitive CQ and knowledge sharing (Alidoust & Homaei 2010; Chin & Lin 2013), most previous studies have focused on the influence of cognitive CQ on organisational performance, effective communication and team satisfaction (e.g., Bücken et al. 2014; Chen et al. 2010; Groves, Feyerherm & Gu 2015; Gudmundsdottir 2015). However, previous studies have not discussed the role of cognitive CQ in facilitating tacit knowledge sharing. Thus, the present study advances knowledge in CQ and tacit knowledge sharing by providing empirical data on the perceptions of ICT professionals working in culturally diverse Australian work settings.

4.5 The Role of Motivational CQ in Facilitating Tacit Knowledge Sharing

Motivational CQ reflects an individual's drive to learn about and function in situations characterised by cultural differences (Van Dyne et al. 2012). As discussed in Chapter 2, individuals with high motivational CQ are attracted to intercultural situations because they value the benefits of such interactions and are confident that they can cope with the inherent challenges of cultural differences (Chen et al. 2010). Most of the participants (31 out of 36) suggested that they enjoyed interacting with those from different cultures; they felt that doing so benefits them in sharing their knowledge in cross-cultural interactions. The analysis revealed that motivational CQ plays an essential role in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting; it does so by enhancing the willingness of ICT professionals to share their tacit knowledge. This is supported by three sub-dimensions that emerged from data analysis: reciprocity, self-satisfaction, and identification and increasing of tacit knowledge stock. These are discussed in Section 4.5.1.

Another finding that emerged from the data analysis was motivational CQ's interrelationship with the other three CQ components (cognitive CQ, metacognitive CQ, and behavioural CQ) in facilitating tacit knowledge sharing. The findings are analysed and discussed in Section 4.7.1 under the subheading 'Interrelationship of CQ components'. The next section discusses the overview of three sub-dimensions related to motivational CQ.

4.5.1 Overview of motivational CQ sub-dimensions

Motivational CQ was found to be important in facilitating tacit knowledge sharing, as it was repeatedly raised by ICT professionals during the interviews. In support of the theme of perceived importance of motivational CQ in facilitating tacit knowledge sharing, three sub-dimensions emerged and reflect how motivational CQ augments willingness to share tacit knowledge among ICT professionals working in culturally diverse work settings (Table 4.3).

Table 4.3. Motivational CQ sub-dimensions

| CQ component | Sub-dimensions |
|-----------------|--|
| Motivational CQ | Reciprocity |
| | Self-satisfaction |
| | Identification and increasing of tacit knowledge stock |

(Source: Developed for the study)

Reciprocity. This sub-dimension reflects that creating reciprocity has the effect of driving interaction with co-workers from different cultural background to share their own know-how and receive information and ideas from their co-workers. As one participant said:

I enjoy sharing my knowledge [tacit] with everyone [co-workers from a different cultural background]; then I'm going to gain more knowledge, as they will also share their ideas [tacit knowledge]. That's what I believe. (ICTP 09)

Section 4.5.2 will further discuss the concept of reciprocity as a sub-dimension of motivational CQ and its importance in tacit knowledge sharing.

Self-satisfaction. Drawing from the interview data, this sub-dimension reflects that when ICT professionals feel contented they are more likely to share their tacit knowledge with their co-workers from different cultural backgrounds. This is highlighted by the following statement:

It's satisfying in helping others by sharing your experience [tacit knowledge]. I will see that the other person becomes successful, and that makes me happy. (ICTP 04)

The concept of self-satisfaction as an important sub-dimension of motivational CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in Section 4.5.2.

Identification and increasing of tacit knowledge stock. This sub-dimension reflects ICT professionals' interest in augmenting their tacit knowledge through interacting and acquiring additional tacit knowledge from co-workers from a different cultural background. As one participant noted:

I am always interested to interact with a technical champion [identifying the expert] and experienced colleague to gain more knowledge [tacit knowledge stock]. (ICTP 15)

Section 4.5.2 will further discuss the concept of identification and increasing of tacit knowledge stock as a sub-dimension of motivational CQ and its importance in tacit knowledge sharing.

4.5.2 Critical analysis: motivational CQ's role in tacit knowledge sharing

ICT professionals perceived motivational CQ as playing an important role in facilitating tacit knowledge sharing. They consistently emphasised this during the interviews. Emerging from the data analysis, the majority of the participants felt in a general sense that motivational CQ was important to their organisation for sharing their tacit knowledge because they function in culturally diverse work settings. Also, participants acknowledged the relevance of the motivational CQ dimension, referring primarily to the importance of motivation, especially when sharing tacit knowledge in a culturally diverse workplace. The following quotations are illustrative of this point.

My motivation is to get to know other cultures better. It definitely helps in knowledge [tacit] sharing, as my interest to know about a person, their cultural background, and their way of life, which are different; so, I associate with the people and share knowledge when I have a more positive association with the individual. (ICTP 12)

Motivated in learning about co-workers' culture and interest to learn makes the work environment more friendly and comfortable. The more you are feeling comfortable, it's easy to share the [tacit] knowledge. (ICTP 17)

From the above comments, interviewees evidently saw the importance of motivational CQ in sharing tacit knowledge in cross-cultural work settings. The three sub-dimensions that emerged from the data analysis discretely describe this association. The importance of each sub-dimensions in facilitating tacit knowledge sharing is discussed below.

Reciprocity

ICT professionals are partly motivated to share their tacit knowledge with other ICT professionals from different cultural backgrounds in the interest of themselves acquiring some information. This motivational factor is considered as a sub-dimension of motivational CQ because ICT professionals perceived that reciprocity is a reason (or driver) for cross-cultural interaction. ICT professionals perceived that creating reciprocity in culturally diverse work settings is crucial for effective tacit knowledge sharing. This is because they believe that sharing their tacit knowledge with other ICT professionals will induce all parties to share tacit knowledge. The following quotations typify this point.

Basically, I can gain more knowledge by giving some knowledge to him [a co-worker from a different cultural background]. My knowledge about the product would definitely increase by sharing my knowledge with a person who joined recently, as it triggers them to share their previous experience [tacit knowledge]. (ICTP 05)

It's about helping each other, which makes work easier too. This motivates me to interact with a colleague from a different culture. Just by giving [tacit knowledge] to others, you will also get some [tacit knowledge]. I treat my colleagues more as friends, and they do the same. We help each other. (ICTP 08)

I share my ideas, and I expect them [co-workers from a different culture] to do the same; it is like a two-way street. It's like helping, and I expect them to help me as well. So, we all benefit and learn more. (ICTP 34)

So, if I try to say something, by aligning it with some other people's cultures, the audience may feel more involved. It motivates me to interact with them to learn more about them. This can help the audience to understand the issue [tacit knowledge] a bit more; plus, they feel a bit more familiar and comfortable, which eases [tacit] knowledge sharing, and they too give their input and share ideas. (ICTP 32)

Such reciprocation enhances tacit knowledge sharing, which could help ICT professionals develop better ICT products and services by using the collective tacit knowledge of the team members. Furthermore, creating reciprocity in sharing tacit knowledge among ICT professionals in cross-cultural work settings could also increase their willingness to share tacit knowledge, as they can experience team success and increasingly innovative ICT products. The following quotations illustrate how reciprocity enhances the inclination to share tacit knowledge.

Sharing your experience [tacit knowledge] can lead to strong connections with other people, as it will encourage them to share as well. It will make things [tacit knowledge sharing] easier. It also creates friends from the different cultures within the workplace. It will promote sharing tips [tacit knowledge] with each other. (ICTP 13)

Maybe if you are motivated to know about other cultures when sharing your know-how [tacit knowledge], you can develop rapport quickly, and it will encourage them [co-workers from other cultures] to share their knowledge [tacit], which eases the sharing process and initiates them to share their ideas more. (ICTP 26)

These remarks suggest that creating reciprocity can enhance connections among ICT professionals in culturally diverse work settings. Tangaraja et al. (2015) observe that strong bonds or rapport can foster a collaborative work environment. Borges (2013), Hau et al. (2013), Vuori and Okkonen (2012) and Wiewiora et al. (2013) all report that a collaborative environment enhances willingness to share tacit knowledge among employees. Based on extant literature and the interviewees' perceptions, it appears the creation of reciprocity plays a significant role in facilitating tacit knowledge sharing in cross-cultural work settings because it increases ICT professionals' inclination to share their tacit knowledge.

Self-satisfaction

ICT professionals reported that sharing their tacit knowledge with their co-workers, and thus helping them in their jobs, provides a sense of self-satisfaction. This motivational factor is considered as a sub-dimension of motivational CQ because ICT professionals perceived that self-satisfaction drives cross-cultural interaction. The following quotations illustrate this point.

I suppose that, when people [from a different cultural background] come in and ask a question, I am being approached by someone saying: ‘You probably know how to do it in an easy way. Can you explain it to me?’ This kind of puts me in a prime position to explain something and help. I feel pleased to do so and like to give more [sharing tacit knowledge]. (ICTP 22)

People coming from different backgrounds [cultural] have different experiences. I enjoy helping them find their feet in the organisation, as someone new coming from a different cultural background will find it difficult to mould to the environment. The first thing is to make them comfortable. The way you can make them comfortable is by sharing your experience and knowledge with them, and then they feel that they can trust you in getting help. It encourages me to support them further [sharing tacit knowledge]. (ICTP 02)

From the above quotations, ICT professionals’ obviously experience a self-satisfaction that encourages them to interact with other ICT professionals from different cultural backgrounds. Doing so facilitates tacit knowledge sharing, as it enhances their willingness to share their tacit knowledge. Previous research has found that individual factors play a role in tacit knowledge sharing, as they are closely related to a person’s experience and individual willingness to share their know-how (Obrenovic et al. 2020). Prior work has considered an individual’s willingness to share tacit knowledge as an important factor for effective tacit knowledge sharing (Borges 2013; Chen et al. 2018; Wang & Wang 2012). From the interview data, it appears ICT professionals are motivated by self-satisfaction, which enhances their willingness to share tacit knowledge in cross-cultural interactions.

Identification and increasing of tacit knowledge stock

ICT professionals’ interest in enhancing their tacit knowledge stock also drives them to engage in cross-cultural interaction with co-workers. This motivational factor is

considered as a sub-dimension of motivational CQ. ICT professionals perceived that to identify the tacit knowledge stock of other ICT professionals, it is necessary to interact with them. The following quotations illustrate this idea.

You have to be a good listener. So, people would have a different experience. You should listen to the experience and culture and socialise; so I think that listening plays a key role. If you are motivated to interact with others from different cultures, you will listen. Doing so will help you identify what they know [tacit knowledge]; you can learn from them and increase your knowledge [tacit knowledge stock]. (ICTP 24)

If you are in certain company for a long time, it is important to know who the experts in the relevant domain. By knowing [identifying] the expert, half the job is done. You will be obviously interested to interact with them to gain more knowledge. So, when you do that [interact], you start building that relationship and willingness to interact. This will increase your domain knowledge [tacit]. (ICTP 07)

From the above remarks, ICT professionals are clearly motivated in cross-cultural interaction to identify and increase their tacit knowledge stock. Doing so is crucial for tacit knowledge sharing. Previous studies have found that identification of tacit knowledge stock and interest in increasing that stock positively influence tacit knowledge sharing (Ribeiro 2013) by increasing willingness to share tacit knowledge (Wu & Lin 2013). As Wu and Lin (2013) note, ICT professionals perceive that identifying and increasing tacit knowledge is crucial in sharing knowledge in a cross-cultural work setting because it enhances the inclination to share tacit knowledge. Accordingly, motivational CQ plays a significant role in tacit knowledge sharing among ICT professionals working in a culturally diverse settings.

Summary. As discussed above, ICT professionals perceived that the motivational CQ sub-dimensions of reciprocity, self-satisfaction, and identification and increasing of tacit knowledge stock play an important role in facilitating tacit knowledge sharing through enhancing willingness to share tacit knowledge. Most previous work has discussed only the four CQ components and their outcomes (e.g., Ali et al. 2019; Al Mousa & Jones 2006; Ang et al. 2007; Chen 2015; Chen & Lin 2013; Elenkov & Manev 2009; Imai & Gelfand 2010; Ismail et al. 2016; Rockstuhl et al. 2011;

Templer, Tay & Chandrasekar 2006). Researchers have rarely explored the sub-dimensions of each CQ component and very few (e.g., Gregory, Prifling & Beck 2009; Van Dyne et al. 2012) have explored the sub-dimensions of all four CQ components. As noted earlier, Van Dyne et al. (2012) mention intrinsic, extrinsic and self-efficacy as sub-dimensions of motivational CQ. Admittedly, the three sub-dimensions of motivational CQ that emerged in the present study (reciprocity, self-satisfaction, and identification and increasing of tacit knowledge stock) could be subsumed under Van Dyne et al.'s (2012) intrinsic and extrinsic sub-dimensions. However, the present undertaking has identified motivational CQ sub-dimensions vis-à-vis tacit knowledge sharing among ICT professionals in cross-cultural work settings, a previously ignored context. Gregory, Prifling and Beck (2009) also identify sub-dimensions of motivational CQ, namely, goals, expectation and self-efficacy. Neither of those studies, however, relate their sub-dimensions of motivational CQ to tacit knowledge sharing. The present investigation specifically identifies the sub-dimensions of motivational CQ in a tacit knowledge sharing setting. Thus, the three sub-dimensions of cognitive CQ found here are new and, as far the researcher is aware, have not been discussed in extant literature.

4.6 The Role of Behavioural CQ in Facilitating Tacit Knowledge Sharing

The behavioural component of CQ reflects an individual's flexibility in displaying appropriate behaviour when interacting with people from a different cultural background (Van Dyne et al. 2012). As discussed in Chapter 2, people with high behavioural CQ can quickly adapt to another's gestures to ensure a comfortable intercultural exchange (Rehg, Gundlach & Grigorian 2012). The main relevant theme emerging from the interview data was that behavioural CQ was perceived to play a role in facilitating tacit knowledge sharing among ICT professionals working in a culturally diverse work setting. This is because it can help ICT professionals develop an appropriate tacit knowledge sharing attitude. Three sub-dimensions that embody that attitude emerged from the interview data and are discussed in Section 4.6.2.

Another finding that emerged from the data analysis was the behavioural CQ's interrelationship with the other three CQ components (cognitive CQ, motivational CQ, and metacognitive CQ) in facilitating tacit knowledge sharing. The finding is analysed and discussed in Section 4.7.1 under the sub-heading 'Interrelationship

between CQ components’. The next section discusses the overview of the sub-dimensions related to behavioural CQ.

4.6.1 Overview of behavioural CQ sub-dimensions

The three sub-dimensions – adjusting communication style, adjusting working style, and adjusting the tacit knowledge sharing approach and mechanism – reflect how behavioural CQ leads to developing a tacit knowledge sharing attitude among ICT professionals working in culturally diverse settings. Table 4.4 lists the three sub-dimensions, which are analysed and discussed in Section 4.6.2

Table 4.4. Behavioural CQ sub-dimensions

| CQ component | Sub-dimensions |
|---------------------|--|
| Behavioural CQ | Adjusting communication style |
| | Adjusting working style |
| | Adjusting the tacit knowledge sharing approach and mechanism |

(Source: Developed for the study)

Adjusting communication style. Communication style is defined as the way an individual verbally and para-verbally interacts with others to signal how literal meaning should be taken, interpreted, filtered or understood (Allameh et al. 2014; Gumus 2007). Adapting communication style refers to the way an ICT professional interacts with other ICT professionals from different cultural backgrounds in sharing his/her knowledge in a clear manner so that it will be correctly interpreted and understood. Interviewees recognised the importance of communication style, as the following quotation illustrates.

While I share information [tacit knowledge], I think that I probably consciously tend to slow down when I speak to people from different cultures, especially those from non-English speaking backgrounds, to ensure that my message is clearly understood. (ICTP 18)

The concept of adjusting communication style as an important sub-dimension of behavioural CQ and its importance in facilitating tacit knowledge in a culturally diverse work setting will be further discussed in Section 4.6.2

Adjusting working style. Working style here refers to ICT professionals' originally conceived working attributes that embody their working approach. By altering their working approach to suit other ICT professionals from a different work culture, ICT professionals can help ensure the knowledge they are trying to share is adequately understood. The following quotation highlights this idea.

I would adjust the way I deal with different people [co-workers from different cultures]. If I'm dealing with people [from a cultural background] who don't give answers outright, then I tend to prepare more questions for them to extract the information and share my ideas [tacit knowledge]. (ICTP 16)

Section 4.6.2 will further discuss the concept of adjusting working style as a sub-dimension of behavioural CQ and its importance in tacit knowledge sharing.

Adjusting the tacit knowledge sharing approach and mechanism. This sub-dimension reflects how ICT professionals adjust their selected tacit knowledge sharing approach and mechanism to ensure other ICT professionals from different cultural backgrounds will understand the conveyed tacit knowledge. As one interviewee said:

I do adjust the way I share and how I share [tacit knowledge] based on the audience [co-workers from a different cultural background]. (ICTP 33)

The concept of adjusting the tacit knowledge sharing approach and mechanism as an important sub-dimension of behavioural CQ and its importance in facilitating tacit knowledge in culturally diverse work settings will be further discussed in Section 4.6.2.

4.6.2 Critical analysis: behavioural CQ's role in tacit knowledge sharing

ICT professionals consistently emphasised the importance of behavioural CQ in the interviews. Specifically, participants acknowledged the relevance of the behavioural CQ dimension, referring primarily to the import of behavioural adjustment when interacting with people from different cultures, especially when sharing tacit knowledge. The following quotations are illustrative of this point.

Communication is not just what you say; it is also how you say something. The way you use body language, signals, and cues should be different based on who [culturally diverse] you are surrounded by. Overall, your words, posture, gestures, and everything contribute to how you get the information and knowledge [tacit] across. (ICTP 12)

Yes, it [behavioural CQ] does play a role. In my case, I can definitely see that I'm loud sometimes. And I talk a little bit fast. When it comes to people from different cultures, they find it very difficult to understand the information [tacit knowledge] that I share. I decided to change and now tend to lean towards simple vocabulary, slow down, and try to adjust my way according to the audience [co-workers]. This change has helped me to share my ideas better with my colleagues [from a different cultural background]. (ICTP 26)

When it comes to co-workers from foreign cultures, they will consider each expression on your face and will notice everything when you share your experience [tacit knowledge]; therefore, we have to be cautious. If we offend them by using inappropriate gestures or words, then knowledge sharing will be hampered. So, we need to adjust [behavioural CQ] to suit the environment [cross-cultural work setting], so that they will have a sense of comfort and positive feeling, which can make it [tacit knowledge sharing] effective. (ICTP 31)

It is important that everyone should adjust or make some changes depending on the environment [culturally diverse work setting] and the person [different cultural backgrounds] they are dealing with while sharing their ideas [tacit knowledge]. This makes communication easier, brings some sense of comfort among the team members, and helps knowledge sharing be easier. (ICTP 01)

From the above comments it is clear that participants viewed behavioural CQ as important in sharing tacit knowledge in cross-cultural work settings. For example, ICTP 31 perceived that adjusting verbal and non-verbal behaviour in a culturally diverse work setting as crucial, as doing so can engender comfort among team members and lead to positive feelings about tacit knowledge sharing. In other words, behavioural CQ can assist ICT professionals in improving their tacit knowledge sharing attitude. This was supported by three sub-dimensions that emerged from the

data analysis: adjusting communication style, adjusting working style, and adjusting the tacit knowledge sharing approach and mechanism.

The importance of each sub-dimension in facilitating tacit knowledge sharing is discussed below. This section first explains and critically analyses the importance of these three sub-dimensions from the interview data.

Adjusting communication style

Adjusting communication style is one of the sub-dimensions of behavioural CQ; ICT professionals adjust their communication style to suit the cross-cultural interaction in order to deliver a message that is understandable. ICT professionals perceived adjusting communication style in cross-cultural interactions as crucial for sharing their tacit knowledge effectively. The quotations below highlight the importance of adapting communication style, which can aid ICT professionals in conveying tacit knowledge with enhanced clarity, thus augmenting the understanding of the recipients and fostering a sense of comfort in the team.

Obviously, when you change the accent a little for non-Westerners, we speak the usual way they do, so to speak. But then when we talk to people from Western countries, then obviously we try to change our accent so that it's easier for them to understand us. This helps them feel relaxed during interaction and conveys the message [tacit knowledge] with more clarity. (ICTP 17)

When you speak, one of the things I do is talk extremely slow. A lot of Indians generally speak very fast. So not everyone can understand the information [tacit knowledge] easily. I used to speak fast, but I learned to slow down. Now my audience [co-workers] can get the message [tacit knowledge] clearly. (ICTP 03)

I guess from what I generally do, and I think a lot of us do, is we change the way we talk and communicate based on our intended audience [co-workers from a different cultural background] to ensure the information is understood. (ICTP 14)

Participants remarked that behavioural adjustments, especially when speaking (e.g., modifying their accent, speaking slowly) can lead to effective communication between ICT professionals. In fact, effective communication has been found to

supports tacit knowledge sharing (Panahi, Watson & Partridge 2013). From the above quotations, participants are keen to share their tacit knowledge with clarity by adapting their communication style. As such, participants' attitude towards tacit knowledge in cross-cultural work settings is enhanced. The comforting environment and effective communication can create a positive attitude among ICT professionals in relation to sharing their tacit knowledge (Fullwood, Rowley & Delbridge 2013; Hau et al. 2013). Thus, behavioural CQ plays a significant role in tacit knowledge sharing among ICT professionals working in culturally diverse settings.

Adjusting working style.

Working styles are also adjusted to ensure that tacit knowledge is transferred effectively. This is considered as a sub-dimension of behavioural CQ as ICT professionals adjust their working style to suit cross-cultural interaction. ICT professionals perceived adjusting working style in cross-cultural interaction as crucial for sharing their tacit knowledge effectively. The quotations below illustrate the importance of adjusting working style.

Mostly I try to ask some people of a different background to repeat my message just to make sure they understand what I'm saying, because sometimes in some cultures there is this notion that if you ask questions, you're not good enough. So, they don't ask, even if they don't understand. There is a challenge in delivering your views [tacit knowledge] when the co-workers are from a different background; you need to adjust and work around to share the knowledge [tacit]. (ICTP 07)

So, let's say if I want to explain something in one sentence to someone of the same culture, it may work. If I convey the same message in that one single sentence to someone [a co-worker] from a different culture, though, then it may not work. So, what I would have to do is I would have to frame it in such a way that it would make sense for them. I need to adjust the way I work depending on the audience [co-worker culture] to ensure they are comfortable and understand my message [tacit knowledge]. (ICTP 27)

From the above comments, ICT professionals clearly perceive the importance of adjusting their working style in cross-cultural interaction to ensure that tacit knowledge sharing is effective. This adjustment also can induce a sense of comfort

among team members in a culturally diverse workplace, as the adaptation can instil a feeling of support, which may enhance the tacit knowledge sharing attitude (Fullwood, Rowley & Delbridge 2013; Hau et al. 2013).

Adjusting the tacit knowledge sharing approach and mechanism

To make tacit knowledge sharing more effective, the method of sharing should be modified to suit the cross-cultural interaction. This is considered a sub-dimension of behavioural CQ, as ICT professionals adjust their approach to suit the cross-cultural interaction. Participants mentioned that altering their approach and using different mechanisms when sharing tacit knowledge in cross-cultural settings is crucial. Otherwise, co-workers from dissimilar cultural backgrounds may feel uncomfortable and unable to interpret the tacit knowledge accurately. The following quotations illustrate this point.

Personally, I do so [adjust the approach] through one-to-one interaction when I share my knowledge with a co-worker from a different culture. I prefer that the person be next to me, which is very effective; plus, the person can ask me questions easily, and we can easily interact and share ideas [tacit knowledge]. (ICTP 05)

It's important to use a proper approach to share your [tacit] knowledge. Depending on co-workers' backgrounds, for some colleagues, you create a different environment, like sharing your knowledge casually during coffee chat [social interaction]. But for other colleagues, you need to be more formal, literally coach them using a whiteboard [utilising a different mechanism]. It is important to adjust the approach to make it successful [effective] based on the person you are sharing with. (ICTP 25)

So, to share [tacit knowledge] with a co-worker from a different culture, one of the approaches that I normally take is a pictorial representation [the tool]. I draw it. So, you know, when you say a word, it may have a different meaning and be misinterpreted. But when you draw it on a sheet of paper, then it will make the other party understand better. (ICTP 27)

Thus, ICT professionals clearly perceive the importance of adjusting their tacit knowledge sharing approach and mechanism in cross-cultural interactions to ensure effective communication. This alteration also increases understanding of the tacit

knowledge among ICT professionals in culturally diverse workplaces and fosters a sense of comfort while sharing; collectively, this induces a tacit knowledge sharing attitude (Fullwood, Rowley & Delbridge 2013). Furthermore, Navimipour and Charband (2016) claim that utilising a suitable approach to share tacit knowledge is crucial for effective tacit knowledge sharing. Therefore, behavioural CQ plays a significant role in tacit knowledge sharing among ICT professionals working in culturally diverse settings.

Summary. From the above discussion, behavioural CQ is crucial for facilitating tacit knowledge sharing. Indeed, interviewees repeatedly emphasised its import for sharing tacit knowledge among ICT professionals working in culturally diverse settings.

As previously mentioned, little previous research has focused on the sub-dimensions of each CQ component. In relation to behavioural CQ, Van Dyne et al. (2012) mention verbal, non-verbal and speech as sub-dimensions. The three sub-dimensions of behavioural CQ revealed in this study (adjusting communication style, adjusting working style, and adjusting the tacit knowledge sharing approach and mechanism) are consistent with Van Dyne et al.'s (2012) sub-dimensions. However, the current effort identified sub-dimensions that are more specifically related to tacit knowledge sharing. While Gregory, Prifling and Beck (2009) identify sub-dimensions of behavioural CQ (management style, expectation and communication style), they were not applied in a tacit knowledge sharing context. Thus, the three sub-dimensions of behavioural CQ that emerged in the present endeavour have not been discussed in previous literature with regards to tacit knowledge sharing and thus represent a major advance on the extant knowledge management and CQ literature.

Summary of the role of the four CQ components in facilitating tacit knowledge sharing. The findings of the current study are generally consistent with previous research showing a relationship between CQ and knowledge sharing (Ali et al. 2019; Alidoust and Homaei 2010; Chen and Lin 2013; Ismail et al. 2019; Vlajcic et al. 2019). The current investigation, however, advances understanding and explores the role of each component in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. The empirical approach reveals that each CQ component has a role in facilitating tacit knowledge sharing and that each comprises sub-dimensions that foster that sharing. Specifically, metacognitive CQ

aids ICT professionals in selecting an appropriate tacit knowledge sharing approach. Cognitive CQ helps ICT professionals develop tacit knowledge sharing intentions and behaviours. Motivational CQ enhances willingness to share tacit knowledge and, finally, behavioural CQ enables development of a tacit knowledge sharing attitude among ICT professionals functioning in culturally diverse work settings. To the best of the researcher's knowledge, this is the first study to explore the role of *each* CQ component in facilitating tacit knowledge sharing among ICT professionals. Thus, it partly addresses a recent call for future work to adopt this perspective (Vlajcic et al. 2019). The current undertaking also focused on the knowledge gap identified in Chapter 2 by presenting findings that demonstrate that all four CQ components play an important role in facilitating tacit knowledge sharing among ICT professionals and that interviewees (ICT professionals) apparently regard all four CQ components to be of equal import in fostering such sharing.

All four CQ components are crucial in culturally diverse work settings. Some scholars, view CQ as a combination of all four components (Engle & Crowne 2014; Huff, Song & Gresch 2014; Ott & Michailova 2016; Van Dyne et al. 2012), meaning that, in the absence of any of the four components, tacit knowledge sharing may not be successful. For example, if an ICT professional with high metacognitive CQ selects and uses an appropriate approach for sharing tacit knowledge in a culturally diverse work setting but has low behavioural CQ, that deficiency may well impact his/her interpersonal relationships and social interaction with other ICT professionals. If so, tacit knowledge sharing is likely to be impeded. Thus, analysing the interrelationship of all four CQ components and their combined role in facilitating tacit knowledge sharing in a culturally diverse work setting is warranted. This issue is discussed in Section 4.7.

4.7 Combined CQ Components' Role in Facilitating Tacit Knowledge Sharing

In the previous four sections, the role of each *individual* CQ component in facilitating tacit knowledge was discussed. This section analyses and discusses the interrelationship between CQ components in facilitating tacit knowledge sharing. Furthermore, it also analyses and discusses ICT professionals' perceptions of the relationship between CQ outcomes and tacit knowledge sharing.

4.7.1 Interrelationship of CQ components' role in facilitating tacit knowledge sharing

Because CQ is synergistic (Lovvorn & Chen 2011), this section explores the interrelationship between the four CQ components and their combined role in facilitating tacit knowledge sharing. Much extant work has asserted that the four CQ components are interlinked (e.g., Bücker, Furrer & Lin 2015; Chua, Morris & Mor 2012; Engle & Crowne 2014; Ott & Michailova 2016; Vlajcic et al. 2019). For example, individuals with motivational CQ ability are interested in experiencing cross-cultural interaction with other individuals; doing so seemingly enhances their understanding of other cultures and thus their capacity to identify similarity and difference between their culture and other cultures. Indeed, such comprehension and comparison manifest cognitive CQ and show that motivational CQ and cognitive CQ are interrelated. Another example involves the linkage between motivational CQ and behavioural CQ. Individuals with motivational CQ will likely be interested in cross-cultural interaction. As a result of such interest, they may well be mindful of their behaviour; such awareness could help them adjust their behaviour during cross-cultural interaction. This adjustment in a cross-cultural interaction reflects behavioural CQ. Given these examples and the extant literature, it appears CQ components are indeed interconnected and impact such areas as effective communication, cross-cultural adjustment, performance, cross-cultural leadership, and knowledge sharing (Chen & Lin 2013; Chua, Morris & Mor. 2012; Elenkov & Manev 2009; Imai & Gelfand 2010; Ismail 2015; Ott & Michailova 2016; Rockstuhl et al. 2011).

Previous research related to CQ and knowledge sharing (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Chen & Lin 2013; Ismail et al. 2016; Vlajcic 2019) has considered the combined CQ components. However, how these four CQ components are interrelated in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse work setting is unknown; the existing literature focuses on identifying the relationships between CQ and knowledge sharing in general but not on tacit knowledge sharing per se. The current study's findings show that ICT professionals perceived all CQ components as interrelated in facilitating tacit knowledge sharing in culturally diverse work settings, as discussed below.

First, ICT professionals perceived motivational CQ and cognitive CQ as interrelated, as their drive to interact in a cross-cultural setting to increase their tacit knowledge stock stimulates them to know more about co-workers' cultures, including cultural norms, values and beliefs. Augmenting tacit knowledge stock is considered a sub-dimension of motivational CQ and its important role in facilitating tacit knowledge sharing was described in Section 4.5.2. Similarly, comprehending co-workers' culture is a sub-dimension of cognitive CQ; its importance in facilitating tacit knowledge sharing was explained in Section 4.4.2. Thus, the foregoing discussion suggests that motivational CQ and cognitive CQ are interrelated and collectively facilitate tacit knowledge sharing. The following quotations illustrate this finding.

I think that by having an interest in interacting with a co-worker from another culture [motivational CQ] will help you to gain more understanding about that culture [cognitive CQ], as I will be keen to listen and learn [from that co-worker]. This interest and knowledge will create feelings of unitedness and increase willingness to share tacit knowledge openly. (ICTP 33)

So, I think people interested to learn about other cultures [motivational CQ] are curious about other cultures and thus naturally tend to be people that want to learn more and understand [cognitive CQ]. They will learn about a diverse set of ideas and experiences and increase their knowledge about other cultures. The interest and good understanding will make the sharing [of tacit knowledge] easier as they can connect well. (ICTP 36)

Second, ICT professionals perceived that metacognitive CQ and cognitive CQ are interrelated. This is because ICT professionals use their previous cross-cultural experience and plan future cross-cultural interactions to foster sharing their tacit knowledge. The planning of tacit knowledge sharing in a cross-cultural setting is a sub-dimension of metacognitive CQ; its importance in facilitating tacit knowledge sharing was discussed in Section 4.3.2. The previous cross-cultural experience emanates from individuals' cultural knowledge. Cultural knowledge is acquired because ICT professionals aspire to understand a co-worker's culture. Apprehending other culturally specific knowledge is a sub-dimension of cognitive CQ in the literature (Van Dye et al. 2012). As understanding of a co-worker's culture increases, ICT professionals use that knowledge and plan subsequent cross-cultural interactions for sharing their tacit knowledge effectively. Thus, the argument implies that

metacognitive CQ and cognitive CQ are interrelated. The following quotation demonstrates this issue.

Some of my team members are from Vietnam and Portugal. They have a completely different approach to work and approach to things getting done. But I think that me being aware of that [metacognitive CQ] from my previous experience and understanding where they come from [their cultural background: cognitive CQ] definitely helps me plan the way I approach them [metacognitive CQ]. Consequently, they will be more respectful, and they always treat me with really good respect. And I think understanding makes a difference. It helps you to plan the approach that suits them. (ICTP 21)

Third, ICT professionals perceived that metacognitive CQ and motivational CQ are interrelated, as their drive to interact in a cross-cultural setting to increase their tacit knowledge stock augments their efforts to plan consciously for their cross-cultural interaction and identification of co-workers' cultural backgrounds. ICT professionals' aspiration to interact in a cross-cultural setting to heighten their tacit knowledge stock was found in this study to be a sub-dimension of motivational CQ; its importance in facilitating tacit knowledge sharing was described in Section 4.5.2. Similarly, ICT professionals' conscious planning of their cross-cultural interaction and identifying co-workers' cultural backgrounds are considered evidence of metacognitive CQ, the importance of which was explained in Section 4.3.2. The following quotation illustrates the point that motivational CQ and metacognitive CQ are interrelated.

I have the interest [motivational CQ] to interact with others [co-workers from different cultures] at work because it helps me to develop my knowledge [increasing tacit knowledge stock]. It is important to plan [metacognitive CQ] the interaction [cross-cultural] carefully, so I don't offend them. If I plan well and have the interest to connect, it will make sharing easier. (ICTP 31)

Fourth, ICT professionals perceived that cognitive CQ is antecedent to behavioural CQ in facilitating tacit knowledge sharing. After all, adjusting one's communication style to improve cross-cultural interaction is vital for understanding a co-worker's cultural background. This cultural knowledge was revealed to be a sub-dimension of cognitive CQ in the current study. Moreover, altering one's communication to suit his/her audience was found to be a sub-dimension of behavioural CQ in this

investigation. ICT professionals perceived that understanding co-workers' culture is necessary in order to modify their communication style to suit their co-workers. As highlighted by the quotation below, behavioural CQ (adjusting verbal and non-verbal behaviour) is related to cognitive CQ (knowledge of other cultures).

Adjustment of my body language, the tone, the action, and the speed of my speech is crucial [behavioural CQ]. Maybe that would have come from my understanding and experiences [cognitive CQ], but that helps. It really helps in creating a bond and avoid hurting others. So, the team will be friendly to share knowledge easily. But it is important to understand others [cultural knowledge]; then you can adjust your behaviour. (ICTP 09)

Finally, ICT professionals perceived that metacognitive CQ, motivational CQ and cognitive CQ were antecedent to behavioural CQ in facilitating tacit knowledge sharing. This is because they believed that behavioural CQ is reflected in action while metacognitive CQ, motivational CQ and cognitive CQ involve mental processes. Such perceptions are consistent with previous research (Van Dyne et al. 2012). In facilitating tacit knowledge sharing, ICT professionals felt that adjusting their verbal and non-verbal behaviour, such as their communication style and working style, to suit the cross-cultural interaction requires being mindful of the cross-cultural interaction (metacognitive CQ). Such mindfulness will then lead them to be actuated to continue the cross-cultural interaction (motivational CQ), as well as to acquire an understanding of co-workers' cultural backgrounds (cognitive CQ). The following quotation summarises the position.

Cultural diversity is common in today's workplace, and you need to have the interest to interact [motivational CQ] with people from different cultures in order to work together ... It is important to be aware [metacognitive CQ] of a co-worker's background [cultural]. Understanding a co-worker's culture is important ... and behaviour adjustment is absolutely important [behavioural CQ], but you need to understand [cognitive CQ] what to adjust. I think adjusting your behaviour to suit the audience [a co-worker from a different culture] will definitely help in knowledge sharing, because it creates a good working relationship. (ICTP 03)

Thus, all four CQ components are perceived by ICT professionals to be interrelated in facilitating tacit knowledge sharing. Understanding the interrelationships between

these components is crucial for comprehending the role CQ plays in facilitating tacit knowledge sharing; if the interrelationships are not sufficiently understood and are not managed effectively, there is likely to be an adverse impact on tacit knowledge sharing in culturally diverse work settings. For example, ICT professionals may have behavioural CQ ability, and thus a willingness to adjust their verbal and non-verbal behaviour in cross-cultural interaction. However, they also need to possess cognitive CQ ability so that they grasp other cultural norms and practices and adapt their verbal and non-verbal behaviour accordingly. Without such cultural knowledge, the adjustments may not be useful, as they produce exhibit behaviour that offends ICT professionals from a different cultural backgrounds. In addition, to understand other cultural norms and practices, ICT professionals should have motivational CQ; this can induce them to learn about other cultures. Also, ICT professionals should have metacognitive CQ to recognise and be cognisant of cultural differences. Thus, all four CQ components are interrelated and work together synergistically to achieve improved cross-cultural interactions and tacit knowledge sharing. As mentioned previously, the interrelationship of these four components creates sound working relationships, augmented bonding, and an enhanced willingness to share tacit knowledge in cross-cultural work settings. Thus, the interrelationships of these four CQ components play an important role in facilitating tacit knowledge sharing among ICT professionals working in cross-cultural settings.

Practising CQ. In addition to these four CQ components, ICT professionals perceived that individuals need to practise using CQ. Doing so can assist them in developing an innate capacity for engaging in effective cross-cultural interaction. The following quotations illustrate the importance of practising CQ.

My experience dealing with the different cultural backgrounds and geographical backgrounds for these many years makes me a bit confident in cross-cultural interaction, and sharing my experience [tacit knowledge] with a co-worker comes naturally. It becomes natural now... I do frequently [repeatedly] interact with co-workers from different cultural backgrounds [practise]... I enjoy interacting with them [motivational CQ ... I know them [understand their cultural background] well. Dealing with a co-worker from a different cultural background is unavoidable in this industry, you need to do it

and you need to get used with such things [cross-cultural interaction]. (ICTP 09)

Being mindful [metacognitive CQ] and understanding what their [co-workers'] background is and understanding more about their [co-workers'] culture [cognitive CQ] and move [adjust] accordingly [behavioural CQ] helps to make the work-life easier ... I am always interested in cross-cultural interaction [motivational CQ], as I need to have a diverse team for success, and you know it's been proven ... I think my several years of experience [practise] in cross-cultural interaction like doing the same way [Cross-cultural interaction] makes my life easier and it becomes usual now. (ICTP 07)

Practising CQ requires practising all four CQ components repeatedly by ICT professionals in a culturally diverse work setting. This study argues that practising CQ helps facilitate tacit knowledge sharing in culturally diverse work settings in Australia. It does so because, through practice, CQ can be internalised over time and thus become a natural process for ICT professionals. ICT professionals need to practise CQ, because, as mentioned previously, ICT organisations in Australia rely on ICT professionals from overseas. ICT professionals from a different cultural backgrounds often have temporary assignments and leave Australia at the conclusion of the assignment (Shah 2012; Shemi, Mgaya & Nkwe 2014). Therefore, expediting the tacit knowledge sharing process to develop innovative ICT products and services is of paramount importance for ICT organisations employing these short-term professionals (Borges 2013; Dreyer & Wynn 2016). If ICT professionals practise CQ regularly, it can become habitual and thus foster sharing of tacit knowledge in a relatively short time period. Therefore, practising CQ can potentially add value and play an important role in facilitating tacit knowledge sharing among ICT professionals.

4.7.2 Relationship between outcomes of CQ and tacit knowledge sharing

In the literature review (Chapter 2), the researcher theorised that possessing CQ can lead to salutary outcomes than can influence tacit knowledge sharing among ICT professionals in culturally diverse settings. Although this was not a primary goal of the current study, this finding is presented because it advances knowledge by providing empirical evidence for the link between CQ and tacit knowledge sharing.

As discussed in the above section, ICT professionals perceived that all four CQ components are interrelated and collectively play a role in facilitating tacit knowledge sharing. Similarly, ICT professionals felt that possessing CQ helps them achieve positive outcomes through their interactions, which further assists them in sharing tacit knowledge in culturally diverse work settings. The most frequently mentioned outcomes from possessing CQ that positively influence tacit knowledge sharing were effective communication, contentedness and bonding, enhancement of interpersonal trust, and socialising.

Previous studies in the CQ literature have discussed some of the foregoing outcomes, including effective communication, trust, collaboration and social interaction (Bücker et al. 2014; Chua, Morris & Mor 2012; Groves, Feyerherm & Gu 2015; Ott & Michailova 2016). However, that work has not empirically linked these outcomes to tacit knowledge sharing. The researchers instead theoretically linked selected CQ outcomes (e.g., social interaction, collaboration, trust) with tacit knowledge sharing. The findings from the data analysis in the current study support those theoretical linkages, thus enhancing understanding of tacit knowledge sharing from the perspective of ICT professionals working in culturally diverse work settings in Australia. These results are discussed below.

Effective communication (CQ outcome) and tacit knowledge sharing

Participants remarked that their cultural awareness, drive to interact in a cross-cultural setting, understanding of co-workers' culture, and making of behavioural adjustments, especially when speaking (e.g., modifying their accent, speaking slowly), can lead to effective communication in cross-cultural interaction. Effective communication is thus considered an outcome of possessing CQ. This is consistent with the finding in previous literature (Bücker et al. 2014) that CQ enhances effective communication in cross-cultural interaction. Previous research in knowledge management has emphasised that effectual communication is a necessary condition for sharing tacit knowledge (Panahi, Watson & Partridge 2012; Snyder & Lee-Partridge 2013; Takpuie & Tanner 2016; Zahedi, Shahin & Babar 2016). Illustrative quotations from interviewees highlight these ideas.

It is important that everyone should be mindful [metacognitive CQ], understand [cognitive CQ], and adjust [behavioural CQ] depending on the environment and

the person they are dealing with while sharing their ideas [tacit knowledge sharing]. This makes communication easier, brings some sense of comfort among the team, and helps knowledge [tacit] sharing be easy. (ICTP 01)

I think that I probably consciously [metacognitive CQ] tend to understand [cognitive CQ] and slow down [behavioural CQ] when I speak to people from different places, especially those from non-English speaking backgrounds, to ensure that my message is clearly understood and idea [tacit knowledge] is shared. (ICTP 18)

By having cultural awareness [metacognitive CQ] and understanding co-workers [cognitive CQ] in a cross-cultural environment, you can adjust and communicate in a better manner, and it [tacit knowledge] reaches the audience correctly. (ICTP 32)

This indicates that ICT professionals believe that CQ helps them effectively communicate in cross-cultural work settings, which in turn assists them to share tacit knowledge effectively. Thus, this particular CQ outcome can positively influence tacit knowledge sharing in culturally diverse work settings.

Contentedness and bonding (CQ outcome) and tacit knowledge sharing.

As discussed earlier, the ability to exhibit appropriate behaviour in cross-cultural interactions is critical. It helps avoid offending individuals from different cultures; this avoidance can help those from different cultures to feel comfortable (or contented) in their exchanges. Participants noted that they were aware of and understood co-workers' cultures, thereby manifest an adaptiveness that helps them to display appropriate behaviour, both verbal and non-verbal, an avoid offending others. Such endeavours engender a sense of contentedness and bonding among those from different cultural backgrounds. These twin outcomes enhance ICT professionals' desire to share tacit knowledge. The following quotations illustrate this point.

When you are aware and understand your co-worker [from a different cultural background], you can interact confidently with them. Then you can ensure that you are not offending anyone. This earns you respect and provides comfort to other persons involved in sharing knowledge. It will make the work [tacit knowledge sharing] easier. (ICTP 25)

When it comes to employees from foreign cultures, they will consider each expression on your face and will notice everything; therefore, we have to be thoughtful. If we offend, then knowledge sharing will be hampered. So, we need to understand and adjust to suit the environment, so that they will have a sense of comfort, which can make the sharing effective. (ICTP 31)

I don't encourage anyone coming in to give me a handshake or hug, as it is not allowed in our culture. I am a woman who wears a scarf at work. We still have many informal meetings or drinks after-work drinks together and stuff like that. I will definitely join them. But they all know that I don't drink, and they accommodate me in a different way to make sure that I have something that I can eat, and drink, and things like that. So, I think that's definitely helped my interaction with them. I feel very comfortable and pleased. The comfort in the team has helped me to move easily and share my ideas [tacit knowledge] more. (ICTP 21)

ICTP 21 indicated that team members' awareness of her culture (metacognitive CQ), understanding of her values and beliefs (cognitive CQ), interest in interacting with her (motivational CQ), and adjustment of their behaviour to suit her beliefs (behavioural CQ) all fostered comfort and team bonding; collectively, they increased her willingness to share tacit knowledge with team members. Thus, by possessing and exercising CQ, ICT professionals can establish a sense of contentedness and bonding, which are consider CQ outcomes, and thereby positively influence tacit knowledge sharing in cross-cultural interaction.

Previous studies in the CQ literature have not directly discussed contentedness as a CQ outcome. For example, Bücken et al. (2014) claim that job satisfaction and reduced anxiety in cross-cultural interaction are CQ outcomes, but these two constructs are different from contentedness and bonding. Research has, however, found that feelings of contentedness and bonding lead to effective interaction and motivation for relational support (Dasgupta, Suar & Singh 2013). The effective interaction and contentedness among ICT professionals increase their desire to share tacit knowledge in cross-cultural interactions (Suppiah & Sandhu 2011).

Enhancement of interpersonal trust (CQ outcome) and tacit knowledge sharing.

Enhancement of interpersonal trust represents ICT professionals' efforts to create a sense of trust among each other through the development of interpersonal relationships and emotional bonding. Indeed, trust is an important factor in tacit knowledge sharing (Borges 2013; Rutten, Franken & Martin 2016; Swift & Hwang 2013). ICT professionals perceived that through cultural awareness, understanding of one other's cultural norms and practices, and adjustment of their behaviour, trust was increased. The quotations below highlight this view.

You need to be aware and understand the other culture [cognitive CQ] and adjust your behaviour to avoid offending other [from a different cultural background]; if you do, it creates a bond and gradually develops trust. Building trust is very important for sharing tacit knowledge. You can't build trust if you don't understand the culture. (ICTP 11)

I think it's important that we should be mindful and understand everyone's cultural background [cognitive CQ], especially when sharing knowledge [tacit]. I think it definitely creates good bonding. It is important to build trust between co-workers. It makes knowledge sharing easier. (ICTP 02)

The above statements reflect that trust is an important factor in tacit knowledge sharing among ICT professionals in culturally diverse work settings. The present study's results are consistent with those reported by Day (2017): CQ can enhance trust among individuals in cross-cultural interactions. Moreover, previous research (Boh, Nguyen & Xu 2013; Chua, Morris & Mor 2012; Holste & Fields 2010; Kucharska 2017) has also emphasised that trust augments tacit knowledge sharing. ICT professionals' perceptions provide empirical evidence to support the assumption that CQ outcomes influence tacit knowledge sharing. As such, the present investigation advances knowledge in the context of Australian ICT professionals.

Socialising (CQ outcome) and tacit knowledge sharing.

ICT professionals perceived that their motivation to learn and interact with other ICT professionals from different cultural backgrounds, their awareness of co-workers' cultural differences, understanding of other cultures, and adjustments to suit the cross-cultural interaction help them improve their social interaction. Such improvement supports socialising with team members. The following quotations

illustrate how ICT professionals' CQ helps them socialise in a cross-cultural work setting and thus supports tacit knowledge sharing.

Motivation to interact with a different cultural co-worker can foster socialising and information [tacit knowledge] sharing during the social time together. (ICTP 15)

You should be mindful in cross-cultural interaction and try to understand others. You have to be a good listener. So, people would have a different experience. So, they allow you to listen to the experience and culture and socialise; therefore, I think that listening plays a key role. If you are motivated to know other's cultures, you will listen; doing so will help to socialise more, and sharing [tacit knowledge] will be easy, as you can be a good friend with any person from another culture. (ICTP 24)

When you get that kind of motivation to interact with others from different cultures and understand them, it makes your relationship go better, and you have a comfortable rapport to deal with them. You will socialise more easily and share your ideas [tacit knowledge] comfortably. (ICTP 34)

ICT professionals' perceptions that CQ can enhance socialising are consistent with the findings of Chua, Morris and Mor (2012) and Rockstuhl et al. (2011), who report social interaction as an outcome of possessing CQ. Somewhat relatedly, Dreyer and Wynn (2016), Fullwood, Rowley and Delbridge (2013), Ryan and Connor (2013), and Titi Amayah (2013) find that social interaction is a means of sharing tacit knowledge. This is because ICT professionals' social interaction creates a comfortable environment that augments their willingness to share tacit knowledge (Borges 2013). However, while the previous studies reported that CQ increases social interaction, they did not empirically examine the relationship between the CQ outcome of socialising and tacit knowledge sharing. The current study's findings indicate that CQ heightens ICT professionals' socialising in a culturally diverse work setting, which, in turn, elevates the willingness of ICT professionals to share tacit knowledge.

In summary, ICT professionals' perceived that possessing CQ *engenders effective communication, contentedness and bonding, enhancement of interpersonal trust, and socialisation* with other ICT professionals in a culturally diverse work setting, which thus aids them in facilitating tacit knowledge sharing. The findings confirm the theoretical assumption proposed in the literature review chapter.

4.8 Conceptual Framework

The analysis in Section 4.7 showed how four CQ components and their sub-dimensions (discussed in Sections 4.3, 4.4, 4.5 and 4.6) play an important role in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. Based on the findings, a conceptual framework was created, as shown in Figure 4.2. This conceptual framework helps ICT professionals and ICT organisations visualise how they can use CQ components in facilitating tacit knowledge sharing in culturally diverse work settings.

The conceptual framework illustrates the role of metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ in facilitating tacit knowledge sharing. Each element of the conceptual framework, including the relationships between them, is explained below. The green shaded areas in the figure represent the culturally diverse work setting.

First, the four CQ components are shown under the CQ components frame, with each of the sub-dimensions that emerged from the interview data shown inside their respective CQ component frame. For example, ICT professionals' metacognitive CQ is expressed through four sub-dimensions: identifying co-workers' cultural background, consciously planning prior to cross-cultural interaction, using previous cross-cultural interaction experience, and assessing the selected plan. ICT professionals' cognitive CQ is reflected in its three sub-dimensions of understanding co-workers' cultural behaviour, understanding co-workers' national culture, and understanding co-workers' religious beliefs and customs. Similarly, motivational CQ and behavioural CQ are depicted with their respective three sub-dimension in their respective frames. As discussed in Section 4.7, metacognitive CQ, cognitive CQ and motivational CQ are interrelated, which is noted by a brown-coloured arrow in Figure 4.2. Moreover, metacognitive CQ, cognitive CQ and motivational CQ are considered as antecedent to behavioural CQ, as discussed in Section 4.7. Accordingly, this is portrayed in Figure 4.2 with a blue-coloured arrow from metacognitive CQ, cognitive CQ and motivational CQ to behavioural CQ.

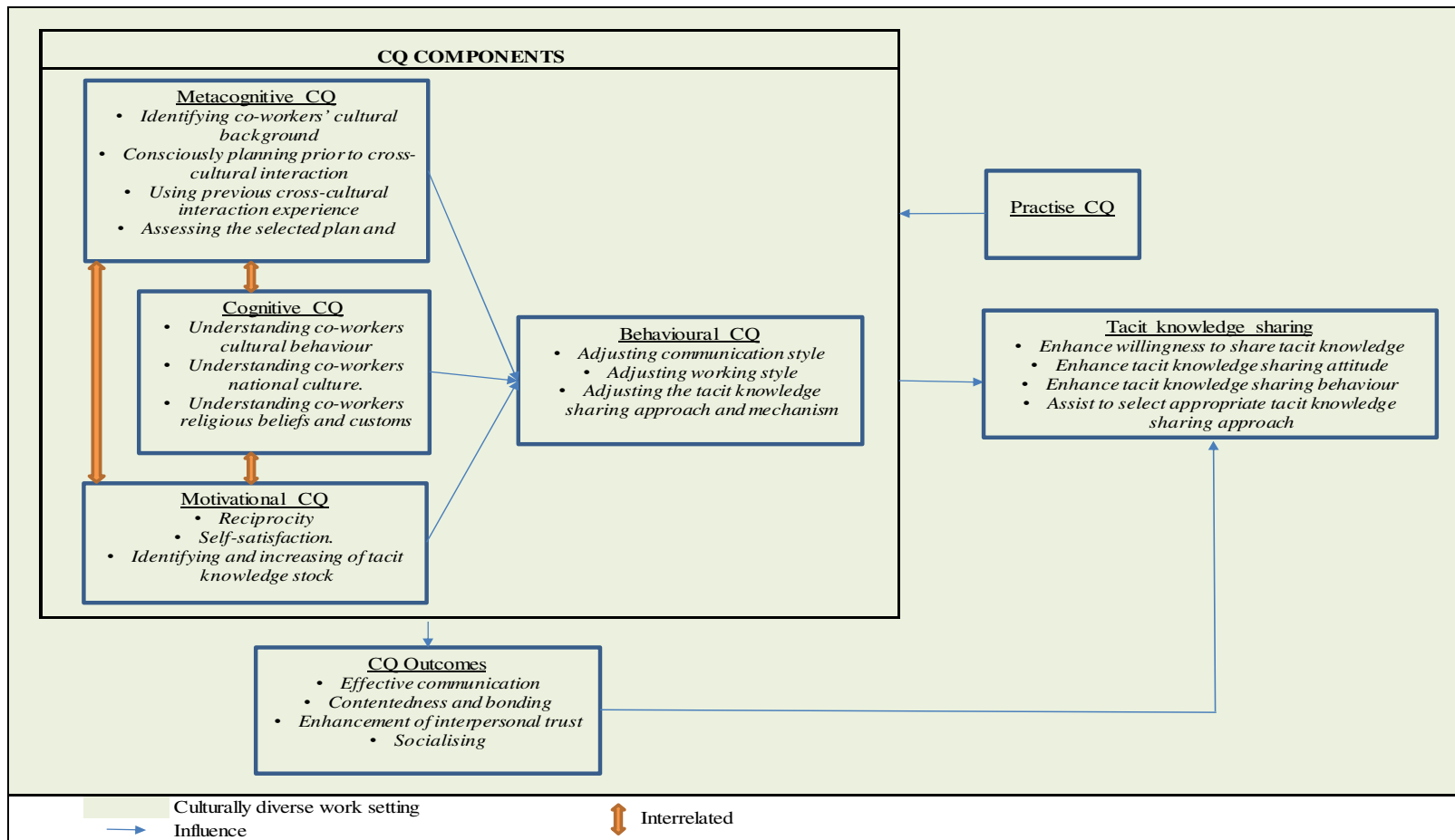


Figure 4.2. Conceptual framework.

The element outside the CQ components box in Figure 4.2 is practising CQ. Practising CQ plays an important role in increasing ICT professionals' CQ and converting it into habitual behaviour in cross-cultural interaction, as discussed in Section 4.7. Practising CQ can assist ICT professionals in sharing tacit knowledge in a cross-cultural work setting innately, as it becomes internalised while interacting with those from different culture and sharing tacit knowledge.

Another element under the CQ components box in Figure 4.2 is CQ outcomes. CQ outcomes are represented by four outcomes: effective communication, contentedness and bonding, enhancement of interpersonal trust, and socialising, as discussed in Section 4.7.2. The CQ outcomes frame is linked by using a blue-coloured arrow in the figure to the tacit knowledge sharing frame.

One final element outside the CQ components is tacit knowledge sharing. There are four sub-dimensions noted in these elements: enhance willingness to share tacit knowledge, enhance tacit knowledge sharing attitude, enhance tacit knowledge sharing behaviour, and assist in selecting the appropriate sharing approach. Shown in Figure 4.2 is how CQ components assist ICT professionals and induce them to share their tacit knowledge in cross-cultural interaction.

The framework can be explained with an example. ICT professionals' metacognitive CQ enables them to be aware of cultural differences while sharing tacit knowledge with a co-worker from a different culture and thus plan their tacit knowledge sharing approach accordingly. Then, ICT professionals' motivational CQ impels them to augment their interaction with their co-worker to increase their knowledge stock; this enhances their willingness to share tacit knowledge. ICT professionals' cognitive CQ allows them to understand the co-worker's culture, which assists them in developing appropriate tacit knowledge sharing behaviour. When ICT professionals apply all three CQ components in their cross-cultural adaption (behavioural CQ), it enhances their tacit knowledge sharing attitude. By practising this regularly, ICT professionals should be able to strengthen their CQ level, and tacit knowledge sharing in a cross-cultural work setting can transpire innately.

The current study's proposed framework is new to the CQ and knowledge management literature. Researchers such as Ali et al. (2019), Alidoust and Homaei (2010), Al Mousa and Jones (2006), Chen and Lin (2013), Ismail et al. (2016) and

Vlajcic et al. (2019), have discussed the relationship between CQ and knowledge sharing. Of these five studies, only Al Mousa and Jones (2006) attempt to develop a framework for a holistic, diverse knowledge sharing strategy to maximise knowledge sharing. The other three studies were empirical but focused on finding a relationship between CQ and knowledge sharing. Moreover, Al Mousa and Jones's (2006) work was theoretical, not empirical; additionally, they centre on diversity, human resources management and training, with minimal explanation of the utilisation of CQ. Although they recommend CQ as an element of the organisational training required for knowledge sharing, they consider only three of the four CQ components: cognitive CQ, motivational CQ and behavioural CQ. Thus, the present empirical undertaking differs markedly from Al Mousa and Jones's efforts, as the current endeavour explored all four CQ components' role in facilitating tacit knowledge. Furthermore, Alidoust and Homaei (2010) and Chen and Lin (2013) argue that metacognitive CQ is the most influential factor for knowledge sharing. However, ICT professionals' perceptions in the current empiricism suggested that all four are of equal importance in facilitating tacit knowledge sharing.

The current study's proposed framework has several benefits. First, it provides ICT professionals and ICT organisations with enhanced understanding of CQ components' role in facilitating tacit knowledge sharing in culturally diverse work settings. Additionally, this study has emphasised that practising CQ can help ICT professionals to internalise it, and can thereby innately facilitate tacit knowledge sharing in a cross-cultural work setting.

Second, the sub-dimensions of each CQ component related to facilitating tacit knowledge sharing were presented, providing ICT professionals and organisations with an enhanced understanding of the importance of CQ in facilitating tacit knowledge sharing. Third, the interrelationship of all four CQ components was explored in relation to facilitating tacit knowledge sharing. Therefore, practitioners can see the importance of the interrelationship of all four CQ components in facilitating tacit knowledge sharing. Fourth, this study also provided empirical support for the positive influence of CQ outcomes on tacit knowledge sharing. ICT managers can take action to foster these outcomes in their organisations. Finally, this framework emphasises the high importance of the CQ components specifically for ICT professionals and ICT organisations seeking to facilitate tacit knowledge sharing

in culturally diverse work settings. To use the CQ components effectively, ICT professionals and ICT organisations need to understand the role of those components in facilitating tacit knowledge sharing.

To conclude, the conceptual framework summarises the results from an analysis of how CQ components facilitate tacit knowledge sharing in culturally diverse workplaces. Developing ICT professionals' CQ to foster such sharing is crucial for Australia ICT organisations and ICT professionals, given the constant cross-cultural interaction resulting from the high mobility of overseas ICT professionals. These foreign ICT professionals tend to be short-term co-workers brought into Australia to complete particular ICT projects. Nonetheless, they collaborate with local ICT professionals and can share tacit knowledge in a short time period. To address such barriers to such knowledge sharing, this conceptual framework was proposed. It is directed at helping ICT professionals and ICT organisations to enhance their understanding of CQ's role in facilitating tacit knowledge sharing.

4.9 Summary

This chapter discussed the analysis of the data, presented the findings concerning ICT professionals' understanding of tacit knowledge sharing in culturally diverse workplaces and described the role of the four CQ components (metacognitive CQ, cognitive CQ, motivational CQ, and behavioural CQ) in tacit knowledge sharing. First, the chapter summarised the study's findings and presented the three main findings of this study: (1) that CQ components play an important role in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings; (2) that there exist interrelationships among CQ components in facilitating tacit knowledge; and (3) that CQ outcomes have a positive impact in facilitating tacit knowledge sharing. The chapter then explored the role of each CQ component and their respective sub-dimensions in facilitating tacit knowledge sharing in culturally diverse work settings. The findings were proffered vis-à-vis the literature, with the discussion revealing that most of the findings have not been noted in previous knowledge management or CQ literature. Furthermore, the present effort differs from extant work in terms of considering the role of the CQ components in facilitating tacit knowledge sharing among ICT professionals. That issue had not hitherto been adequately addressed in the literature, as mentioned in the literature review.

The current study's provision of empirical evidence supporting the link between CQ and tacit knowledge sharing is another crucial difference from the existing research. Moreover, the present findings confirm certain arguments in the literature regarding the link between CQ and tacit knowledge sharing. Finally, the results led to development of a conceptual framework depicting the role of the CQ components in fostering tacit knowledge sharing among ICT professionals. The next chapter will conclude the thesis.

Chapter 5 Conclusion

5.1 Introduction

The objective of this study was to investigate the role of CQ components in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. The previous chapter provided the results of the data analysis. This chapter concludes the thesis. Conclusions about the research question are discussed in Section 5.2. Section 5.3 presents the contributions of this study, and Section 5.4 explores the practical implications of the investigation. The study's limitations are outlined in Section 5.5, and Section 5.6 concludes with directions for future research. Shown in Figure 5.1 is an overview of this chapter.

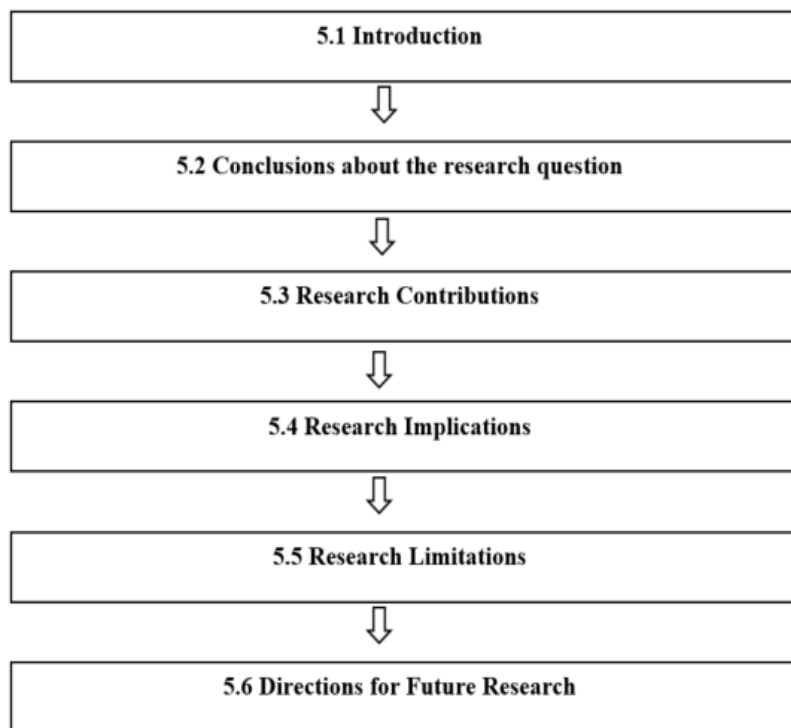


Figure 5.1. Chapter 5 overview.

5.2 Conclusions Concerning the Research Question

This study addressed and answered the following main research question and sub-questions by analysing 36 semi-structured interviews conducted with ICT professionals working in Australia.

Main research question:

What role does CQ play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?

Sub-questions:

- *What role does each of the four CQ components (metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ) play in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*
- *How are the four CQ components interrelated in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia?*

The major findings of the study were that the CQ components (i.e., metacognitive CQ, cognitive CQ, motivational CQ and behavioural CQ) were all critical in facilitating tacit knowledge sharing among ICT professionals working in a culturally diverse workplace. Previous literature suggested that there was a relationship between CQ and knowledge sharing (Ali et al. 2019; Al Mousa & Jones 2006; Chen & Lin 2013; Ismail 2015; Ismail et al. 2016; Vlajcic et al. 2019). Based on the previous literature discussed in Chapter 2, the potential role of CQ in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace is sustained. The current exploratory investigation, using semi-structured interviews with 36 ICT professionals working in Australia in culturally diverse work settings, reached three main findings which involved 13 sub-dimensions, including four for metacognitive CQ, three for cognitive CQ, three for motivational CQ and three for behavioural CQ. Table 5.1 shows the sub-dimensions of each CQ component.

The first main finding was that the four CQ components individually play important roles in facilitating tacit knowledge sharing through their respective sub-dimensions.

From the interview data, evidence emerged that metacognitive CQ helps in developing the ability of Australian ICT professionals to select appropriate tacit knowledge sharing approaches. Cognitive CQ helps ICT professionals enhance their tacit knowledge sharing intention and behaviour. Motivational CQ drives ICT professionals to increase their willingness to share tacit knowledge in cross-cultural work settings. Finally, behavioural CQ assists in developing a positive attitude among ICT professionals towards sharing their tacit knowledge. Thus, this study suggests that all four CQ components assist ICT professionals in facilitating tacit knowledge sharing in culturally diverse Australian work settings.

Table 5.1. Sub-dimensions of CQ components

| CQ component | Sub-dimensions |
|---------------------|--|
| Metacognitive CQ | Identifying co-workers' cultural background |
| | Consciously planning prior to cross-cultural interaction |
| | Using previous cross-cultural interaction experience |
| | Assessing the selected plan and approach |
| Cognitive CQ | Understanding co-workers cultural behaviour |
| | Understanding co-workers national culture |
| | Understanding co-workers religious beliefs and custom |
| Motivational CQ | Reciprocity |
| | Self-satisfaction |
| | Identification and increasing of tacit knowledge stock |
| Behavioural CQ | Adjusting communication style |
| | Adjusting working style |
| | Adjusting the tacit knowledge sharing approach and mechanism |

(Source: Developed for the study)

A second major finding is that all four CQ components are interrelated and work with each other synergistically in facilitating tacit knowledge sharing. This study found that the interrelationship of these four components creates a good work relationship, bonding, and ICT professionals' willingness to share their tacit knowledge in a cross-cultural work setting. Moreover, the interrelationship of these four CQ components helps in facilitating tacit knowledge sharing among ICT professionals in cross-cultural Australian work settings. Furthermore, the results also revealed the importance of practising CQ, as doing so aids ICT professionals in facilitating tacit knowledge sharing. Through its findings, the investigation led to development of a conceptual framework that can help ICT professionals recognise the importance of all four of the CQ components and utilise them to foster tacit knowledge sharing in a culturally diverse work setting.

The third major finding lends empirical support to the theoretical assumption of a link between tacit knowledge sharing and CQ outcomes. Results revealed that tacit knowledge sharing in cross-cultural work settings is related to four CQ outcomes (effective communication, contentedness and bonding, enhancement of interpersonal trust, and socialising). Through the above three findings, this study answered the main research question: CQ does play an important role in facilitating tacit knowledge sharing among ICT professionals in a culturally diverse workplace in Australia.

5.3 Research Contributions

This section provides an overview of this research's contributions to the knowledge base. This study made several research contributions – specifically, a theoretical contribution to the two domains of CQ and knowledge management, as explained below.

First, the research addresses the knowledge gap raised in the literature review (Chapter 2). Previous studies have examined the relationship between CQ and knowledge sharing (e.g., Ali et al. 2019; Alidoust & Homaei 2010; Al Mousa & Jones 2006; Chen & Lin 2013; Ismail et al. 2016; Vlajcic et al. 2019). Nevertheless, there has been a lack of research exploring the role of CQ components in facilitating tacit knowledge sharing among ICT professionals *exclusively*. Indeed, Ali et al. (2019) and Vlajcic et al. (2019) emphasise the knowledge gap when exploring the role of

CQ in tacit knowledge sharing. The present study has addressed this lacuna. Consistent with extant work, this investigation theorised that there was a relationship between CQ and knowledge sharing, and specifically *tacit* knowledge sharing. However, compared to previous research, the current study not only supported its arguments with empirical data but also identified the role of each CQ component in facilitating tacit knowledge sharing among ICT professionals. It therefore fills an important gap in the literature and shows the role of the four CQ components and their 13 sub-dimensions. As far the researcher is aware, this undertaking is the first empirical endeavour to addresses this knowledge gap in the CQ and knowledge management literature.

Previous work has discussed the sub-dimensions of each CQ component (e.g., Gregory, Prifling & Beck 2009; Van Dyne et al. 2012). Van Dyne et al. (2012) expand on Earley and Ang (2003) by exploring the four CQ components and deriving 11 sub-dimensions of CQ (as discussed in Chapter 2). However, Van Dyne et al. (2012) did not relate the sub-dimensions of all four CQ components to tacit knowledge sharing. Likewise, Gregory, Prifling and Beck (2009) extended Earley and Ang's (2003) four CQ components and presented 10 sub-dimensions related to the emergence of a negotiated culture. As far as the researcher is aware, none of these previous explorations presented the sub-dimensions of the four CQ components with regards to facilitating tacit knowledge sharing among ICT professionals (as discussed in Chapter 4). Thus, the present effort extends the four CQ components by revealing 13 sub-dimensions that help facilitate tacit knowledge sharing.

Second, this study discussed the interrelationship between CQ components facilitating tacit knowledge sharing among ICT professionals. In particular, as far the researcher is aware, this is the first empirical study to analyse the interrelationship among the four CQ components in facilitating tacit knowledge sharing among ICT professionals in culturally diverse Australian work settings and to propose a conceptual framework. Previous CQ frameworks proposed by Earley and Ang (2003) and Van Dye et al. (2012) did not address the relationship between the four CQ components or their role in tacit knowledge sharing among ICT professionals. This study adds to previous literature by extending the original CQ framework proposed by Earley and Ang (2003) to make the connection between CQ and tacit knowledge sharing, and also extends the discipline boundary to Australian culturally diverse ICT

workplaces. Indeed, through the conceptual framework (shown in Figure 4.2) this study enhances understanding of the role of CQ's components, their importance, and their interrelationship in facilitating tacit knowledge sharing among ICT professionals.

Third, the current undertaking augments awareness of the important role of the CQ components in facilitating tacit knowledge sharing among ICT professionals in culturally diverse work settings. This is especially important for ICT professionals and ICT organisations, as they face challenges in sharing tacit knowledge due to their culturally diverse work settings; that milieu is seemingly inevitable and enduring. Australian ICT workplaces are increasingly reliant on temporary overseas skilled ICT professionals; this phenomenon results in high mobility of ICT professionals from different cultural backgrounds. The short-term employment situation makes sharing tacit knowledge among ICT professionals in a short time period crucial. Additionally, there is pressure in the ICT sector to deliver ICT products and services to customers expeditiously (Sarkar 2017; Shah 2012). Thus, understanding how CQ's role in facilitating tacit knowledge sharing in culturally diverse work settings can assist ICT professionals and ICT organisation in implementing a management policy or developing a training program to enhance ICT professionals CQ ability is crucial. The proposed conceptual framework can assist ICT professionals and ICT organisations in comprehending the role of each CQ component, as well as its interrelationships, in facilitating tacit knowledge sharing in cross-cultural work settings.

5.4 Research Implications

The findings from this study are of importance to both ICT professionals and ICT organisations. This study established a critical linkage between CQ and tacit knowledge dissemination among ICT professionals. It provided an understanding of the role of CQ components and their interrelationship between the CQ components in facilitating tacit knowledge sharing. Accordingly, there are several implications for the ICT industry.

ICT professionals should exchange crucial tacit knowledge that is necessary to obtain a competitive advantage. However, tacit knowledge sharing can be hindered in culturally diverse workplaces owing to cultural differences between ICT

professionals. ICT practitioners can use the conceptual framework of this study to enhance effective tacit knowledge sharing among ICT professionals in culturally diverse work settings. As the findings of this investigation revealed, CQ plays an important role in facilitating tacit knowledge. Therefore, ICT professionals and ICT organisations should implement employee and organisational development policies that include learning and practising CQ.

Research has found that CQ can be cultivated, with learning falling into three categories: cultural exposure, international experience and training programs (Crowne 2013; Ng, Van Dyne, & Ang 2009). According to MacNab (2011), individual CQ levels vary based on individuals' experience, education, exposure and personality. Appendix B lists platforms that discussed in the literature for developing individual CQ. ICT organisations could select one of these platforms develop their ICT professionals' CQ.

The study's conceptual framework noted the importance of ICT professionals practising CQ. Practising CQ can assist ICT professionals in becoming habitual exercisers of CQ and increase their effectiveness in cross-cultural interaction while sharing tacit knowledge. As noted earlier, Australian ICT organisations rely on foreign ICT professionals from different cultural backgrounds. These individuals tend to visit for temporary assignments and then leave Australia once the task is completed. As such, expediting the transfer of tacit knowledge to develop innovative ICT products and services while these overseas ICT professionals are in Australia is imperative. If ICT professionals practise and internalise CQ, it can become relatively easy to share tacit knowledge in a short time period. After all, CQ components play an important role in facilitating tacit knowledge sharing in a culturally diverse workplace. Therefore, ICT organisations should support ICT professionals in developing their CQ, and ICT professionals should be encouraged to practise CQ.

The findings and conceptual framework could be used as an educational resource for ICT professionals needing to share tacit knowledge in culturally diverse workplaces. The current work may assist ICT professionals by providing an invaluable lens through which they can understand the scope and the impact of CQ and tacit knowledge sharing within their organisation. Because tacit knowledge is crucial to ICT organisational success, improved understanding of the role of CQ components

in facilitating tacit knowledge sharing is likely to enhance ICT organisational effectiveness and competitiveness.

Furthermore, this research could influence management practices to develop and utilise CQ in tacit knowledge dissemination among ICT professionals. The current study opened a new discussion regarding the value of CQ related to tacit knowledge sharing. Conceivably, it may also have relevance to human resource management and strategy management.

Finally, the findings of the investigation might be useful for other types of organisations with culturally diverse workplaces where facilitating tacit knowledge sharing among employees is important. Practitioners may find that the results of this study and their attendant managerial implications may well be applicable in other contexts.

5.5 Research Limitations

This study has some important limitations. First, it focuses solely on ICT firms in Australia and employed a relatively small number (36) of participants. Thus, the findings may not be generalisable to other geographical areas or to the population at large. However, all participants worked in culturally diverse work settings and had extensive experience in the ICT field. Thus, their views still provided insights into how ICT professionals perceive CQ and tacit knowledge sharing. In addition, the richness of information gained from in-depth interviews may have helped offset the effect of the small sample.

Second, the study used semi-structured interviews to obtain participants' perceptions and experiences to understand the role of CQ in facilitating tacit knowledge sharing among ICT professionals. Participants' nationalities and cultural backgrounds may have affected those perceptions and their responses. Third, while the participants were from 11 different countries, the researcher was unable to obtain participants having a European or American background, as most of the skilled immigrants in Australia's ICT sector are from Asian countries. Interviewing ICT professionals from Europe or America may have led to different findings. Participants did however routinely interact with ICT professionals from Europe and America, which may have mitigated this limitation.

5.6 Directions for Future Research

The researcher acknowledges the need for further research in the area. First, as the current study was conducted solely in Australia, research should be conducted in other countries, particularly countries such as India, China and the Philippines, which provide most international ICT professionals. Second, undertaking a case study might be beneficial in future research, the results of which can be compared with those obtained here.

Third, further research could categorise participants based on cultural background and perform a comparative study exploring the role of CQ in facilitating tacit knowledge sharing in relation to background.

Fourth, this research used qualitative methods; future studies could conduct quantitative research to validate the framework and ascertain the generalisability of the findings of this study. Fifth, researchers could investigate whether CQ should be incorporated into universities' ICT curriculum, given that it is an important skill in today's culturally diverse work settings. Finally, a future study could examine how ICT professionals working in culturally diverse workplaces develop their CQ skills. Hopefully, the foregoing research avenues will enhance understanding about the beneficial impact of CQ on sharing tacit knowledge to achieve competitive advantage.

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Appendices

Appendix A: CQ outcomes

Appendix B: Developing CQ

Appendix C: Interview guide

Appendix D: Participant information sheet

Appendix E: Participant consent form

Appendix F: Snapshot of codes and themes

Appendix A: CQ outcomes

| Author | Year | Study focus | Study result |
|-------------------------------|------|--|---|
| Vlajcic et al. | 2019 | This study analyses the relationship of CQ of expatriate managers and knowledge transfer in multinational companies | The study reveals there is a relationship between CQ and knowledge transfer. The high CQ level of expatriate managers increase the knowledge transfer. |
| Hu, Wu & Gu | 2019 | Examine the relationship between CQ and employees creative performance | Results confirmed a positive relationship between employees' cultural intelligence and their creative performance |
| Charoensukmongkol | 2019 | This research investigates the contribution of CQ in adaptive selling behaviours and international sales performance | The results from the partial least squares regression analysis revealed a significant positive relationship between CQ and adaptive selling behaviours. |
| Kubicek, Bhanugopan & O'Neill | 2019 | The current study examines cross-cultural role conflict, ambiguity and overload – the three role stressors – as mediators of the relationship between CQ and organisational culture. | Found that cross-cultural role conflict, ambiguity and overload partially mediate the relationship between CQ and organisational culture. |
| Afsar et al. | 2019 | This study evaluates the mediating effect of transformational leadership in the relationship between CQ and voice behaviour. | The results show that non-national employees with a higher level of CQ are more likely to display voice behaviours. |
| Jyoti,Pereira &Kour | 2019 | The study aims at analysing the moderating role played by work experience between CQ and cross-cultural adjustment (CCA) relationship. | The result reveals that work experience moderates between CQ and CCA. The findings further reveal that CCA mediate between CQ and knowledge sharing relationship. |

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|------------------------|------|--|--|
| Caputo et al. | 2019 | This study examines the influence of CQ on the relationship between cultural values and the individual preferences for a given negotiation style | The results show that cultural values (e.g. power distance, uncertainty avoidance, collectivism and masculinity) have a direct influence on negotiation styles as well as an indirect effect, which is mediated through cultural intelligence. |
| Ali et al. | 2019 | This study examine the relationship between CQ and team creativity | The study found that an expatriates CQ can moderates the relationship between knowledge sharing and team creativity. |
| Day | 2017 | The purpose of the study is to find how the past cultural knowledge of an individual plays a role in developing CQ | The findings suggested that human capital departments in global organisations can improve their employee's motivation to adapt their behaviours in cross-cultural interactions. This can be accomplished through the proper selection of employees, matched with trusted, purpose-driven managers and effective CQ training. |
| Lima, West, & Winston | 2016 | Building a conceptual model to measure CQ at organisation level | Found five-factor measure provides organisations and researchers a tool for assessing CQ at the organisational level. |
| Ott & Michailova | 2016 | Examine the CQ development and CQ outcome with international experience | Proposed new research avenues |
| Li et al. | 2016 | This study examine the effects of CQ on its global virtual collaboration processes | The results indicate that cultural intelligence has an effect on global virtual collaboration |
| Fard et al. | 2015 | Examine the relationship between problem solving and CQ | Found that there is a significant correlation between CQ (metacognitive, cognitive, incentive, and behavioural) with problem-solving process. |
| Gudmundsdottir | 2015 | Examine the relationship between Cross-cultural adjustment and CQ | Found that the greater the general adjustment is related to greatest metacognitive and motivational CQ factor, increased level of interaction adjustment associated with greater metacognitive and motivational CQ and work adjustment related to metacognitive CQ. |
| Tuleja | 2015 | Developing CQ through cross-cultural immersion program | Found that, overall, students increased their level of "mindfulness" and became more reflective, and more culturally sensitive as a result of this cross-cultural immersion program. |
| Groves, Feyerherm & Gu | 2015 | Analysis the relationship between CQ and negotiation performance | Found that CQ is strongly associated with negotiation performance outcomes, while behaviours partially mediate the relationship between CQ and negotiation performance. |

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|-----------------------------|------|---|---|
| Peng & VanDyne | 2014 | Examine the CQ impact on international work experience | Found that motivational CQ is positively associated with cultural well-being and suitability of overseas work. |
| Huff, Song & Gresch | 2014 | Examine the CQ impact on expatriate adjustment | Found that motivational CQ is important for expatriate adjustment in cross-cultural settings. |
| Bücker et al | 2014 | Examine the influence of CQ on cross-cultural communication effectiveness | Found that CQ plays an important role in reducing anxiety and influencing both communication effectiveness and job satisfaction positively. |
| Ersoy | 2014 | Examine the CQ role in cross-cultural leadership effectiveness | This study confirms that expatriate leaders' CQ positively impacts their cross-cultural leadership effectiveness. |
| Chen & Lin | 2013 | Assessing the effect of CQ on team knowledge sharing | Found that knowledge sharing influenced by metacognitive, cognitive, and motivational CQ. At the same time, knowledge sharing is indirectly impacted by metacognitive and behavioural cultural intelligence through the mediation of perceived team efficacy. |
| Adair, Hideg & Spence | 2013 | Assessing the effect of CQ on cross-cultural team | Found that behavioural and metacognitive CQ had a positive effect on shared values in culturally heterogeneous teams; however, motivational and metacognitive CQ had a negative effect on shared values in culturally homogeneous teams. |
| Michelle Stokes | 2013 | Examine the influence of CQ on transformational global leadership | Found that metacognitive CQ made the strongest unique contribution to the transformational leadership models with a Beta value of .53. |
| Isfahani, Jooneghani & Azar | 2013 | Examine the relationship between CQ and employee performance | Found the meaningful relationship between CQ & its aspects with employee performance. In this CQ motivational aspect has the highest effect on employee performance. |
| Malek & Budhwar | 2013 | Examine the linkage between CQ, expatriate adjustment to the host country's environment and expatriate performance while on international assignments | Found a direct influence of expatriates' CQ on general, interaction and work adjustments. This improved adjustment has a positive effect on expatriate performance. |
| Collin & Kriz | 2013 | Examine the relationship between CQ and open innovation | The study found that CQ enhance open innovation alliance effectiveness. |

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|-----------------------------|------|---|--|
| Malik, Thomas & Zikic | 2013 | Investigated the role of CQ in contributing to the socialisation of recent immigrant newcomers. | Found that CQ can enhance immigrant newcomers' performance and social integration during socialisation. |
| Magnusson et al. | 2013 | Examine export manager CQ relationship between marketing-mix adaptation and export performance | Found that CQ positively moderates the relationship between marketing-mix adaptations and export performance. |
| Enayati, Lari & Hosseinpour | 2013 | This study investigates the relation between CQ and the two variables, transformational and transactional leadership styles | This study found that there is a positive and significant relation between transformational and transactional leadership styles and CQ. |
| Ismail, Reza, & Mahdi | 2012 | Examine the influence of CQ on global leadership | Positive relationship between cultural intelligence and transformational leadership. CQ is the basic factor for transformational leadership. |
| Kim & Van Dyne | 2012 | Examine the influence of CQ on international leadership | CQ mediates the effects of prior intercultural contact on international leadership potential. |
| Ang & Chuan Wu | 2011 | Examine the CQ impact on expatriate performance | Found that metacognitive and cognitive CQ negatively moderated the links between expatriate supporting practices and adjustment, while motivational CQ had a positive moderating effect. |
| Lovvorn & Chen | 2011 | Examine the relationship between CQ and international assignment success | CQ play an important role in the transformation of the international experience into a global mindset. |
| Rockstuhl et al. | 2011 | Analysis the effect of CQ on global leadership competency | The results show the value of CQ as a critical leadership competency in today's globalized world. |
| Chua, Morris & Mor | 2011 | Analysis the effect of CQ on affect-based trust and creative collaboration | The study found that the effects of metacognitive CQ in enhancing collaboration were mediated by affect-based trust. |
| Ramalu et al. | 2010 | Examine the CQ impact on general adjustment in cross-cultural interaction | The result of this study reveals that greater general adjustment is related to greater motivational and metacognitive CQ. |
| Alidoust & Homaei | 2010 | Analysis the relationship between CQ and knowledge management | Found that there is a significant relationship between CQ and knowledge management |

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|---------------------|------|---|--|
| Ng, Van Dyne, & Ang | 2009 | Examine the influence of CQ on global leadership | Found a model suggests that CQ is an important set of learning capabilities that allows global leaders to benefit developmentally from their experiences by facilitating active involvement in all four sages of the ELT cycle during international assignments. |
| Ang, Joseph & Koh | 2009 | Analysis the effect of CQ on global leadership and team performance | Proposed CQ as an important individual capability for IT professionals to function effectively in this global context. Specifically, how CQ can improve five core competencies required for global team effectiveness. |
| Elenkov & Manev | 2009 | Examine the role of CQ in senior expatriate leadership | CQ moderates the effect of senior expatriates' leadership on organisational innovation, but not on product-market innovation. |
| Deng & Gibson | 2008 | Examine the role of CQ in cross-cultural leadership effectiveness | This study confirms that expatriate leaders' CQ can positively impact their cross-cultural leadership effectiveness. |
| Alon & Higgins | 2005 | Importance of CQ for global leadership success | Found that CQ is an important competency for global leadership success |

(Source: Developed for this study)

Appendix B: Developing CQ

| Group | Platforms | Author | Year | Findings Study participants | Not Increased = x, Increased = ✓ | | | |
|--------------------------------|--|--------------------|------|---------------------------------------|----------------------------------|--------------|-----------------|----------------|
| | | | | | Metacognitive CQ | Cognitive CQ | Motivational CQ | Behavioural CQ |
| Type of Training and Education | Cross-cultural training | Bücker & Korzilius | 2015 | 66 students | ✓ | × | ✓ | ✓ |
| | Academic cross-cultural management course | Eisenberg et al. | 2013 | 289 students | ✓ | ✓ | ✓ | ✓ |
| | Short-term international experience | Engle & Crowne | 2014 | 135 students | ✓ | ✓ | ✓ | ✓ |
| | Cross-cultural education (Class room as well as hands on experience with multicultural team) | Erez et al. | 2013 | 1221 students | ✓ | ✓ | ✓ | ✓ |
| | Four weeks cross-cultural training with six lectures | Fischer | 2011 | 107 students | × | × | × | ✓ |
| | Experiential education | MacNab | 2011 | 743 management education participants | ✓ | × | ✓ | × |
| | Pre-departure cross cultural training | Moon, Choi & Jung | 2012 | 190 Korean expatriates | × | ✓ | ✓ | ✓ |

| | | | | | | | | |
|---------------------------------------|---|---------------------|------|--|---------------|---------------|---------------|---------------|
| Type of Training and Education | Lecture format training | Regh et al. | 2012 | 110 US government contracting trainees | Not discussed | ✓ | × | ✓ |
| | Experiential education | Rosenblatt et al. | 2013 | 212 Management students | × | ✓ | ✓ | × |
| | Cultural Immersion/Pre-departure session | Tuleja | 2014 | 71 students | ✓ | Not discussed | Not discussed | Not discussed |
| | Short-term cross-cultural study tour | Wood & Peters | 2014 | 42 MBA students | ✓ | ✓ | ✓ | × |
| International Experience | International experience | MacNab & Worthley | 2012 | 370 Managers and Management students | ✓ | Not discussed | ✓ | ✓ |
| | International experience | Lovvorn & Chen | 2011 | Review paper | Not discussed | ✓ | ✓ | ✓ |
| | International non-work experience | Moon, Choi and Jung | 2012 | 190 Korean expatriates | Not discussed | ✓ | Not discussed | Not discussed |

| | | | | | | | | |
|---------------------------------|--|------------------------|------|--|---------------|---------------|---------------|---------------|
| International Experience | International work experience | Li, Mobley & Kelly | 2013 | 294 International executives and business students | ✓ | ✓ | ✓ | ✓ |
| | 6 months international assignment | Şahin, Gurbuz & Köksal | 2014 | 145 Military personnel | ✓ | Not discussed | Not discussed | ✓ |
| | 6 months international assignment | Şahin, Gurbuz & Köksal | 2014 | 145 Military personnel | Not discussed | Not discussed | ✓ | Not discussed |
| | International experience through studying abroad | Varela & Gatlin watts | 2014 | 84 Business students | ✓ | ✓ | Not discussed | Not discussed |
| Cultural Exposure | Length and depth of cultural exposure | Crowne | 2013 | 485 students from large University | ✓ | ✓ | ✓ | ✓ |
| | Cultural exposure because of education abroad | Crowne | 2008 | 140 participants survey | Not discussed | ✓ | ✓ | ✓ |
| | Cultural exposure because of employment abroad | Crowne | 2008 | 140 participants survey | ✓ | Not discussed | Not discussed | Not discussed |
| | Depth of cultural exposure because visited more countries | Crowne | 2008 | 140 participants survey | ✓ | ✓ | Not discussed | ✓ |

Appendix C: Interview guide

Introductory Questions

1. Can you please tell me a little bit about your job?
2. How long have you been working in your ICT field?
3. Whom you interact the most in your work and is their cultural background is the same as you or different? How often you interact with them?

Questions on Tacit knowledge

4. How do you define tacit knowledge in ICT?
5. How vital are tacit knowledge to you and your role and why?
6. How do you share your tacit knowledge with other ICT professionals?
7. How would you share tacit knowledge with your co-workers from a different cultural background?
8. What motivates you to share your tacit knowledge with other ICT professionals?
9. Would you do anything differently when sharing tacit knowledge with a different cultural background co-workers? Can you please provide some examples?
10. How do you ensure that your co-worker from a different culture will continue to share their tacit knowledge with you?
11. What may hinder an effective tacit knowledge sharing with different cultural background co-workers? Can you please provide some specific examples?
12. How do you address the challenges you face when sharing tacit knowledge with different cultural background co-workers? Can you please provide some examples?

Questions on Cultural intelligence (CQ) and tacit knowledge sharing

13. When you share your tacit knowledge with co-workers from different cultural background, what are the things you will be doing before, during and after sharing? Can you please share your experience?
14. How do you identify your co-worker's culture when sharing tacit knowledge with them? Why it is important?

15. What role does your understanding of your co-worker's culture play in tacit knowledge sharing? Is it important to understand? How you understand?
16. How your planning and adjusting interaction during your cross-cultural interaction plays a role in tacit knowledge sharing? Why it is important to you?
17. What role does your motivation to understand other culture plays in tacit knowledge sharing?
18. What behaviour change you may adapt when sharing tacit knowledge with your co-worker from a difficult culture? Why is it important to do that? Please provide some examples?
19. Is there anything else you can tell me about your tacit knowledge sharing experience with your colleague from a different cultural background?
20. What recommendation you give for ICT professionals sharing tacit knowledge in a culturally diverse workplace?
21. What kind of training your organisation provide to you to work in a culturally diverse workplace? Please give some examples?
22. What kind of training your organisation provide to you sharing tacit knowledge in a culturally diverse workplace? Please give some examples?
23. What sort of training do you think an organisation should give to their employees to work in a culturally diverse workplace and to enhance tacit knowledge sharing? Why?

Appendix D: Participant information sheet



University of Southern Queensland

PARTICIPANT INFORMATION SHEET

PROJECT DETAILS

The title of Project: The role of cultural intelligence in facilitating tacit knowledge sharing.

RESEARCH TEAM CONTACT DETAILS

| | | | |
|----------------------|---------------------|--|------------|
| Principal Researcher | Mutharasu Murugan | u1064799@umail.usq.edu.au | 0401733899 |
| Research Supervisor | Dr.Eric Kong | Eric.Kong@usq.edu.au | |
| Research Supervisor | Dr.Frances Woodside | Frances.Woodside@usq.edu.au | |

HREC identification number (H16REA217)

DESCRIPTION:

Australia has relied on ICT workers from overseas, resulting in the issue of 15,000 temporary skilled migrant (457) visas in 2017-2018. Thus, the Australia ICT workplace is likely to have a culturally diverse work environment. ICT organisations in Australia are more likely to feature a culturally diverse workplace as more ICT professionals are coming from overseas. Sharing know-how and experience-based knowledge may become a vital challenge for overseas as well as local ICT professionals in Australia due to the culturally diverse workplace. The aim of this research is to explore the ICT professionals' perception towards the skill to adapt effectively to culturally diverse work settings and how these skills can facilitate while sharing job-specific knowledge, know-how, and experience-based knowledge.

PARTICIPATION:

Participants will involve participating in a semi-structured interview. The semi-structured interview will take up to 45 mins to 60 mins and will be audio recorded. The interview will take place at your convenient time in your workplace. Specific interview questions will include your experience and perception of sharing job-specific knowledge and know-how process in culturally diverse work settings. Sample questions are attached. The participation in this research is voluntary, and you may withdraw at any time, without prejudice. You can terminate the audio recording at any time during the interview. You are also able to withdraw partially or completely at any time during this research and may refuse to answer any questions.

EXPECTED BENEFITS:

The findings of this study will be likely to assist ICT organisations to facilitate knowledge sharing process to gain a distinct competitive advantage. It will also support to increase the cultural awareness within the ICT organisation with a culturally diverse workplace.

The findings will be an educational resource for ICT professionals and other employees working in culturally diverse workplaces. The findings of this study will be likely to assist ICT professionals to develop the abilities to work effectively in a culturally diverse workplace and facilitate the knowledge sharing process among the ICT professionals. It will also assist ICT professionals to manage a culturally diverse workplace.

RISK:

The researcher identifies time imposition risk and psychological risk associated with participation in this research. Giving an interview for 45 -60 mins may affect your work routine and leads to time imposition for you. To minimise the time imposition risk, the researcher will be flexible on the interview schedule. You will be informed well in advance that the interviews will be restricted to no more than 60 minutes. This helps to minimise time imposition and inconvenient caused to you. Another risk identified by the researcher is a psychological risk. As you are from different cultural background or experience working with people from a different culture, you may get stressed to answer the questions regarding the culturally diverse workplace. To minimise the psychological risk, you will be given opportunities to ask any question that you may have prior to their interviews. The researcher will mention in the participant information sheet as well as before the interviews commence that you could withdraw from participation at any time during the project without comment or penalty if you feel uncomfortable with certain questions.

PRIVACY AND CONFIDENTIALITY:

All aspects of the study, including collected data and results, will be strictly confidential, and only the researcher and his supervisors will have access to the interview data. All data collected for this study will be re-identified in the public domain using a coding system, and thus you will be re-identifiable. All taped interviews will remain totally confidential. The data collected for this research may be used in future research projects or make it available for use by other researchers after getting consent from the researcher. A summary of the findings can be provided to you if requested by you. All the personal details will be erased before giving the summary to you.

PARTICIPANTS CONSENT:

You will be requested to sign a written consent form (enclosed) to confirm your agreement to participate in this project. Please return your signed consent form to a member of the Research Team before participating in your interview.

QUESTIONS ABOUT THE PROJECT:

If you have any questions or require further information about this project, please contact the Principal Investigator.

COMPLAINTS OR CONCERNS REGARDING THE PROJECT:

If the participants have any ethical concerns, please contact USQ Human Research Ethics Committee via email ethics@usq.edu.au or telephone +61 7 4631 2690.

Thank you for your help. Please keep this sheet for your information.

Appendix E: Participant consent form



University of Southern Queensland

PARTICIPANT CONSENT FORM

PROJECT DETAILS

Title of Project: The title of Project: The role of cultural intelligence in facilitating tacit knowledge sharing.

STATEMENT OF CONSENT

| | | | |
|----------------------|---------------------|--|------------|
| Principal Researcher | Mutharasu Murugan | u1064799@umail.usq.edu.au | 0401733899 |
| Research Supervisor | Dr.Eric Kong | Eric.Kong@usq.edu.au | |
| Research Supervisor | Dr.Frances Woodside | Frances.Woodside@usq.edu.au | |

STATEMENT OF CONSENT

In giving my consent, I acknowledge that:

- I have read and understood the participants' information sheet regarding this project.
- The procedures required for the project and the time involved has been explained to me, and any questions I have about the project have been answered to my satisfaction.
- I have given the opportunity to discuss the information and my involvement in the project with the researcher.
- I give my permission to be audiotaped the interview.
- I understand that I can withdraw from the study at any time, without comment or penalty.
- I understand that my involvement is strictly confidential, and no information about me will be used in any way that reveals my identity.
- I understand that I will be provided with a copy of the transcript of the interview for my perusal and endorsement before inclusion of this data in the project.
- I understand that I can contact the University of Southern Queensland Ethics Coordinator on 07-4631 2690 or email ethics@usq.edu.au if I do have any concern or complaint about the ethical conduct of this project.
- I am over 18 years of age and agree to participate in the project.

Participant Name:

Signature:

Date:

Please return this form to the Investigator before undertaking the interview.

Appendix F: Snapshot of codes and themes

The screenshot displays a software interface with a top menu bar (File, Home, Import, Create, Explore, Share) and a toolbar with various icons. On the left, there is a navigation pane with sections like Quick Access, Data, Codes, Cases, Notes, Search, Maps, and Output. The main area shows a 'Nodes' table with the following data:

| Name | Files | References | Created On |
|-----------------------------------|-------|------------|-------------------------|
| Findings | | 35 | 966 26/02/2020 10:37 AM |
| Tacit Knowledge | | 35 | 613 11/01/2020 11:59 AM |
| Definition of tacit knowledge | | 35 | 64 11/01/2020 11:33 AM |
| Experience | 24 | 24 | 14/01/2020 9:54 AM |
| Domain knowledge | 18 | 19 | 11/01/2020 11:48 AM |
| Practical Knowledge | 3 | 3 | 18/01/2020 10:55 AM |
| Integration | 3 | 3 | 21/01/2020 1:18 PM |
| Trouble shooting | 3 | 3 | 23/01/2020 2:08 PM |
| Ideas | 3 | 3 | 01/02/2020 8:54 AM |
| Understanding of software | 2 | 3 | 11/01/2020 11:49 AM |
| Context based knowledge | 2 | 2 | 11/01/2020 12:07 PM |
| Product knowledge | 1 | 1 | 13/01/2020 3:57 PM |
| Understanding culture difference | 1 | 1 | 30/01/2020 11:01 AM |
| Forward planning and forecast | 1 | 1 | 30/01/2020 2:58 PM |
| Proven methods | 1 | 1 | 31/01/2020 10:40 PM |
| Importance of tacit knowledge | | 35 | 98 11/01/2020 11:33 AM |
| Organisation benefits | 33 | 64 | 01/02/2020 4:28 PM |
| Competitive advantage | 33 | 58 | 25/02/2020 12:03 PM |
| Win more business | 24 | 26 | 25/02/2020 12:04 PM |
| Improve delivery | 14 | 15 | 25/02/2020 12:04 PM |
| Enhance quality | 9 | 9 | 25/02/2020 12:04 PM |
| Reduce cost | 5 | 5 | 25/02/2020 12:04 PM |
| Implement ICT product effectively | 3 | 3 | 25/02/2020 12:04 PM |
| Others | 2 | 2 | 25/02/2020 12:11 PM |
| Bring comfortness in new joiners | 1 | 1 | 21/01/2020 11:44 AM |
| Special connection and bonding | 1 | 1 | 01/02/2020 4:28 PM |
| Individual benefits | | 21 | 26 21/01/2020 11:37 AM |
| Problem solving | 9 | 9 | 23/01/2020 2:10 PM |
| Survival and career growth | 5 | 5 | 05/02/2020 4:52 PM |
| Others | 5 | 5 | 25/02/2020 12:07 PM |
| Make job Easier | 4 | 4 | 25/02/2020 12:08 PM |
| Doing smarter work | 1 | 1 | 25/02/2020 12:08 PM |

File Home Import Create Explore Share

Cut Copy Paste Merge Clipboard

Properties Open Memo Link Item

Add To Set Create As Code Create As Cases

Query Visualize Explore

Code Auto Code Range Code Uncode Coding

Case File Classification Classification

Detail View Sort By

Unlock Navigation View

List View Find

Workspace

Quick Access

- Files
- Memos
- Nodes

Data

- Files
 - Audio files
 - Charts
 - Guidelines
 - Journal Articles
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 - CQ and Knowledge sharing
 - ICT
 - tacit knowledge sharing
 - Meanings
 - Transcription
- File Classifications
- Externals

Codes

- Nodes
- Discussion chart
- Relationships
- Relationship Types

Cases

Notes

- Memos
- Framework Matrices
- Annotations
- See Also Links

Search

Maps

Output

- Reports
- Extracts

Nodes

| Name | Files | References | Created On |
|---------------------------------------|-------|------------|-------------------------|
| Decision making | | 2 | 01/02/2020 8:56 AM |
| How much is important | | 7 | 11/01/2020 12:06 PM |
| Sharing Mechanism | | 35 | 101 11/01/2020 12:31 PM |
| Knowledge transfer session | | 19 | 27 13/01/2020 4:02 PM |
| Training | | 6 | 6 23/01/2020 2:12 PM |
| White board and diagram | | 5 | 5 09/02/2020 11:39 AM |
| Q&A | | 3 | 3 09/02/2020 11:41 AM |
| Post implementation review | | 3 | 3 09/02/2020 11:41 AM |
| Effective communication | | 16 | 19 13/01/2020 9:19 PM |
| Face to face | | 5 | 5 09/02/2020 11:44 AM |
| Interaction | | 0 | 0 25/02/2020 12:13 PM |
| Social interaction | | 14 | 19 13/01/2020 4:13 PM |
| Casual | | 7 | 9 25/02/2020 12:15 PM |
| Brown bag | | 1 | 1 25/02/2020 12:15 PM |
| Technology usage | | 13 | 20 18/01/2020 10:11 AM |
| Screen share | | 4 | 4 18/01/2020 10:10 AM |
| Email usage | | 3 | 4 18/01/2020 10:10 AM |
| Video and Audio recording | | 2 | 2 13/01/2020 4:04 PM |
| Mentoring | | 5 | 5 11/01/2020 1:10 PM |
| Good relationship | | 5 | 5 11/01/2020 1:11 PM |
| Collaboration | | 5 | 5 28/01/2020 5:04 PM |
| No structured way to share | | 1 | 1 30/01/2020 7:58 PM |
| Others | | 0 | 0 25/02/2020 12:17 PM |
| Extra data for future use | | 34 | 217 25/02/2020 12:32 PM |
| Challenges in sharing tacit knowledge | | 30 | 74 11/01/2020 11:34 AM |
| Cultural difference | | 21 | 31 20/01/2020 4:35 PM |
| Language barrier | | 11 | 17 13/01/2020 4:21 PM |
| Ability - Receiver and Sender | | 9 | 13 16/01/2020 4:40 PM |
| Fear of losing job | | 4 | 8 18/01/2020 10:15 AM |
| Work environment | | 3 | 3 30/01/2020 11:01 AM |
| Lack of trust | | 2 | 2 25/02/2020 12:29 PM |

File Home Import Create Explore Share

Cut Copy Paste Merge Properties Open Memo Link Add To Set Create As Code Create As Cases Query Visualize Code Auto Code Range Code Uncode Case Classification File Classification Detail View Sort By Undock Navigation View List View Find

Clipboard Item Explore Coding Classification Workspace

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Search

Maps

Output

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Nodes

| Name | Files | References | Created On |
|--|-------|------------|-------------------------|
| Motivation to share tacit knowledge | | 29 | 59 11/01/2020 1:13 PM |
| Individual benefits | | 26 | 43 05/02/2020 5:52 PM |
| Satisfying Receivers' need | | 17 | 19 25/02/2020 12:21 PM |
| Enhance my knowledge | | 10 | 10 13/01/2020 4:11 PM |
| Self Satisfaction | | 7 | 7 21/01/2020 1:22 PM |
| Fill during your absence | | 7 | 7 18/01/2020 11:07 AM |
| Others | | 0 | 0 25/02/2020 12:21 PM |
| Organisation benefits | | 12 | 16 18/01/2020 11:05 AM |
| Work environment | | 3 | 3 09/02/2020 11:45 AM |
| Team success | | 2 | 3 02/02/2020 1:37 PM |
| CQ | | 35 | 293 11/01/2020 11:59 AM |
| Participants view on CQ | | 31 | 54 11/01/2020 4:17 PM |
| Cognitive CQ role in tacit knowledge sharing | | 29 | 90 11/01/2020 11:35 AM |
| Identification of different culture | | 24 | 50 11/01/2020 1:43 PM |
| Improvement of interpersonal relationships | | 15 | 19 25/02/2020 2:24 PM |
| Introduction of confidence into the interaction | | 13 | 15 25/02/2020 2:25 PM |
| Trust | | 6 | 6 11/01/2020 3:20 PM |
| others | | 0 | 0 25/02/2020 2:24 PM |
| Examples and analogies | | 0 | 0 25/02/2020 2:24 PM |
| Motivational CQ role in tacit knowledge sharing | | 26 | 51 11/01/2020 1:29 PM |
| Willingness to share and team cohesion | | 17 | 27 31/01/2020 5:16 PM |
| Enhancement of connections | | 16 | 16 11/01/2020 3:04 PM |
| Clan Culture | | 8 | 8 24/01/2020 12:15 AM |
| Others | | 0 | 0 25/02/2020 2:28 PM |
| Metacognitive CQ role in tacit knowledge sharing | | 25 | 43 11/01/2020 1:27 PM |
| Selection of the appropriate sharing mechanis | | 25 | 42 04/02/2020 11:07 PM |
| Clarity in sharing information | | 1 | 1 25/02/2020 2:21 PM |
| Social interaction | | 0 | 0 25/02/2020 2:22 PM |
| Adjustment of the approach | | 0 | 0 25/02/2020 2:22 PM |
| Cultural sensitivity | | 0 | 0 25/02/2020 2:22 PM |
| Others | | 0 | 0 25/02/2020 2:22 PM |

File Home Import Create Explore Share

Paste Copy Merge Clipboard

Properties Open Memo Link Item

Add To Set Create As Code Create As Cases

Query Visualize

Code Auto Code Range Code Uncode Coding

Case File Classification Classification

Detail View Sort By

Undock Navigation View

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Workspace

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Nodes

| Name | Files | References | Created On |
|---|-------|------------|------------------------|
| Cultural sensitivity | | 0 | 0 25/02/2020 2:22 PM |
| Others | | 0 | 0 25/02/2020 2:22 PM |
| Behavioural CQ role in tacit knowledge sharing | | 23 | 51 11/01/2020 1:28 PM |
| Effective sharing | | 18 | 25 01/02/2020 9:16 AM |
| Effective Communication | | 13 | 14 13/01/2020 9:21 PM |
| Comfort | | 8 | 8 23/01/2020 3:50 PM |
| Contend | | 4 | 4 25/02/2020 2:32 PM |
| Others | | 0 | 0 25/02/2020 4:30 PM |
| Develop CQ | | 1 | 4 30/01/2020 10:55 AM |
| Cultural diversity in Australia ICT workplace | | 31 | 41 11/01/2020 11:45 AM |
| Existence of Cultural diversity in Australian ICT wor | | 31 | 31 11/01/2020 12:56 PM |
| Communication challenge | | 4 | 4 11/01/2020 1:09 PM |
| Acceptance of Cultural diversity | | 3 | 3 11/01/2020 12:55 PM |
| Diverse team works better | | 2 | 2 11/01/2020 4:13 PM |
| Misunderstanding and perception | | 1 | 1 30/01/2020 12:36 PM |
| Adv of similar culture | | 0 | 0 05/02/2020 4:18 PM |
| Recommendation | | 9 | 19 24/01/2020 4:37 PM |
| Journal article reference | | 4 | 28 24/02/2020 9:02 PM |
| Guidelines | | 0 | 0 26/02/2020 10:35 AM |

File Home Import Create Explore Share

Paste Copy Merge Clipboard

Properties Open Memo Link Create As Code Create As Cases

Query Visualize

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Notes

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Maps

Output

Nodes

| Name | Files | References | Created On | |
|--|-------|------------|------------|---------------------|
| CQ and tacit knowledge sharing | | 35 | 546 | 11/01/2020 11:59 AM |
| Cognitive CQ role in tacit knowledge sharing | | 31 | 144 | 11/01/2020 11:35 AM |
| Understanding co-worker national culture | | 24 | 50 | 11/01/2020 1:43 PM |
| Understanding co-worker religious belief | | 18 | 25 | 25/02/2020 2:24 PM |
| Understanding co-worker cultural behaviour | | 15 | 19 | 25/02/2020 2:24 PM |
| CQ outcomes and tacit knowledge sharing | | 24 | 50 | 25/02/2020 2:25 PM |
| Metacognitive CQ role in tacit knowledge sharing | | 33 | 153 | 11/01/2020 1:27 PM |
| Assessing the selected plan and approach | | 25 | 42 | 4/02/2020 11:07 PM |
| Consciously planning prior to cross-cultural interaction | | 14 | 24 | 25/02/2020 2:21 PM |
| CQ outcomes and tacit knowledge sharing | | 18 | 26 | 25/02/2020 2:22 PM |
| Identifying co-workers' cultural background | | 15 | 19 | 25/02/2020 2:22 PM |
| Using previous cross-cultural interaction experience | | 19 | 42 | 25/02/2020 2:22 PM |
| Behavioural CQ role in tacit knowledge sharing | | 33 | 93 | 11/01/2020 1:28 PM |
| Adjusting communication style | | 15 | 20 | 13/01/2020 9:21 PM |
| Adjusting TKS approach and mechanism | | 17 | 23 | 23/01/2020 3:50 PM |
| Adjusting working style | | 18 | 27 | 1/02/2020 9:16 AM |
| CQ outcomes and tacit knowledge sharing | | 19 | 23 | 25/02/2020 4:30 PM |
| Motivational CQ role in tacit knowledge sharing | | 32 | 99 | 11/01/2020 1:29 PM |
| Reciprocity | | 28 | 41 | 11/01/2020 3:04 PM |
| Self-satisfaction | | 15 | 18 | 24/01/2020 12:15 AM |
| CQ outcomes and tacit knowledge sharing | | 17 | 27 | 31/01/2020 5:16 PM |
| Identification and increasing of tacit knowledge stock | | 11 | 13 | 25/02/2020 2:28 PM |
| Practise CQ | | 15 | 17 | 11/01/2020 4:17 PM |
| Interrelationship between CQ components | | 29 | 40 | 28/10/2020 10:26 PM |