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Borderless Workplace:

Evaluating Filipino CMC Competence and its Outcomes in the Use of Online Collaborative Communication Tools

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EVALUATING FILIPINO CMC COMPETENCE AND ITS OUTCOMES IN THE USE OF ONLINE COLLABORATIVE COMMUNICATION TOOLS

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ABSTRACT

Cabrera, D. D. R. (2019). *Borderless Workplace:* Evaluating Filipino CMC competence and its outcomes in the use of online collaborative communication tools. Unpublished Master's Thesis, University of the Philippines College of Mass Communication.

CMC competence is critical in communicating and collaborating in an organization that utilizes online collaborative communication tools. Using Spitzberg's CMC Competence Theory (2006), this thesis looks into the relationship between the user's context-based CMC competence and how it is related to the competency outcomes when using online collaborative communication tools. Data was collected from a sample of 583 Filipino employees of Reed Elsevier Philippines. Structural equation modeling was used to test the hypotheses derived from the CMC competence theory which explains that any behavioral phenomenon can be understood as a function of five primary theoretical domains: context, motivation, knowledge, skills, and outcomes. Based on the findings, the study concludes that a) age affects the Filipinos ability to display composure as a CMC interactant; b) Filipinos have the ability to integrate non-mediated skills in a mediated setting through their motivation, knowledge, and skills; c) Filipino employees are able to apply high level of media efficacy, interaction, and choice in communicating and collaborating online; d) Filipino employees' possession of higher CMC competence to utilize online collaborative communication tools translated to excellent competency outcomes in communicating and collaborating online; and e) Filipinos media selection generated a perception of effectiveness, appropriateness, satisfaction, and productivity/efficiency in using online communication tools.

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CHAPTER I. INTRODUCTION

This chapter deals with the study on computer-mediated communication focusing on the context of interaction and CMC competence. These concepts lead to make better predictions with regard to the important competency outcomes of communication considering the influence of its context, media and message selection in relation to the use of online collaborative communication tools offshore outsourcing organization.

A. Background of the Study

1. Computer-Mediated Communication Competence

Computer-mediated communication or CMC has been distinguished as communication that occurs on the Internet (Wrench & Punyather-Carter, 2007). It is a form of communication between two or more people who interact and/or influence each other through separate computers via a network connection using the software in which computers are directly involved at both ends (Kelsey & St. Amant, 2008). It is commonly used today because it is synchronous or real-time communication between two or more people (Hwang, 2011).

Computer-mediated technologies have been providing online platforms that annihilate time and space between individuals (Ou et al., 2013). In some organizations today, rather than viewing time differences between locations as a nuisance, they have begun to see them as an opportunity (Errighi, 2016).

Individuals have learned to capitalize on the idea that at any given time, somewhere in the world, it is business hours and people are at their desks working (Dorwin et al., 2013). These individuals, who are referred to as employees, capable of using this technology, find themselves no longer working from one office, in one location, with one department, or in a one-time zone.

Clearly, technology is a key player in shaping the organizational structure and enhancing organizational performance (Gandal and Sharma, 2009). It has become prevalent at present interactions in the workplace (Gilson et al. 2015). The organizational landscape has been rapidly changing at the present time.

The core types of technologies that are enabling the organization today are all centered on collaboration, in other words, getting people to share and work together (Morgan, 2014). These technologies include online collaboration tools and task management applications to full internal social networks deployed within organizations.

Organizations attempt to facilitate this change in the organizational landscape by introducing online collaboration tools which enable this type of open communication, collaboration, and transparency across the organization. Some parts of communication technology impact the way employees do their tasks by shifting to online collaboration tools. This routine enables organizations to connect and engage people with information anywhere, anytime, and on any device (Morgan, 2014). Hence, using online collaboration tools improve communication and collaboration, speeds up the decision-making process, reduces content duplication, improves organizational alignment, improves innovation, and makes it easier for employees to get work done (McAfee & Brynjolfsson, 2008).

Evidently, within this changing work environment, relying on online collaboration tools is a significant strategic advantage in the organization. The globalization of business communication through online collaboration tools has become necessary for staying competitive. However, given the advantages of online collaboration tools in the workplace, there must be a consideration on the potential downside of the employees who communicate and collaborate using online collaboration tools wherein the manner in which they communicate and collaborate message and information changes in the interaction medium (Ou et al., 2013). Studies found out that computer-mediated communication creates lags in information exchange, leads to a greater occurrence of misunderstandings, reduces information seeking attempts, and produces incoherent messages (Andres, 2012).

In addition, given that there is a myriad of online collaboration tools, there remains to be a challenge on how employees adopt new habits to integrate it effectively in their day-to-day communication encounters (Mikogo, 2015).

Besides, most organizations today have either deployed various online collaboration tools or are in the process of doing so. Unfortunately, the big challenge around these new online collaboration tools is actually getting employees to use them. After all, if employees do not use the online collaboration tools, then processes like communication and collaboration improvement, faster decision-making process, reduction of content duplication, organizational alignment, innovation, and work efficiency are not possible. If the globalization of communication and collaboration, through online collaboration tools is necessary for staying competitive, then the challenges that were mentioned are a major concern.

Studies have shown that there are inter-individual differences in communication competence that can affect how people communicate and build relationships online (Hwang, 2011; Spitzberg, 2006; Wang & Haggerty, 2011). As such, it is likely that an employees' self-perceived communication competence can have a significant impact on successful communication and collaboration within the organization. It is expected that, as a result of different experiences and inclination, individuals are likely to vary in the degree to which they are competent in using online collaboration tools. An organization with a competent employees that are familiar with the online collaboration tools being utilized would likely outperform an organization with employees that are technologically challenged or wary of communicating and collaborating online.

Therefore, there is a need to study the employees' CMC competence in the present work environment. CMC competence is critical in communicating and collaborating in an organization that utilizes online collaborative communication tools. There is a need to study the employee's CMC competence in their ability to communicate effectively. Also, as competency outcomes focus on the end results, identifying the outcomes derived from context-based CMC competence would satisfy the so what question that is, what are the measurable and observable outcomes for which communicating and collaborating competently matters?

2. Online Collaboration Tools

Organizations have maximized the use of various communication tools such as electronic mail (e-mail), computer conferencing, and computer-supported collaborative work (CSCW) between individuals or groups who may be scattered in different regions

of a country or in different continents (Romiszowski & Mason, 2001). However, latest trends indicate a growing interest for types of interaction in online business communication that are more immediate than e-mail. They are the online collaborative communication tools (Gilson et al., 2014). These tools in general support video, audio, screen sharing, group calling, document sharing, interactive whiteboard, live chat, recording, and instant messaging (Jones, 2012; Pillard and Burt, 2013; Xu, et al., 2008).

Given the broad distinction of online collaboration technologies, this study focused on online collaborative communication tools since it highlights the primary function of communication and collaboration through the exchange of messages and information.

Online collaborative communication platforms that are commonly utilized by the organizations today are Skype for Business, Cisco Jabber WebEx, and Microsoft Teams (see Appendix G). These online collaborative communication tools offer instant messaging, transfering files, HD video calling, and recording audio and video in meetings. Cisco Jabber WebEx is the most commonly used tools for synchronous online meeting facilities like team collaboration, webinars, training and client support (Lanubile et al., 2010). These technologies are frequently considered inputs that serve and enable communication and collaboration (Gilson et al., 2014).

In addition, online collaborative communication tools comprise an increasingly important part of communication and collaboration in the organizations related to key areas such as knowledge management, process improvement, and teamwork (Weiseth et al., 2006). It involves the process of collaborating as working jointly together on an intellectual endeavor between team members working towards a mutual goal or participants of work-place meetings (Chen et al., 2004; de Vreede et al., 2009;

Skaržauskienė et al, 2013). It encompasses not only computer-mediated collaborative work but also collaborative work supported by other types of technologies (Kock, 2005). It enables organizations or employees to collaboratively plan, design, develops, manage, problem-solving, and enabling workflow systems (Chen et al., 2004; Finance Online, 2015) and help group activities by providing ease of communication and coordination among members of the group (Hidayanto and Setyady, 2014).

Clearly, there are numerous instances wherein how these new online collaborative communication tools are being used for processes such as employee onboarding, taking notes at meetings, staying on top of information, finding subject-matter experts, getting access to information on the go, motivating employees and making work fun, brainstorming ideas and developing products (Morgan, 2014).

Certainly, the utilization of CMC technology has led to an increasingly mobile but better-connected workforce and the implementation of CMC technologies is necessary for a company to shape the employees' work performance and therefore remain competitive and agile in today's market (Johnson et al., 2001; Ou et al., 2013).

Hence, the organization is witnessing a shift away from feature-centric CMC technology towards a CMC technology which is intuitive, convenient, and purposeful that will not be limited to the selected department but rather various departments around the world that collaborate via the same tools. (Mikogo, 2015). It is a new technology that improves the way the organization communicates and collaborates in global satellite locations.

With this in mind, are the employees willing to adopt new habits to integrate online communication tools competently in their day to day communication encounters?

Majority of employees continue to concentrate on traditional options such as emails, chats, and discussion boards. Still, concerns about skillful interactions of employees' through online collaborative communication tools have been placed under the periphery. Thus, it becomes necessary to explore the CMC competence of employees within the online collaborative communication tools parameters.

3. Offshore Outsourcing

The breakthrough in communication technology through the utilization of online collaborative communication tools in the workplace, has existed in the Philippines through offshore outsourcing (Dorwin et al., 2013). Offshore outsourcing started in the Philippines with the emergence of computer-mediated communication technologies allowing the transmission of tasks and information (Lee Kuan Yew School of Public Policy, 2014). The Philippines has become an outsourcing destination and has established itself as an important service offshoring destination that offers a broad range of services which competes with India and China (Bird & Ernst, 2009).

The success of the Business Process Outsourcing (BPO) sector in the Philippines has been attributed to the qualities of its workforce (Lee et al., 2014). It has also become a major generator of job opportunities as direct and full-time employment grew from 1.3 million in 2016 (ASEAN Briefing, 2017). Much of the industry is likely to continue to be in the Greater Metro Manila area and in Cebu but significant growth is also expected in the so-called "next wave" cities (Baguio City, Clark Pampanga, Bulacan, Rizal, Cavite, Laguna, Batangas, Naga City, Iloilo, Dumaguete and Davao) (Bird & Ernst, 2009).

Likewise, offshore outsourcing became a key developing industry primarily due to the workforce which composed mainly of young and educated Filipinos with competent communication skills. The Philippines has placed as the top offshore outsourcing destination in Asia and included in the Top 10 worldwide outsourcing destinations in 2017 (ASEAN Briefing, 2017).

Offshore outsourcing has matured beyond cost reduction to become a way for organizations to better access talent and capabilities, gain more flexibility, reinvent their business model, and drive innovation (PWC, 2008). Leading companies are now using online collaborative communication tools to drive revenue, quicken time-to-market, and increase innovation (MacCormack et al., 2007).

Certainly, this explains how strategic decision-making processes are affected and supported by computer-mediated communication through online collaborative communication tools to provide useful insights based on an organization's cost advantage, skill availability and area of specialization in particular of offshore outsourcing in the Philippines which supports foreign clients and colleagues.

The services offshored to the Philippines are mostly focused in the Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO) (Lee Kuan Yew School of Public Policy, 2014).

BPO has been operating in the Philippines during the mid-'90s to 2006 where outsourcing firms started to offer complex transactions such as decision-making and problem-solving tasks (Sen et al., 2013; KPMG, 2011). Services were focused primarily on cost savings and on global capabilities and more efficient delivery in the back and

middle office such as customer service, technical support, telemarketing and sales (EILER, 2012, Errighi et al, 2016).

Subsequently, from 2006 to 2015, firms began offering knowledge-intensive BPO services currently regarded as Knowledge Process Outsourcing (KPO) which was considered as the third generation of the outsourcing by organizations across the globe (Errighi et al., 2016). Unlike traditional BPO firms, KPO provides higher value services that require advanced research, analytical, interpretation, and technical skills (Hergumer, 2013).

KPO's primary objective is to provide clients with useful insights that may assist them in their strategic decision-making process (IBEF, 2008). Acquiring the necessary skill sets, attracting talent, protecting intellectual property and dealing with conflicting interest were the major challenges of the KPO industry over the next years (KPMG, 2011). Hence, KPO offered value for the client by focusing on domain expertise rather than process expertise.

In other words, BPO's primary value proposition is cost arbitrage improvements and process efficiency, while KPO's value proposition is to generate income based on high complexity and judgment based work process (KPMG, 2011; Sako, 2009).

It is interesting to explore the importance of the growing offshore outsourcing sector particularly in the KPO sector which is expected to expand in the years to come to tap specialized industry. The question of how CMC competence in the use of online collaborative communication tools plays a vital role in the expansion of this Knowledge Process Outsourcing remains to be an area worth knowing about.

Moving forward, International Business Process Association in the Philippines (IBPAP) expects the contribution of KPO services to continue to grow especially in industries such as information technology, banking, healthcare, media, engineering, and creative services (Francisco & Parlade, 2013). Specialized skills including Information Technology and Computer Service activities, Application Development, Engineering, Multimedia, Data Analytics, Sales and Marketing Analytics, and Customer Relationship Management (CRM) activities are now offered in the outsourcing organizations where companies from the United States of America and the United Kingdom are clients, customers, and business partners (PSA, 2017).

It is thought-provoking to evaluate the computer-mediated communication competence of the Filipino employees who utilize online collaborative communication tools given the possible growth and expansion of industries in the outsourcing industry, particularly in the KPO sector.

4. Online Communication and Collaboration in Offshore Outsourcing Organization

Communication and collaboration are the lifeblood of offshore outsourcing organization whether in BPO or KPO setting, specifically at Reed Elsevier, a global provider of information-based analytics and decision tools for professional and business customers located in the United States of America and London. Founded in 1992, the company serves in more than 180 countries and leverage a deep understanding of their customers to create innovative data solutions which combine content and data with analytics and technology in global platforms. Providing data solutions would include

assessing risk, verify identity, prevent fraud, comply with legislation, facilitate and secure commerce, supporting data in law enforcement, and homeland security initiatives.

At present, Reed Elsevier Philippines regional operating headquarters (ROHQ) is located at UP-Ayalaland Technohub in Quezon City. They offer skills including Information Technology and Computer Service activities, Application Development, Engineering, Multimedia, Data Analytics, Sales and Marketing Analytics, and Customer Relationship Management (CRM). They see the country's competent English-speaking workforce as a way to dramatically lower costs while at the same time, retain the same or even above the level of customer satisfaction. In this regard, processes in providing data solutions to customers are migrated from their home countries to the Philippines. To completely realize the migration of different skills in the US, the use of online collaborative communication tools is necessary to key areas such as knowledge management, process improvement, and teamwork. In order to provide innovative data solutions to different industries, Filipino employees need to collaboratively plan, design, develop, manage, analyze, and problem-solving with their global counterparts.

Therefore, this study explores how Filipino employees make use of online collaborative communication tools to leverage communication and collaboration in the context of offshore outsourcing organization. As a requirement of their professional and private environments for self-improvement in computer-mediated communication, they will be studied according to their engagement in online collaborative communication tools and level of communication competence.

B. Research Problem and Objectives

CMC competence is critical in communicating and collaborating in an organization that utilizes online collaborative communication tools. There is a need to study on the employees' CMC competence in their ability to communicate and collaborate using online collaborative communication tools. How it is being used and who is using it are vital considerations to evaluate the competency outcomes in this kind of communication setting. As competency outcomes focus on the end results, identifying the outcomes derived from CMC competence would satisfy the so what question that is, what are the measurable and observable outcomes for which communicating competently matters?

Furthermore, concerns about skillful interactions through online collaborative communication tools have been placed under the periphery hence, it becomes necessary to explore communication competence within the computer-mediated communication parameters.

Lastly, the scale and scope of sourcing services worldwide through outsourcing in the Philippines becomes possible through online collaboration tools. Locally and abroad, online collaborative communication tools have become more significantly intuitive, convenient, and purposeful in communicating and collaborating with colleagues in the organization. It is the best interest of this study to put the lens on the Philippines offshore outsourcing where time, proximity and collaboration through computer-mediated communication are seen as critical in the business communication context.

Provided the abovementioned information, the researcher would like to conduct a study that aims to answer the following research problem and objectives.

Research Question:

What is the relationship between the context-based CMC competence and its competence outcomes towards the usage of online collaborative communication tools in offshore outsourcing organization?

Specifically, the study wants to:

1. To identify the demographic profile of Filipino employees working in the outsourcing industry.
2. To explain the relationship between the demographic profile of Filipino employees that use online collaborative communication tools and their CMC competence.
3. To assess how contextual factors affect Filipino employees CMC competence in the context of online mediated platforms.
4. To identify the relationship of Filipino employees CMC competence and their selection of media in using online collaborative communication tools.
5. To describe how Filipino employees CMC competence affect their competency outcomes in using online collaborative communication tools.
6. To understand the relationship of Filipino employees media selection and competency outcomes based on the context-based CMC competence in communicating and collaborating through online collaborative communication tools.

C. The Significance of the Study

New communication technologies have introduced new arenas for communication and the users adapt to these technologies to meet personal and organizational goals objectives. This study gave attention to the role of online collaborative communication tools in the formation and development of Filipino employees communication competence based on the interaction medium.

This study would like to contribute to the growing theoretical concepts of computer-mediated communication competence that applies in the context of offshore outsourcing through updated collaborative communication tools and technologies, the function of this medium in the said context and how it applies to the user's CMC competence. As the theory does not have a primary motivational metaphor (Spitzberg, 2006), instead, motivation, knowledge, skills, context, and outcomes serve as metaphorical vessels into which the endeavor of this study can be functionally concealed. Also, this study focused on competencies that were relevant to optimizing efforts to promote online collaboration in the outsourcing context with an emphasis on aligning decisions to the preference, values, and goals of those individual users.

On the conceptualization of this study, this research endeavor would like to substantiate the theoretical concepts of motivation, knowledge, and skills which are moderated by real contextual factors in their influence on the real outcome. This study contextualized the computer-mediated communication competence of Filipino employees in the outsourcing industry that communicates and collaborate with their colleagues in using online collaborative communication tools.

Using the existing and developing contextual and situational model for CMC competence, this study gave a full understanding of what occurs when people communicate competently and how doing so becomes the basis of relational development and goal achievement in the context of the organization, specifically, the outsourcing industry that promoted the use online collaborative communication tools. The current study developed a well-rounded understanding of how the components of CMC competence influence and affect the use of collaborative communication tools. These components explained how it led to competency outcomes of Filipino employees.

For the methodological significance, the design of the study was focused on evaluating the impact of CMC competence in an online collaboration that developed practical applications, inform individuals, and inform policy in organizations. Since the study was context-based CMC competence, the design was to explain the positive effects of communicating competently using Structural Equation Modelling in testing the proposed framework. The methodology evaluated the impact of any intervention designed to influence the individual user ability to communicate more competently.

For the practical significance of this study, the findings, results, and conclusions of the study would be of help in identifying key areas of evaluating the Filipino employees' CMC competence. Filipino employees qualified in the study who use online collaborative communication tools in communicating and collaborating with their colleagues were evaluated the way they communicate and collaborate given that the context is mediated.

Students and researchers in the fields of communication and business stand to benefit from this study. The study focused on the use of online collaborative communication tools that were inherently interpersonal in form and function. As such,

the work existing in this situation can be studied from a communication perspective. It also improved the process on how they can innovate communicating and collaborating in a virtual perspective. While the context of the study focused on the outsourcing industry, the related literature, as well as the findings and insights, may be applied in other sectors like manufacturing, hospitals, academe and others that use online collaborative communication tools in the future.

Moreover, the results of this study enabled organizations to have a more thorough understanding of the importance of the CMC competence and the use of online collaboration tools. This will eventually help organization to develop the skills needed and at the same time, raise awareness among Filipino employees to fully utilize and increase the use of online collaboration tool. At its core, this study helps to develop and extend the knowledge in the field of CMC and online collaboration in the Philippine context.

CHAPTER II. REVIEW OF RELATED LITERATURE

This chapter deals with related studies on Computer-Mediated Communication. This includes the narratives on communication competence in a computer-mediated context and the components of communication competence such as motivation, knowledge and skills. These concepts lead to the outcomes of communication competence considering the contextual factors, media selection and message expression in relation to online collaborative communication tools.

A. Communication competence

Only a few and recent studies have begun to investigate CMC competence but there are more in-depth studies that highlights communication competence as a concept on its own (Bunz, 2003; Spitzberg, 2006), in an instructional context (Bubas, 2001, 2004; Rice & Bunz, 2003), intercultural (Matveev & Del Villar, 2014), in a face-to-face organizational context (Payne, 2005), mobile technology context (Bakke, 2010; Bunz, 2003; Hwang, 2011; Wrench & Punyanunt-Carter, 2007; Chua & Chua, 2017; Schulze et al., 2017), face-to-face communication competence versus CMC competence (Hwang, 2011; Schulze et al., 2017).

Looking into the conceptualization of communication competence in the context of the organization in a face-to-face context, it is argued that successful communication is met using messages that are perceived as appropriate and effective (Payne, 2005). This provides an overview of a relational model of communication competence within the

organization and reports the findings of how job performance for employees and supervisors relates to communication competence.

In terms of looking at the difference between communication competence and team performance in intercultural context, it is argued that while a relationship between intercultural communication competence and multicultural team performance was found, it did not differ by overall national culture (Matveev & Del Villar, 2014)

Differences were found on several dimensions of intercultural communication competence between two groups: The Filipinos and the Americans were similar in interpersonal skills and team performance measure, where a combination of high interpersonal skills, high team effectiveness skills, an ability to manage intercultural uncertainty, and an ability to exhibit intercultural empathy serve as a template for effective team membership in both American and Filipino culture (Matveev & Del Villar, 2014).

Meanwhile, as the world has experienced a steady rise in web-based technologies, the steep increase in its usage suggests that trend is far from over and it is safe to say that new developments will continue to shape the way people communicate in the future

In line with the growing influence of communication medium on its users, a study by Bakke (2010) developed a measure and model of mobile communication competence that placed mobile communication within the framework and lens of communication competence. He found that cognitive motivation and knowledge stimulate interactants' communicative behavior as interactants perceive a competent communicator to be relaxed, emphatic, supportive, and able to change their communication practice depending on the interpersonal encounter. Hence, communication practices are altered

through the introduction of technology and the importance of studying communication competence has increased within mediated contexts.

Furthermore, a pivotal study on the use of CMC by Bubas et al. (2004) assessed the CMC competence in the context of education using two versions of the CMC competence in different modalities (the paper-and-pencil versus online environment) with 227 Croatian college students in the first study and 62 Croatian college students in the second study. They found that the motivation, knowledge, and skills components are clearly empirically revealed by the three concepts namely CMC technological literacy and adoption, CMC dependency/motivation, and CMC interaction skills. CMC satisfaction partly corresponds to the outcomes component of CMC competence. These four factors are found to be important for educational efforts to increase CMC competence (Bubas et al., 2004).

On the other hand, looking at the relationship of motivation, knowledge, and skills, Wrench & Punyanunt-Carter (2007) examined the relationship of CMC apprehension, CMC skill, and CMC presence and found that CMC apprehension and CMC skill negatively correlated with each other. Furthermore, CMC apprehension was not shown to relate to CMC presence, but CMC presence was shown to be impacted by CMC skill and increased skill in virtual environments likely enhances perceptions of presence in CMC.

Another study comparing communication competence in face-to-face and CMC was explored. The major difference between face-to-face communication competence and computer-mediated communication competence is found within the interactive environment involved.

In relation to the use of mobile smartphones, Hwang (2011) investigated the relevance of the concept of communication competence with the interpersonal digital media, mobile phone, SMS, and instant messenger through an online survey for 416 mixed of university students and government employees in Seoul, South Korea. He found that the users' proficiency in using interpersonal media would be one of the important factors dictating the efficiency of mediated communication. He added that media efficacy is related to users' efficient communication skills in a face-to-face setting. People who feel a stronger social presence during mediated interactions can be better at conversations using interpersonal media. The relational maintenance skills of which people usually take advantage in a face-to-face environment can also be used to help effective mediated interactions (Hwang, 2011).

Furthermore, Hwang discussed that communication competence in face-to-face communication positively affects mediated communication competence implying that people who usually interact efficiently in face-to-face settings tend to be competent communicators during a mediated conversation because any contextual ambiguity that might arise during a mediated conversation can be minimized through the use of effective communication skills (Hwang, 2011). He examined the effect of face-to-face communication competence on mediated communication competence (mobile phone and instant messaging) using structural equation modeling and found that there is a substantial distinction between face-to-face and computer-mediated communication competence. Such findings are also consistent with the research and theory in personality that maintains that individual differences in human behavior should be seen as being contextualized (Mischel, 2009).

Similar to Hwang's endeavor, a recent study by Schulze et al. (2017) investigated the interrelationship of face-to-face communication competence and CMC competence. It used exactly the same items but framed them to address the domain of face-to-face communication and the domain of CMC and used trait-correlated methods to inspect the convergence between these contextualized competencies. The results revealed that competencies from both domains (face-to-face and computer-mediated) should be treated as distinct constructs, thus pointing to the necessity of online-specific and contextualized constructs definitions and assessments (Schulze, 2017; Spitzberg, 2006).

In addition, Schulze et al. (2017) showed the components of the model assessed with self and peer groups significantly predicted the online communication outcomes of clarity, appropriateness, and effectiveness of the communication.

Moreover, as the use of social media is prevalent today, a recent study by Chua & Chua (2017) investigated the causal relationships between *Facebook* users' personal factors and attitude toward *Facebook* as the study hypothesized that personality traits were significantly associated with attitude toward *Facebook* and that the association would be mediated by computer-mediated communication competence motivation, knowledge, and skills. A survey method was used with 327 school teenagers and they found that the three CMC competence components are mediators that either enhance or reduce the strengths of the causal relationships between four personality traits neuroticism, extraversion, conscientiousness and openness to experience and participants' attitude toward *Facebook.* Without CMC skill, CMC knowledge and CMC motivation, there is no significant relationship between the neuroticism personality trait and attitude toward *Facebook.*

Also, Sherblom et al., (2013) examined the cognitive influence of student knowledge, motivation, skill, apprehension, and the communication medium on the degree of participation in online classroom discussions using computer-supported collaborative learning. Through an online survey participated by 91 respondents at two mid-western universities, the analysis showed that student knowledge of the computer-mediated communication (CMC) medium was the strongest predictor. Skill in communicating through the medium was second. Apprehension and motivation, also affected student participation. The medium itself had little effect. Moreover, results showed that knowledge, skill, apprehension, and motivation influenced the likelihood that students would participate in an online classroom discussion. Instructors who were knowledgeable about these influences could prepare students and, potentially, increase their involvement in that online discussion through foresight and planning (Sherblom et al., 2013).

In the academic setting, Zha et al. (2006) studied the use of electronic discussion boards with elementary-aged English as a Second Language (ESL) students to investigate students' communication competence in a computer-mediated communication with 28 ESL students in Grades 2 to 5 using quantitative and qualitative analysis through coded messages adopted from ESL standards. They found that students had a tendency toward casual rather than formal social interaction throughout the activities. As students accommodated to the learning environment of the electronic discussion board, their written communication with their peers developed into a combination of formal and informal expressive patterns that included the use of slang. Students had a higher participation rate in collaborative activities and tasks that they had in individual activities

and tasks. Although no significant change was found in socially and culturally appropriate uses of language, there were instances in which students corrected their use of language when influenced by their peers' messages. Moreover, as students gained experience with online communication, it appeared that they adapted their style according to the genre (Zha et al., 2006).

However, communication competence in research does not measure the full range of competencies that are required for users to effectively and appropriately engage in computer-mediated communication context, such as in online collaboration tools (Schulze et al. 2017). In light of the rate of change, the competencies required for online work and collaboration based on online collaborative tools are key competencies today (OECD, 2013).

This review of literature in communication competence showed the results that only a few and recent studies have begun to investigate CMC competence focusing on the context of an interaction. Findings on how communication competence were explored applying the concepts of motivation, knowledge, and skills in the context of teaching, intercultural context, organization, digital and mobile phones, and social media would be linked in the endeavor of this study as they applied in the outsourcing context that uses online collaborative communication tools.

1. CMC Motivation

Competence in CMC begins with motivation as an important prerequisite (Spitzberg, 2006). It is argued that the need or desire to use a technology that supports CMC would result in a positive or desired outcome, however, with negative motivation,

the knowledge and skills of CMC user couldn't be adequately put to use (Bubas, 2004). The more users become motivated and engaged in CMC, the greater the knowledge and skill of the users become (Spitzberg, 2006). Consequently, the proportion of his or her achieving the preferred outcomes then increases (Keyton, 2015, Spitzberg, 2006).

Motivation has been often associated with one's willingness to approach or avoid interaction with others connected to goals such as self-presentation, relational, and instrumental goals (Payne, 2005). It can be indexed positively by a range of constructs such as willingness to adopt new communication technologies, satisfaction, gratifications and positive attitudes toward such technologies or avoidance motives such as computer or information anxiety (Spitzberg, 2011).

Looking at the communication competence of Filipinos attempted to investigate the communication apprehension that exists among Filipino maritime students and whether the students view themselves as communicatively competent in English online. A survey has been conducted on 24 first year students of the Maritime Academy of Asia and the Pacific and it has revealed that students performances varied in relation to the type of speech task and their perceptions about their communication apprehension were independent of the teacher or peer grades given to them (Rojo-Laurilla, 2008).

Even with the use of computer-mediated communication tools in the academe, it has been found that for teaching, the use of multimedia language teaching promotes students' motivation and learning interest which can be a practical way to get them involved in the language learning (Shyamlee, 2012).

On the contrary, studies in the relationship of CMC apprehension, CMC skill, and CMC presence were explored and found that CMC apprehension and CMC skill

negatively correlated with each other (Wrench & Punyanunt-Carter, 2007). Furthermore, CMC apprehension was not shown to relate to CMC presence in virtual environments (Wrench & Punyanunt-Carter, 2007).

In terms of team/group collaboration, user motivation and best practice could enable and improve team collaboration by engaging in online tools. Relevant user motivation highlighted the need to delegate team roles in their current role in terms of working efficiency through the right usage of tools to collaborate with their co-workers online (Chasanidou et al., 2016).

Furthermore, individual's motivation in using online collaboration tools for their work involves various factors including gaining an overview of the project and tasks, accessing to source of information which provides visibility to the projects and teams, adapting to the online collaboration tool as part of the company culture, engaging in remote collaboration with their clients, sharing intrinsic motivations with teams, accessing the learning source that expands the systems thinking of the company, gathering all ideas in one place, satisfying their curiosity about the new online collaboration tools and simplicity of use (Chasanidou et al., 2016).

2. CMC Knowledge

Knowledge in CMC competence can be attained by different means like trial-and-error approach, learning from printed or online material, instruction from a colleague or an expert, and systematic education through classes and training seminars (Spitzberg & Bubas, 2008).

Knowledge of how a technical medium operates is not sufficient since it is also necessary to familiarize oneself with the conventions, rules, and roles of communication exchanges through CMC in specific professional environments (Bubas, 2004).

A study by Larsari (2011) looked into the use of CMC tools to promote learners communicative competence through EFL learning that could increase knowledge both input (exposure) and output (use) of the target language that was needed for learners to promote both their linguistic and pragmatic competence. The integration of CMC into EFL learning provided learners with more authentic input and more opportunities to participate in the target sociocultural contexts both linguistic and pragmatic knowledge. Moreover, motivation, learner autonomy, social equality, and identity were encouraged through the use of CMC inside and outside of the classroom.

With less knowledge on the use of computer-mediated tools in any organizational innovation, online technology creates challenges and obstacles such as technophobia where valuable employees who are uncomfortable with computers and other telecommunications technologies (Johnson et al., 2001).

Hence, the more knowledgeable a person is with CMC, the more motivated the person will be to use CMC. Conversely, the more motivated someone is to use CMC, the more knowledgeable the person should become (Spitzberg, 2006).

In addition to acquiring knowledge in the context of CMC use, it consists of both content and procedural forms of knowledge, where content knowledge is understanding the possible communication situation such as topics, rules, and concepts in a CMC context, and procedural knowledge is comprehension of how content knowledge can be applied (Keyton, 2015, Ou et al., 2013, Spitzberg, 2006,2011; Spitzberg & Bubas, 2008).

Thus, CMC use and experience represent a confluence of both content and procedural knowledge.

In the workplace, Cho and his colleagues (Cho et al., 2005) have provided evidence on knowledge sharing on CMC, via a case study, for establishing a social network with the instant message (IM) as IM enhances mutual understanding of individuals and thus promotes collaboration exchange. Employees can ask for, share and exchange knowledge with their contacts easily by using IM. Through knowledge sharing in IM, people maintain a stable work relation with their contacts and hence networks can be formed.

Conceptualizing CMC competence as a function of motivation and knowledge indicates that CMC motivation provides the impetus for more skilled CMC and that CMC knowledge provides the content and procedures for implementing these motives. Motivation and knowledge may at times be merely summative, but they may also interact in certain ways given that a person is more competent than the other (Spitzberg, 2006; Spitzberg & Bubas, 2008).

Also, knowledge of CMC can also be obtained through the use of online information seeking strategies (Ramirez et al., 2002). Such strategies represent a confluence of knowledge and skills, in that goal-oriented tactics are performed to acquire knowledge that will, in turn, facilitate knowledge and competence. Therefore, the constructs that guide knowledge of CMC are likely to be a central component of competence in the computer-mediated domain of interaction.

3. CMC Skills

Skills encompass the actual performance and individuals are often motivated to communicate and possess knowledge yet lack skill in actually communicating (Spitzberg, 2006). Many skill measures tap related variables such as other-orientation, social anxiety, expressiveness, and interaction management (Payne, 2005).

Skill is argued as a repeatable goal-oriented behavior that manifests the ability of an individual to perform a certain communication-related task (Bubas, 2004). The CMC related skills were associated both with the technical system used for CMC and conducted in interpersonal communication (Xie, 2015).

Wrench and Punyanunt-Carter (2007) supported the notion of Spitzberg (2006) and Bubas (2004) that a competent user of CMC possesses four specific skills. First, a competent CMC user shows attentiveness or interest and concern for one's CMC interaction partner. Second, by interaction management, the user attracts a CMC partner by engaging a partner actively and controls the time and relevance of communication. Third, composure is another skill associated with competence, including displaying confidence, mastery, and comfortableness as a CMC interactant. Fourth, expressiveness or filling the CMC interaction with emotion is a skill of a competent CMC user.

Emoji is well used in an online collaboration tool in expressing users' feelings and expressions. Device designers and manufacturers like Apple, Google, and Microsoft (the three largest software companies for mobile devices) all offer emoji preinstalled into their software (Sternbergh, 2014) and due to their open source Unicode programming (Unicode, 2016), virtually every modern computer can display emoji (Warren, 2014).

A similar study by Beattie (2017) looked at how message sources reinforcing emoji would be perceived as more CMC competent than sources using emoticons or verbal-only messages and found that message sources using emoji were rated significantly higher in CMC competence than sources using verbal-only messages.

Assessing communication competence within organizations involves determining the specific communication skills most vital to organizational success. An existing research offers adequate starting points for identifying skills salient to competency judgments, which is important for determining specific competence criterion to use when applying communication competence within the organizational context.

The literature explains that classifying competencies for online collaboration involves the particular challenge of classifying competency that is relevant only because of the online nature of work. Consequently, when competency for online collaboration requires for face-to-face collaboration (e,g., cooperativeness, conscientiousness) that is hard to measure how specific the competencies are for online nature of work. But some scholars argue that such competence mentioned may still work in an online environment as the more online the work becomes, the more important these competencies become (Hoegl et al., 2007). Yet others call for other rigorous tests of competencies with unique relevance in an online work context (Krumm et al., 2013; Schulze et. al, 2017).

B. Contextual factors, media and message selection in computer-mediated communication

Context is a component of learning for CMC competence directed toward awareness of diverse factors like culture, time, relationship, environment, and function of interaction toward motivation, knowledge and skills that facilitate the optimization of communication goals, means, medium choice, and messages in accordance with the specific contextual attributes of interaction. Also, context influences how the message is perceived and plays an important role in the proper reception and production of messages in CMC (Bubas et al., 2004).

1. CMC context

Contextual CMC interaction varies based on cultural, chronological, relational, environmental, and functional features (Keyton, 2015). Culture consists of patterns of behavior, attitude, belief, value, and ritual transmittable across generations (Bubas, 2004). These patterns merge in variables of nationality, ethnicity, race, religion, and gender and while there has been little research on many of these intercultural emphasized at least one aspect that is regarded as an important factor is the issue of gender that is heavily discussed in the context of computer-mediated communication (Spitzberg, 2006).

a. Gender

Studying the context of CMC and gender relationship, Hayes (2003) look at gender in relation to CMC applied in the field of language and education and examine how these impact on the use of Computer Assisted Learning (CAL) course by university students

ranging from second to fourth year both male and female in a 4-week project to learn CMC. Hayes found that using CAL is relatively anonymous and what is being said is important and not who says it. The section on anonymity discusses students' perceptions, which were generally positive. It also revealed that students' choices generally were gender-transparent as they felt it gave them more freedom to express their views.

Hayes also looked at the concept of dominance in CMC and found that males often dominate conversations and that some female participants feel ignored and frustrated by this (Hayes, 2003).

In terms of technical expertise in relation to gender, literature support the fact that male users study the technical aspects more than female users as the use of computers is a different matter and female users seem to show less confidence initially but are equally competent as male students and in many cases, outperform male users (McSporran & Young, 2001).

In terms of identifying gender issues in CMC, gendered communication and access to CMC were explored. Social issues and inequality have generally been ignored in research and the problems faced by women, as well as other groups, in gaining access to and making the best use of the opportunities provided by CMC, both in education and elsewhere, need to be addressed (Yates, 2001).

The literature mentions the potential for learning might be negatively impacted by lower communication in the medium by female students resulting in lower practice opportunities, lower motivation, less direct and indirect feedback, fewer feelings of accomplishment and negative affective factors such as feelings of alienation and less control over the learning environment (Hayes, 2003).

On the other hand, in the Philippines where CMC is utilized in the outsourcing organization, this service sector offer present and future opportunities to expand and advance women's employment and become an important source of employment for college-educated men and women (ADB, 2013).

The expansion of employment and improvement of decent work opportunities for women in the outsourcing sector ensure that women obtain appropriate skills across all categories of present and future outsourcing activities, increase the entry of women into the areas presently dominated by men, such as hardware and software and technology-based jobs (ADB, 2013).

In the last study conducted by the Philippines Statistics Authority (2017), they recorded that more than half of the outsourcing workforce in the Philippines were females and full-time workers paid on a monthly basis. Women in the Philippines have significantly lower employment rates than men which in 2012 gave rise to a gender gap of 26.2 percentage points in the employment rate (ADB, 2013).

b. Age

Another contextual factor to consider is the chronological facet that has been studied in a wide variety of ways. In particular, age is one of the key variables in this study because it relates to the use of technology that enables computer-mediated communication as age and developmental changes reflect the influences of time within the individual as well as cohort effects over time (Spitzberg, 2006).

A study published by the Philippine Statistics Authority (2017) recorded in their 2014 survey that the majority of the age composition of the outsourcing workforce in the Philippines are ages 15 to 30 years old.

This result is not far from the results conducted by Beerepoot & Hendriks (2013) and Montalbo (2016) which noted that majority of the employees' in the Philippine outsourcing were between 18 to 30 years old or relatively, the young workforce followed by Filipino employees age 31 to 45 years old involve from low skilled to high-skilled complexity of work operations, rank and file full-time regular workers.

These employees are employed in the sub-sectors of outsourcing including operations in the Information Technology and Computer Service activities, Application Development, Engineering, Multimedia, Data Processing, Sales and Marketing (e.g. from telemarketing to analytics), and Customer Relationship Management (CRM) activities where companies from the United States of America and the United Kingdom are clients, customers, and business partners (PSA, 2017).

c. Physical environment

Another component that in a large part is instantiated by the features of computer-mediated communication is the physical environment that refers to a place or situational facet of CMC interaction (Spitzberg, 2006, Bubas, 2004).

A distinct example of the physical context that this study is interested to explore are the concept of geographic proximity and the CMC technology in terms of individual's usage and interactivity. Literature suggests that communication technologies are used more to compensate for geographic distance in relationships (Baym et al., 2004).

Burgoon et al. (2002) found proximal CMC forms of interaction were perceived as higher in perceived sociability, connectedness, and task attraction.

In the context of Filipino's exposure and training in the CMC environment, a study by Labucay (2011) looked into the patterns of Internet use and indicate the presence of Internet usage being higher in the National Capital Region than in the provincial areas, in urban areas, who are among middle-to-upper classes ABC, the college graduates, and the youth. Furthermore, Filipino Internet users access the Internet largely for social networking rather than information seeking or learning, creativity and production, commercial activities, and entertainment and leisure play (Labucay, 2011).

While most of the Filipino users of the Internet majority consume time using social media, businesses have been influenced with this innovation and increasingly faced with the need to improve Internet technology to maintain a competitive foothold for effective professional collaboration (Jones, 2012).

A study conducted by Dimensional Research (2015) found that present companies depended on modern technology to collaborate and better connect employees and its external business partners as well as make it easier for information to flow between all parties.

Though all knowledge and skill acquisition must be acquired through some type of learning, it is relatively rare for individuals to learn to use CMCs through formal training or lecture (Xie, 2015) but in the study by Del Villar (2010), training, as well as exposure in the use of technology, seem significant. Her study about the Filipino students' performance that utilized computer-mediated technologies explored the possibility of developing a model that would allow a teacher to predict students' overall performance in

a basic oral communication class. From among 11 established variables, the study found that only three could be used to predict students' performance: training, exposure and gender. Moreover, from the qualitative data, it was revealed that a common denominator was central to almost all students who performed well was exposed to different forms of computer-mediated technologies not only during the students' years prior to the course but more so during their stay in the university (Del Villar, 2010).

2. Media selection

Media selection as media sensitivity is suggested as a necessary component of education for CMC competency and is defined as the awareness of different characteristics of communication media that affect how and for what purpose a medium is used to perform specific communication acts that could be judged both as appropriate and effective in achieving explicit and implicit communication objectives (Morreale et al., 2001).

Media sensitivity is related to an optimal medium choice for diverse interpersonal tasks and is affected by medium factors like interactivity, adaptability and efficiency (Walther & Parks, 2002). Other factors that should influence medium choice and pattern of use are typical media attributes like richness, speed, level of social presence, and accessibility (Bubas et al., 2004).

Education and training in media sensitivity may include methods that positively affect motivation, knowledge and skills as aspects of CMC competence, as well as the use of the component outcomes evaluation since performance feedback when different media are used can induce improvement in media sensitivity (Spitzberg, 2011). The

elements of the medium (richness, interactivity, speed, level of social presence and accessibility) should guide the process of setting communication goals, interaction planning, and message design (Bubas, 2004; Keyton, 2011).

Newly introduced interpersonal media based on updated communication mechanisms, produce specific interactive styles that are different from earlier patterns of social behavior (Herring, 2000) because social interactions are likely to be affected by communication tools (Myers, 2008).

Individuals' perception of their capability to manage interpersonal media as a precondition for mediated interaction is related to self-efficacy. Bandura's (1977) conception of self-efficacy implies an individual's cognition, through which one evaluates one's own ability and initiates a psychological process to complete designated types of performances in the near future. Later, scholars have found that self-efficacy and the variety of behaviors in using computer technologies are related (Compeau & Higgins, 1995).

Compeau and Higgins (1995) predicted that self-efficacy would affect the task performances using computer technologies and described computer self-efficacy, a judgment of one's capability to use a computer for a purposive task. Then, by extending the range to Internet-based works for interpersonal networks, the concept of Internet self-efficacy was proposed to explain one's estimation of his/her ability to use Internet technologies (Torkzadeh & van Dyke, 2001). Consequently, media efficacy for interpersonal media refers to the belief in one's ability to use an interpersonal medium proficiently to perform interactions. As self-efficacy positively affects the related

performance (Bandura, 1982), one's media efficacy would have some effects on the interactions through media.

Likewise, media efficacy estimates not simply an individual's technological skills, but also the effects of the cognitive process during mediated interactions since individuals' cognitive reactions toward manipulating the functions of an interpersonal medium might be several even within the same interpersonal medium, levels of media efficacy can differ with each individual and according to the communicative situation at hand (Hwang, 2011).

In mediated communication, making optimal use of the media environment can be crucial to achieving efficiency in one's interactions. Usually, due to a relative lack of nonverbal cues and restrictions in relation to the conversational environment itself, people cannot deliver their intended messages through an interpersonal medium as precisely as they would in face-to-face communication (Kruger et al., 2005).

People tend to interact less attentively in a mediated situation (Umphrey et al., 2008). However, they can achieve better communication results within a mediated conversation if they exert communication skills to overcome the interactional circumstances where nonverbal cues, as well as the clarity of intended message, become reduced and take advantage of them (Hwang, 2011).

As media efficacy is a concept that originated from self-efficacy, media efficacy and communication competence could be positively connected (Hwang, 2011).

3. Message expression

Messages differ in relation to various content elements and can be task-oriented or more personal and emotional as content may differ in openness/sincerity and also vary in quantity and complexity (Bubas, 2004) and these can positively influence the outcomes of evaluation.

In CMC, it is important to craft the outgoing message to the attributes of the communication channel and receivers and also to decipher the incoming message bearing in mind both the channel and sender features. Some of the related elements are present in netiquette rules for different forms of CMC that can be found in many locations on the World Wide Web (Hambridge, 1995). These factors constitute message sensitivity as a component of education for CMC competence.

The message factors (complexity, equivocality, quantity, and emotional content) are difficult to transmit messages wherein the lack of nonverbal cues can deepen ambiguity, the emotional content is transferred with deficiency and recipients find it difficult to retain attention to extensive messages (Bubas, 2004).

This review of literature in CMC context provided that CMC competence varies based on diverse factors as discussed and how context influences the optimization of communication goals, media choice and messages according to specific contextual attributes of interaction. In this study, concepts such as gender, age, geographic proximity, technology exposure and usage, and culture in terms of communication context, power distance, and individualism/collectivism will be explored as part of the CMC contextual domain, and the outsourcing organization that highly uses CMC technology in their daily operations.

Also, media selection through sensitivity and choice in terms of appropriate and effective technology, the interactivity of communication tool and efficacy in terms of individual's skillful use of CMC tools will be linked in this study. On the other hand, message selection through the concepts of complexity, equivocality, quantity, and emotional content will be applied in this study.

In this study, contextual concepts such as culture, time, and interaction will be attributed to the contextual process of interaction using CMC technologies. This research endeavor will link these contextual factors in the use of CMC, particularly the concept of gender in terms of male and female users of CMC technology, chronological facet in terms of how CMC user relates to the use of technology that enables computer-mediated communication, physical environment as referring to the geographic proximity and user's CMC technology experience. While the researcher acknowledges that culture is a broad concept, this study will look into the concept of culture as applied in CMC context in terms of high and low communication context, the concept of power distance in view of Filipino users as they interact with other nationalities in the outsourcing organization. The contextual factors, media selection and message expression and CMC competence that will result in the communication competence outcome in using online collaborative communication tools of Filipino employees will be linked in this study.

C. Online Collaboration

Some authors sought to identify individual qualities required in web-based work and online collaboration (Hertel et al., 2005; Schulze & Krumm, 2017; Wang & Haggerty, 2011); research has not yet reached a consensus concerning which

competencies are particularly relevant for certain forms of digital work. A review by Gilson et al. (2015) conceded that online competence has been explored minimally. While the body of research on face-to-face collaboration has suggested ample relevant competencies, it has to acknowledge that it is neither totally transferable nor complete in the online environment (Furst et al., 1999).

In exploring the concept of CMC competence to online collaboration, several competency model approaches have been studied in view of individual difference constructs and methods. In identifying competencies for online collaboration, the concept of competency must first be defined. The term competency has a variety of meanings both in research and practice (Shippmann et al., 2001). The notion of competencies in the scope for effective online collaboration may include all kinds of individual difference constructs like motives, attitudes, personality traits (Shippmann et al., 2001).

One of the most generic competency model is the great eight competency framework (Bartram, 2005), derived from a synthesis of organizational competency models. This model includes eight broad competency domains subdivided into 20 smaller competency dimensions and among those, only one dimension explicitly targets technology. It is explained as "applying expertise and technology" and is part of the broader domain of analyzing and interpreting. As technology has penetrated many aspects of work, more competencies need to be considered to capture the requirements of online collaboration (Furst et al., 1999).

Krumm and Hertel (2013) summarized the overlap between available competency model for face-to-face collaboration:

> "A good team player is willing to do a fair share of the team's work, communicates relevant information effectively, has a good understanding of the overall team goals and monitors the team's progress towards the set goals, has a high performance standards, has an overview of other team members' tasks, can coordinate task completion appropriately, and is well accepted by the other team members." (p.82)

However, no obvious links to technology-related challenges and corresponding requirements are provided in these models.

In terms of competency model developed specifically for online collaboration, Shin (2004) employed a theoretical person-environment fit approach focusing on organizational, cultural, temporal, and spatial dispersion as online environment positing that web-based organization varies on these environment dimensions. The main assumption of the model is that these dimensions moderate the extent to which certain individual qualities lead to perceived person-environment fit (Shin, 2004). Shin also theorized that computer literacy, trustworthiness, willingness to trust, lateral skills (the skills to cooperate with and learn from individuals with a variety of backgrounds), and online communication skills are crucial antecedents of person-environment fit perceptions within all four online environment dimensions.

Furthermore, an empirical competency modeling approach, Blackburn et al. (2003) interviewed 25 experts in online collaboration. They found the following set of skills on the individual level: To behave proactively and manage themselves, to select the most appropriate transmission medium and to seek and interpret feedback, to build and maintain trust, and to be confident and competent in using the relevant technology.

Another study by Lee-Kelley and Sunkey (2008) of competency modeling approach compared efficient and inefficient online collaborators. They conducted semi-structured interviews with 11 managers of virtual project teams. The interviews thematically identified key issues of online project teams, which in turn allowed for the derivation of the necessary competencies to handle such challenges. They concluded that personal project management competencies, appropriate use of technology and networking, willingness for self-management, and cultural and interpersonal awareness were crucial for online team project success (Lee-Kelley & Sunkey, 2008). Krumm et al., 2016) and also sought to identify competencies for online collaboration by comparing two groups. They asked members of online and traditional teams to rate the importance of competencies organized along the great eight competency framework (Bartram, 2005). The results revealed that competencies related to "leading and deciding" (e.g., skills to work independently, with initiative) and "analyzing and interpreting" (e.g., skills to communicate in writing, to use communication media effectively) were considered more important in online forms of collaboration that is in online teams.

Aside from competency modeling approach, several studies have used a regression analytic approach to derive competencies for web-based and online collaboration. Hertel et al. (2006) used a set of theoretically derived competencies to predict performance in online teams. From the initial set of predictors, conscientiousness, integrity, loyalty, and cooperativeness (individual level), as well as creativity, learning orientation, and independence (on the team level) significantly predicted performance in online teamwork.

Wang and Haggerty (2011) also used regression analytic approach where they created the umbrella term “individual online competence” and argued that it comprised online self-efficacy, online media skills, and online social skills. The authors (2011) defined online self-efficacy as an individual’s self-concept about their ability to meet the challenges imposed by online work. Online media skills represent the skills to use “technologies to communicate in an online setting to their full potential” and online social skills refer to the “ability to build social relationships” with others in an online setting. Empirical results from their online survey among alumni of North American business school with 199 samples working in industries such as consulting, trading, and financial services confirmed that the broader constructs of individual online competence significantly predicted work performance and job satisfaction.

Conversely, the individual online competence latent variable was mainly built by online media skills and remote work self-efficacy but not by online social skills or computer self-efficacy. While the construct of remote work self-efficacy addresses individual confidence to perform well in an online work context, computer self-efficacy is conceptualized as a belief in individual’s ability to complete a job with new software under various conditions with or without support or with a manual on the only reference (Wang & Haggerty, 2011).

Spitzberg (2006) applied regression analytic approach in developing a competency model specifically for computer-mediated communication and applying the CMC competence model. Bubas & Spitzberg (2008) analyzed the relationship between communication competence skills in face-to-face and computer-mediated interpersonal interactions among 157 students of Information Systems and Economics at the University

of Zagreb, Croatia who were Internet users. They found that CMC competence skills are likely to be influenced by face-to-face communication skills. The degree to which these constructs are related is influenced by the Internet-based media (online communication tools) that are used for online social interaction.

Bunz (2006) investigated the changes in computer-mediated communication competence due to the exposure and active use of CMC technology in the classroom and looked into the implications of this technology in the instructors' use and requirement of student use of technology for educational purposes with 39 students participating in a survey. Technologies used throughout the semester included e-mail, chat, discussion board, Blackboard, and file transfer protocols. They found that students who perceived their CMC competence to be low at the beginning of the semester seemed to have retained that opinion. The study did not assess actual competence by using CMC technologies but only perceived competence, thus, there was no information on whether these particular students underestimated their abilities.

Even in the field of science, online collaboration tools improved communication between scientists which resulted in the proliferation of scientific opinion, data and knowledge at an ever-increasing rate (Williams, 2008). This speeds up research and sharing of results, develops extensive collaborations, conducts science in public, and in near-real time to support chemical structures and reactions, analytical data support and integration to related data sources via supporting software technologies (Williams, 2008).

In this review of the literature, the concept of competence is explained in the context of online collaboration through several competency models and methods (Bartram, 2005; Blackburn et al., 2003; Hertel et al., 2006; Lee-Kelley and Sunkey, 2008;

Shippmamnn et al., 2001; Shin, 2004; Spitzberg, 2006; Wang & Haggerty, 2011). Since this study focuses on the nature of communication competence particularly in the context of online communication, it will support the literature applied as a regression analytic approach by Spitzberg (2006) utilized in CMC context and it is the appropriate method to evaluate the CMC competence of Filipino employees in using online collaborative communication tools. Other mentioned competency models and its results will be used in the discussion of this research study.

The study will focus on how the user's CMC competency relates to the CMC competence outcome in using online collaborative communication tools. This research would like to look into the optimization in the choice of media and pattern of their use for online collaboration that combines factors like the task, message expression, media mix, interaction partners, CMC competence, context and optimal outcomes.

D. Competency outcomes

As Spitzberg (2011) has described the model of communication competence that motivation, knowledge, and skills predict impressions of competence, which is typically tested by treating appropriateness, effectiveness, clarity, satisfaction, and attractiveness as criterion outcomes of competence interaction with the various motivational, knowledge and skills constructs as predictors, usually, these outcomes should be positively related to CMC competence but in any given context, communicators may strategically sacrifice one or more outcomes for others, especially when the outcomes are perceived to be mutually incompatible (Spitzberg, 2006; Bubas & Spitzberg, 2008).

As CMC competence increases, co-orientation, appropriateness, effectiveness, satisfaction, efficiency and attractiveness outcomes are more likely to occur. However, it is important to point out that CMC interaction is often highly strategic, and interactants sometimes elect to communicate in strategically ambiguous ways (Spitzberg, 2006) and in ways that favor efficiency over appropriateness (Bertacco & Deponte, 2005).

People often construct or perceive that they strategically select messages according to the medium of exchange to the extent effectiveness are valued over appropriateness, self-satisfaction is more likely to increase relative to the satisfaction of involved in the interaction (Spitzberg, 2006).

CMC users vary their media selection based on their impressions of appropriateness and effectiveness and these proximal criteria are likely to be supportive of more terminal goals and objectives (Keyton, 2015; Spitzberg, 2006).

A study by Hullman (2004) used a post-test design to examine the influence of message design logic and motive on communication effectiveness and appropriateness to college students. First, messages were developed according to message design logic and motive conditions resulting in 24 conversations between the participant and a friend as the conversations were designed not to be persuasive. Participants evaluated each conversation with Canary and Spitzberg's (1987) Conversational Appropriate and Effectiveness Scales and he found that message design in this context did not predict effectiveness, although effectiveness and appropriateness scores were correlated. Another study in the organizational context also makes predictions about communication competence outcomes with working professionals as participants. Teven et al. (2006) found that when a supervisor is perceived as having Machiavellian tendencies, he or she

is also perceived as being less credible being competent and is one sub construct credibility measure.

Another study by Garner (2012) studied how participants' manner of presenting dissent messages to a supervisor or co-worker influenced their perceptions of their effectiveness and appropriateness using Canary and Spitzberg's (1987) Conversational Appropriateness and Conversational Effectiveness scales. Findings revealed that dissent messages that presented solutions and used circumvention and repetition were effective whereas dissent messages that used coalition building were ineffective. With regard to the appropriateness, dissent messages that presented solutions and those with factual appeals were perceived as appropriate whereas dissent messages that included pressure tactics or humor were inappropriate.

Moreover, a study in organizations was sought in the context of communication competence as predictors. As one example, Madlock (2008) examined if supervisor communication competence influenced the outcomes of employee self-reports of job and communication satisfaction. Working adults evaluated their supervisor by responding to Monge, et al.'s (1982) Communicator Competence Questionnaire. In comparing a supervisor's communication competence to employee's perceptions of leader task and relational leadership style, communication competence accounted for significantly more variance in employee communication satisfaction and employee job satisfaction.

The idea of communication competence that includes both a self-perception of effectiveness while also generating a perception of effectiveness and appropriateness from the perspective of one's partner was explored by Arroyo and Segrin (2011). They asked early adult same-sex friend dyads using Wiemann's (1977) Communication

Competence Scale to create self and other-ratings. The results found that as people rated their own communication competence more favorably, their satisfaction with and commitment to their relationship increased. The same effects occurred when people rated their friends' communication competence as higher. Thus, communication competence led to greater relational satisfaction and relational commitment. Solely, being communicatively competent with friends' led to increased relational strength (Arroyo & Segrin, 2011).

Looking at the negative side of interpersonal relationships, McManus and Donovan (2012) examined parent-child conversations in families in which separation or divorce occurred. In an experiment, Parent–young adult child dyads came to a lab to talk about a divorce/separation-related topic. Prior to the 10-minute conversation, the young adult children evaluated their parents' perceived communication competence with Guerrero's (1994) five-item generalized Communication Competence Scale. Questionnaires captured the young adult children's measures of their parents' perceived ambiguity, relational closeness, and relational well-being. As predicted, the higher the perception of parent communication competence, the fewer ambiguity children perceived during the conversation. Alternately, when parents were viewed to be less communicatively competent, children were more likely to perceive multiple interpretations of parents' messages (McManus and Donovan, 2012).

In terms of learning instructions, communication competence in instructional settings has also been examined in designs in which competence is positioned as an outcome variable. Canary and MacGregor (2008) designed a study to differentiate between ideal and less than ideal students and then asked if the communication behaviors

of these two groups of students predicted teachers' perceptions of their competence responding to the Student Communicator Inventory (SCI) and a single competence item for an ideal and for a less than ideal student. Teacher evaluations on the SCI clearly distinguished between ideal and not so ideal students. Moreover, ideal students were evaluated as more competent than less ideal students. In this case, the items of the SCI predicted teachers' perception of students' competence.

In the context of a healthcare organization, Wright et al. (2010) examined if health care workers' self-reported communication competence led to lower stress and greater social support satisfaction. They found that communication competence to be an important predictor of organizational outcomes such as perceived stress and perceived job burnout. Using communication competence as an exogenous variable in a more complex design clearly positioned communication competence as a predictor.

Across the studies, researchers presumed that some communicative feature influences the presence and degree of communication competence. Existing literature presumes that the presence of communication competence will result in some type of first-order communicative outcome (impression of ambiguity, communication satisfaction, attractiveness) and first-order non-communicative outcome (less perceived stress and job burnout, reduced personal accomplishment, job satisfaction, organizational identification). Thus, communication competence is the outcome being sought and these studies provide evidence that being communicatively competent matters and can be enhanced (Keyton, 2015).

Thus, in this study, conceptualized communication competence outcome being sought such as co-orientation, appropriateness, effectiveness, satisfaction, efficiency and

attractiveness will be applied in this study with CMC competence motivation, knowledge, skills, and context as predictors of these outcomes.

E. Synthesis

The literature discusses the concept of CMC competence based on an individual's ability to communicate effectively. That, not only CMC influences the ability and role of a user in online teams. How it is being used and who is using it are vital considerations to evaluate the factors and outcomes of using online collaborative communication tools.

Studies have shown that there are inter-individual differences in communication efficacy and personality that can affect how people communicate and build relationships in an online context. As such, it is likely that a user's self-perceived competence in communicating online can have a significant impact on successful collaboration within the team.

Furthermore, studies provided in the literature began to investigate communication competence focusing on the use of online collaborative communication tools but there are more in-depth studies that highlight CMC competence as a concept on its own (Bunz, 2003; Spitzberg, 2006), in an instructional context (Bubas, 2001, 2004; Rice & Bunz, 2003), intercultural (Matveev & Del Villar, 2014), organizational context (Payne, 2005) or technology-mediated contexts (Bakke, 2010; Bunz, 2003; Hwang, 2011; Wrench & Punyanunt-Carter, 2007; Chua & Chua, 2017; Schulze et al., 2017), face-to-face communication competence versus CMC competence (Hwang, 2011; Schulze et al., 2017).

Findings on competencies for online collaboration vary across studies in terms of teamwork (Hertel, 2006; Spitzberg, 2006), work context (Krumm et al., 2013; Wang & Haggery, 2011) and individual personality (Blackburn et al., 2003; Hertel, 2006).

Lastly, given that CMC technology was widely utilized in a different context, few researches provided focus on the organizational context where CMC technologies are heavily utilized. The goal of this research endeavor is to provide a clear understanding of the interaction between motivation, knowledge and skills as it should be applied to computer-mediated organization context particularly in the Philippine outsourcing organization.

F. Research Gap

Before, personal computers were relatively new and users were inexperienced with the CMCs. However, the online experience is now ingrained into the users' everyday lives and it would not be difficult to argue that the present society is more technologically literate than before (Xie, 2015). Due to the fast-paced innovations on the computer-mediated technologies and the scarcity of researches about competence in relation to the online collaborative communication tools, there is a need to explore the development of computer-mediated communication competence of the users and the outcomes of these competencies evident through the use of current online communication platforms. Thus, it would make sense to re-examine the use of CMC technologies using experiences with online collaborative communication technologies.

Provided that organization today utilize modern online collaborative communication tools in communicating and collaborating, there is a concern on the

employees' ability to communicate effectively in using CMC. That, not only is it the CMC being used that can affect communication and collaboration in the workplace online, but also how the CMC is being used and by whom.

Furthermore, outsourcing industry in the Philippines is an important realm of the study as it is one of the contributors of the economic advancement thus relatively necessary to focus on it to recognize how the business communication in this organizations must be improved. These types of organizations highly utilize computer-mediated communication technologies in everyday business dealings, therefore, the use of online collaborative communication tools in various forms are considered very critical in everyday work life. This study, in its truest sense, would like to contextualize on how the Filipino communication competence has been shaped or reshaped while using these CMCs, specifically, the innovative online collaborative communication tools at present. The components of the communication competence can be systematically applied to the computer-mediated context which is the goal of this research.

CHAPTER III. STUDY FRAMEWORK

This chapter discusses the theoretical, conceptual, operational, and analytical frameworks of the research in line with the review of the literature and the study objectives.

A. Theoretical Framework

1. Computer-mediated communication competence

Communication competence is a term coined by Spitzberg (1983) and represents an individual's competence and effectiveness. The main components of communication competence are motivation, knowledge and skills that correspond to their parallels in face-to-face communication (i.e. composure, attentiveness, coordination, expressiveness).

The concepts originated from the work done by Ring and colleagues using a dramaturgical perspective in conceptualizing an actor's performance (Ring et al., 1966). They contend that an actor needs to be motivated to give a good performance but motivation by itself is insufficient if the actor does not have the script for how the play should go (knowledge). However, even possessing both the motivation and knowledge is insufficient if the actor lacks the skills to translate that motivation and knowledge into competent action. These concepts are significant and instrumental in the development of communication competence.

The concept of communication competence motivation, knowledge, and skills are translated by Spitzberg (2006, 2011) to the conceptualization of the contextual factors, CMC competence (motivation, knowledge and skills), media and message selection, and competency outcomes in computer-mediated communication. The framework for

computer-mediated communication competence integrates the variables related to the individual (knowledge, motivation, skills) with situational variables (media, message, context) and interaction outcomes (appropriateness, effectiveness, satisfaction, clarity, productivity/efficiency). The model proposes, based on traditions of psychology dating back to the 1950s, that any behavioral phenomenon can be understood as a function of five primary theoretical domains: Context, motivation, knowledge, skills, and outcomes (Spitzberg & Bubas, 2008; Spitzberg, 2011; Keyton, 2015).

a. CMC motivation

CMC motivation is meant to capture the range of constructs that would endear a person to look favorably upon CMC such as willingness to adopt new communication technologies, satisfaction, gratifications, and positive attitudes toward such technologies. Individuals with high CMC motivation are characterized by confidence and comfort in using CMC whereas negative motivation towards CMC use is characterized by anxiety, apprehension, apathy or even disinterest towards using CMCs (Spitzberg, 2006). Spitzberg formally defines CMC motivation as "the ratio of approach to avoidance attitudes, beliefs, and values in a given CMC context." As such, it would suggest that individuals may differ in their willingness to use CMCs, independent of the richness or naturalness of the CMC.

b. CMC knowledge

CMC knowledge is formally defined "as the cognitive comprehension of content and procedural processes involving in conducting appropriate and effective interaction in

the computer-mediated context." Thus, an individual possessing a high amount of knowledge regarding CMCs would be expected to be able to effectively adapt their communication style to the CMC context and also possess the procedural knowledge needed for utilizing different CMCs (e.g. understanding the role of emoticons in messages) (Spitzberg, 2006, Xie, 2015). While all knowledge and skill acquisition must be acquired through some type of learning, it is relatively rare for individuals to learn to use CMCs through formal training or lecture (Xie, 2015). One manner in which individuals may come to acquire CMC knowledge is through experiences and repeated interactions with CMC. As such, one manner in which we can view CMC knowledge is by the breadth and depth of communication schemas attained through past experiences (i.e. learned schema diversity principle) (Spitzberg, 2006).

c. CMC skills

Spitzberg defines skills as "the repeatable, goal-oriented behavioral tactics and routines that people employ in the service of their motivation and knowledge." In a previous study, Spitzberg and Cupach (2002) identified over 100 distinct skills in the communication competence literature but ultimately were able to refine them into four central skill clusters: Attentiveness (i.e., displaying concern for, interest in, and attention to the other person or persons in the interaction), composure (i.e., displaying assertiveness, confidence, being in control), coordination (i.e., displaying deft management of timing, initiation and closure of conversations, topic management), and expressiveness (i.e., displaying vividness and animation in verbal and nonverbal expression). It is thought that these skills reflect basic principles of effective

communication, and thus an individual with high CMC competence should be able to adapt these skills to the CMC context.

Spitzberg and his colleagues identified that most of the skills and competencies could be categorized in view of components classified into four basic clusters or families of skills: Attentiveness, composure, coordination, and expressiveness.

Attentiveness is the skill of paying attention to, interest in, and concern for other interlocutors in the communicative context that includes but not limited to listening, topic continuance and follow-up, and asking questions. Composure is the skill of displaying calm, confidence, and a sense of control over one's actions where speech tends to appear purposeful, coherent and consistent with communicator intentions. Coordination refer to the non-disruptive management of the ebb and flow of the communicative interchange that involves entering into, initiation of, maintenance of, and closure of or exit from interaction sequences and episodes. Coordination includes behaviors involved in turn-taking, topic initiation, balancing of talk time or verbal activity, interruptions, overlap, response latencies, and topic maintenance. Expressiveness refer to the variation animation of verbal and nonverbal behaviors that capitalizes on variability in intensity, rate, extremity, and activity levels of movement and speech and the degree to which these factors comport with the intended speech acts being produced. This classification of communication skills has been translated into several assessment approaches (Spitzberg, 2006).

If motivation in a given prospective communication encounter elicits relevant knowledge search, motivation and knowledge are activated toward the development of action plans for the performance of actual behaviors. Over time, as more episodes and

types of communication are encountered in a person's socialization and life experiences, the performance of behaviors becomes repeatable, generalizable, adaptable, and goal-directed that is, behaviors become skills (Spitzberg, 2003). It is not immediately obvious which skills are most involved in facilitating competent outcomes in the CMC context.

Therefore, motivation represents the initial energizing process of knowledge search and application which manifests through the selection of skills that are applied to the selection of media and messages. Certain motivations are better served by certain media features and messages. Knowledge of the most competent messages and media is searched and selected accordingly and subsequently implemented through the skills of CMC (Spitzberg, 2006).

d. Contextual factors

Spitzberg (2006) contextualizes other elements in relation to CMC competence that interact with the users of computer-mediated technology including context, media, and message.

Culture, chronemics, relationship, environment, status, time pressure, distance, and function where interaction occurs in a milieu of intersected semantic modalities and spaces are related to CMC context (Bubas et al., 2004).

The content, meaning and pattern of CMC are influenced by context-related attributes, highlighting the level of self-disclosure or degree of openness, timeliness of response, relationship quality, environment, and function of the interaction process where conflict or cooperation happens (Spitzberg, 2006; Bubas et al. 2004).

Media technology has expanded the availability of interpersonal channel choices. New media technology can fulfill traditional interpersonal needs (Williams & Rice, 1983). Common media factors are interactivity, adaptability, and efficiency (Spitzberg, 2006; Bubas et al. 2004). It emphasizes the richness, interactivity, speed, level of social presence, and accessibility that guide the process of setting communication goals, interaction planning, and message design.

In terms of relationship in the use of the medium, the relationship level determines the choice of a medium and the use of humor, self-disclosure, expressiveness, and emotional exchange (Bubas, 2004).

Message factors refer to socio-emotional content, frankness, quantity, equivocality, complexity and individual competence in CMC that can be assessed by the outcomes of interaction where these are difficult to transmit messages (Spitzberg, 2006; Bubas et al. 2004). The lack of nonverbal cues can deepen ambiguity or emotional content that is transferred with deficiency and recipients find it difficult to retain attention to extensive messages (Bubas, 2004).

Therefore, the messages transmitted through the selected media are filtered through the receivers' expectations for messages in those media. Those expectancies are products of the receivers' experiences with CMC and of the receivers' culture, chronology, relationship, environment, and the anticipated function of the messages. Through ongoing interaction, these expectancies are fulfilled, violated, or renegotiated, and the product of the message exchange and the degree to which expectancies are fulfilled or violated predicts the outcomes of the process for both the original sender and the co-interactant (Spitzberg, 2006).

e. Competence outcomes

Assessing competency outcomes in terms of interaction that are not adequately achieved requires improvement in CMC competence. Outcomes of interaction in CMC competence can be categorized according to appropriateness, effectiveness, satisfaction, clarity, productivity or efficiency (Keyton, 2015; Spitzberg, 2006; Bubas et al. 2004).

Clarity is related to the level of the understanding of the message or the degree of correspondence between the intentions of the sender and the interpretations of the receiver of the message in CMC (Spitzberg, 2006; Bubas et al. 2004).

Appropriateness refers to the degree to which certain communicative behavior is perceived as suitable to the context and the degree to which CMC is fitting and acceptable in a given social or professional context (Spitzberg, 2006; Bubas et al. 2004).

Effectiveness refers to the degree to which various communication goals are realized in CMC (Spitzberg, 2006; Bubas et al. 2004).

Satisfaction is the positive response of an individual to the realization of certain communication-related needs, aspirations and objectives which denotes the level at which the messages are interpreted in relation to how it is intended by the sender that denotes that both the sender and receiver of the message have a feeling that positive expectancies of CMC have been fulfilled (Spitzberg, 2006; Bubas et al. 2004).

Productivity or efficiency means that the realization of communication goals can be assessed from the perspective of the economy as a consequence of a more or less optimized investment of resources related to the amount of investment like time, people, and resources in relation to how much of the planned results of CMC were achieved (Spitzberg, 2006; Bubas et al. 2004).

The factors of individual CMC competence (CMC motivation, CMC knowledge, and CMC skills) interact with attributes of the context, medium, and messages to create outcomes that can be assessed on the basis of co-orientation, appropriateness, effectiveness, satisfaction, productivity or efficiency (Spitzberg, 2006).

Spitzberg (2006) argues that when CMC competence increases, appropriateness, effectiveness, satisfaction, clarity, productivity and preferred relational outcomes are more likely to occur.

In conclusion, the model proposes that any behavioral phenomenon can be understood as a function of five primary theoretical domains: Motivation, knowledge, skills, context, and outcomes. In communication competence, the model proposes that an individual is more likely to be perceived as competent to the extent that the person (a) is motivated to make a good impression, (b) knowledgeable about the context and interaction involved, (c) skilled at performing this motivation and knowledge, (d) adapts such motivation, knowledge and skills to the context of interaction, and (e) achieves relatively valued outcomes in the episode or relationship.

With this notion, this study looked into the relationship between individual user's CMC motivation, knowledge and skills, specifically how individual's CMC competence relates to the CMC competence outcome in using of online collaborative communication tools in the context of outsourcing.

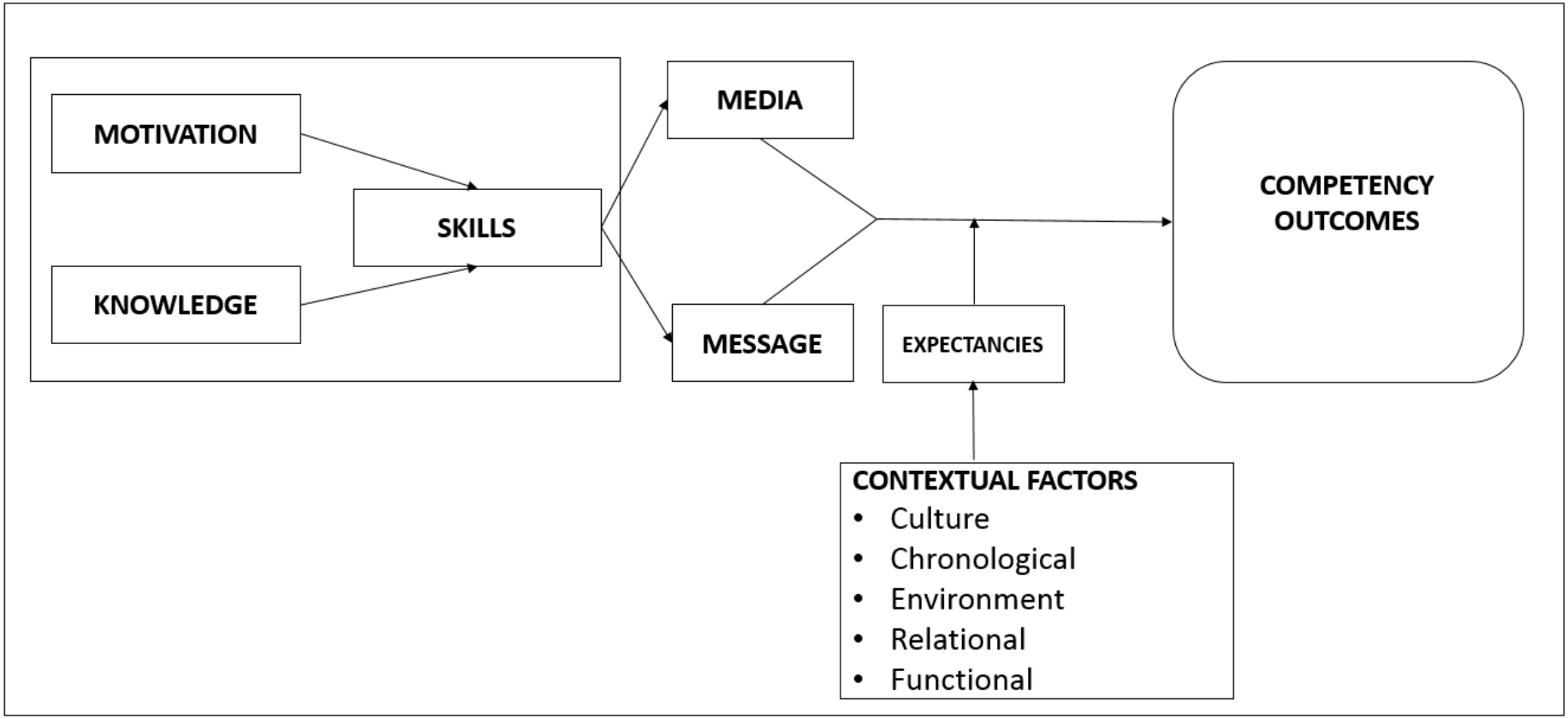


Figure 1. Theoretical model of computer-mediated communication competence (Spitzberg, 2006)

B. Conceptual Framework

There are five main variables to this conceptual framework. These are the following: a) the demographic profile of the users, b) the context of CMC interaction, c) CMC competency, d) media and message selection of Filipino employees, and e) competency outcomes in the use of online collaborative communication tools. As stated, all of these occur in the context of the offshore outsourcing organization.

To generate specific contextual operationalization of CMC competence, this study theorized and aligned the contextual factors as the independent variable of CMC competence and competency outcomes. The study integrated the Great Eight Competency Model by Bartram (2005), specifically, adopting the analyzing and interpreting competence concept that is instrumental in the delivery of desired results or outcomes. The component "analyzing and interpreting" in the Great Eight structure provides an articulation of the work performance domain that is consistent with a wide range of models used by practitioners in competency practice and supported empirically by the way in which competency rating cluster when subjected to factor analysis (Bartram, 2005). Concepts such as writing and reporting, applying expertise and technology, and analyzing are the domain of analyzing and interpreting component.

These concepts were positioned as the predictor variables towards CMC competence, media & message selection and competency outcomes. The study integrated non-mediated functions to demonstrate that being CMC competent had outcomes that were useful, beneficial, and practical and to better position the constructs in an applied context, specifically, in an organization that heavily utilized online communication tools.

Contextual factors were directed towards the function of motivation, knowledge and skills. The study looked at how users analyzing and interpreting competency to interact with their CMC competence when they were already utilizing online communication tools in communicating and collaborating. To add in the conceptualization of contextual factors, the demographic profile of the users was also included in the concepts of the study.

CMC competence is conceptualized based on how Filipino employees' motivation, knowledge, and skills are integrated into the context of providing data solutions through the use of online collaborative communication tools in communicating and collaborating with their colleagues abroad.

Filipino employees' competence in CMC begins with motivation as an important prerequisite. In this model, Filipino employees' CMC motivation intends to capture the range of constructs that would endear a person to look favorably upon CMC such as willingness to adopt new communication technologies, satisfaction, gratifications, and positive attitudes toward such technologies (Spitzber, 2006; Spitzberg & Bubas, 2008; Xie et al., 2015). Filipino employees' with high CMC motivation are characterized by confidence and comfort in using CMC whereas negative motivation towards CMC use is characterized by anxiety, apprehension, apathy or even disinterest towards using CMCs (Spitzberg, 2006). Also, the need or desire to use a technical system that supports CMC and the belief that this activity will result in a positive or desired outcome will influence how much such a system is used and with negative motivation, the knowledge and skill that someone has cannot be adequately put to use (Bubas, 2004). The more motivated the Filipino employee is in engaging in CMC, the greater the knowledge and skill of this user

becomes and consequently, the proportion of his or her achieving the preferred outcomes increases (Bubas, 2004).

Another important component is the Filipino employees' CMC knowledge in using online collaborative communication tools. Knowledge in CMC competence can be attained by different means like trial-and-error approach, learning from printed or online material, instruction from a colleague or an expert, and systematic education through classes and training seminars (Bubas, 2004). Knowledge of how a technical medium operates is not sufficient since it is also necessary to familiarize oneself with the conventions, rules, and roles of communication exchanges through CMC in specific professional environments (Bubas, 2004). The more knowledgeable a person becomes with CMC, the more motivated the person will be to use CMC. Conversely, the more motivated someone is to use CMC, the more knowledgeable the person should become (Spitzberg, 2006).

In addition to acquiring knowledge in the context of CMC use, Spitzberg (2006) argued that knowledge consists of both content and procedural forms of knowledge where content knowledge is understanding the possible communication situation such as topics, rules, and concepts in a CMC context and procedural knowledge is comprehension of how content knowledge can be applied. Thus, CMC use and experience represent a confluence of both content and procedural knowledge as well as skills (Smith et al., 1999).

Conceptualizing CMC competence as a function of motivation and knowledge indicates that CMC motivation provides the drive for more skilled CMC and that CMC knowledge provides the content and procedures for implementing these motives.

Motivation and knowledge may at times be merely collective but they may also interact in certain ways. That is, a person, high in both, may be significantly more competent than someone only moderate and low on one or the other (Spitzberg, 2006; Spitzberg & Bubas, 2008).

The last component is Filipino employees' CMC skills in using online collaborative communication tools. CMC skills are repeatable goal-oriented behaviors that manifest the ability of an individual to perform a certain communication-related task. The CMC related skills were associated both with the technical system used for CMC and the conduct in interpersonal communication (Bubas, 2004).

In addition, skills development component for CMC competence is the most important factor for the advancement of individual effectiveness and appropriateness in mediated interaction alongside knowledge and literacy involved medium and the mediated process (Ramirez, 2002).

CMC skills encompass the actual performance of behaviors and individuals are often motivated to communicate and possess knowledge yet lack skill in actually communicating. Many skill measures tap related variables such as other-orientation, social anxiety, expressiveness, and interaction management (Payne, 2005).

In this conceptual framework, if Filipino employees' CMC motivation in using online collaborative communication tools encounter elicits relevant CMC knowledge search, the CMC motivation and CMC knowledge were activated toward the development of action plans for the performance of actual behaviors. Over time, as more episodes and types of online collaborative communication are encountered in a person's

socialization and life experiences, the performance of behaviors becomes repeatable, generalizable, adaptable, and goal-directed and that they become skills (Spitzberg, 2003).

The conceptualized CMC competence was applied in the selection of media and messages where certain motivations were better served by certain media features and content of the message. Media selection here was conceptualized as interactivity, adaptability, and efficiency in using online collaborative communication tools. On the other hand, message selection was conceptualized as task-orientation openness and socioemotional-orientation in communicating using online collaborative communication tools.

CMC knowledge of the most competent interactivity, adaptability, efficiency (media) and task-orientation, openness, and socioemotional-orientation (message) was selected and implemented through the Filipino employees' CMC skills (Xie, 2015; Sptizberg, 2006; Wrench and Punyanunt-Carter, 2007). The messages transmitted through selected online collaborative communication tools were filtered through the Filipino experiences in using online collaborative communication tools as a form of CMC (Sptizberg, 2006). These experiences (expectancies) were products of the Filipino employees' experiences in online collaborative communication. Through the ongoing interaction, these experiences are fulfilled, violated, or renegotiated (Keyton, 2015; Spitzberg, 2011) and this predicts the outcomes of the process conceptualized as competency outcomes in using online collaborative communication tools of Filipino employees in the offshore outsourcing organizational context. Generally, these competency outcomes as the results of the interaction of Filipino employees and their colleagues in the context of online collaborative communication should be positively

related to Filipino employees CMC competence yet in any given context, Filipino employees may strategically sacrifice one or more outcomes for others, especially when outcomes are perceived to be incompatible (Spitzberg, 2011). The conceptual framework of this study is shown in Figure 2.

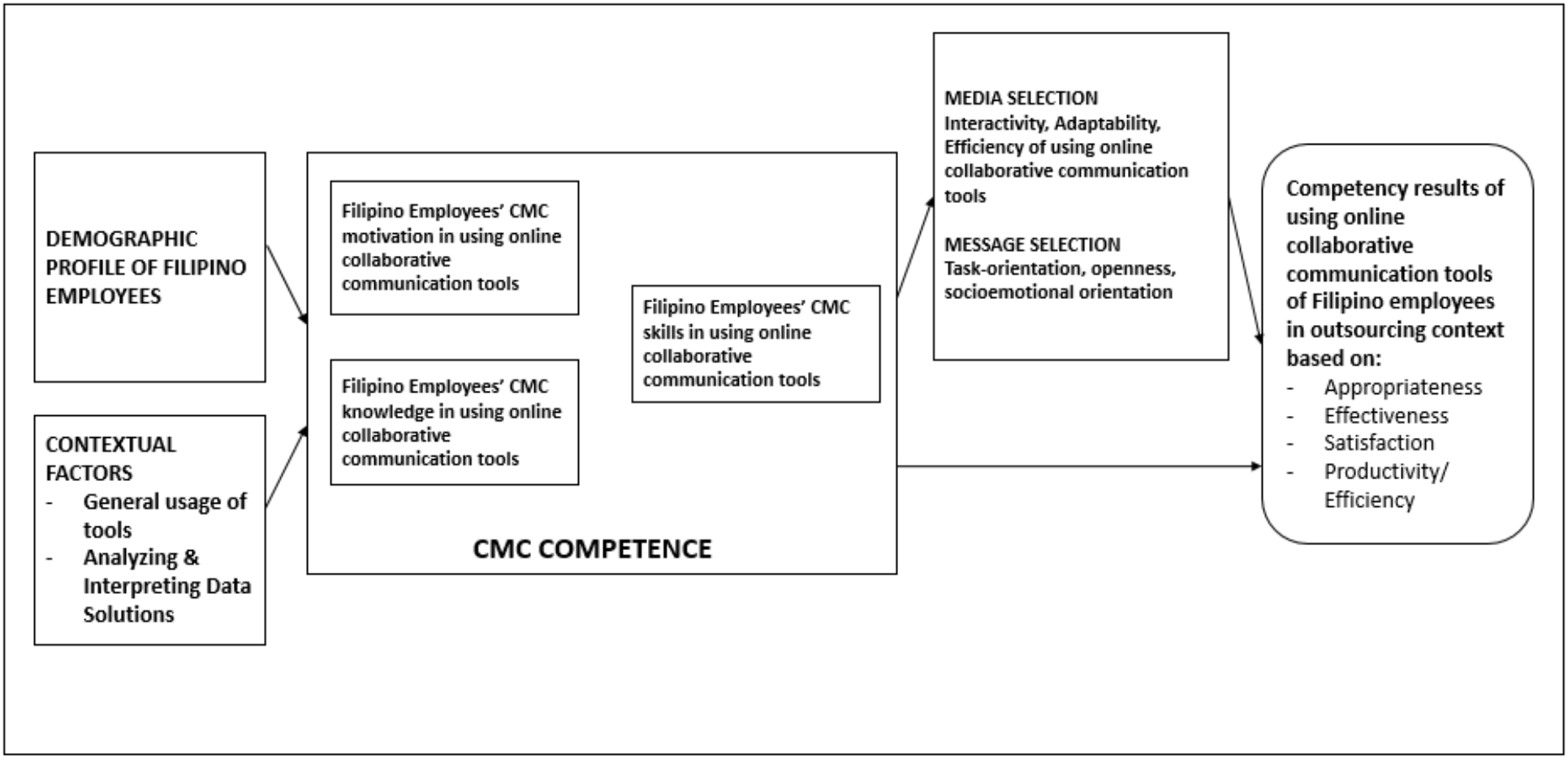


Figure 2. Conceptual model of the context-based CMC competence

C. Operational Framework

In the operational framework, pertinent concepts from the theory of computer-mediated communication competence are applied to the main focus of this study.

To rationalize the concepts in the study, the operational framework is shown in Figure 3. The operational framework shows the operationalized context-based CMC competence and its competency outcomes in using online collaborative communication tools.

The context of interaction was operationalized using the concepts which focused on analyzing and interpreting competency. Specifically, the context was measured based on applying expertise and technology, writing and reporting, and analyzing of Filipino employees in providing data solutions to clients abroad. The demographic profile such as gender, years of work experience, online communication tools experience, and age was also measured in the study

Filipino employees' CMC motivation measure was based on how they were willing to use, to adopt, confident, and comfortable in communicating with their colleagues using online collaborative communication tools. Aside from the positive motivations of using CMC tools, negative motivations such as anxiety, apprehension, apathy, and disinterest in using online collaborative communication tools will be also measured.

Filipino employees' CMC knowledge measure was based on how adept they were in communicating through online collaborative communication tools since it contains a procedural process. It also looked into the acquired experiences and repeated interaction as part of acquiring knowledge in using online collaborative communication tools.

As CMC skills over time become repeatable, generalizable, adaptable, and goal-directed, the measures of Filipino employees' CMC skills focused on four specific skills that were conceptualized and supported by various scholars (Wrench and Punyanunt-Carter, 2007; Spitzberg, 2006; Bubas, 2004). As applied in the use of online collaborative communication tools, the measure will focus on listening and listening-related skills (attentiveness), interaction management that includes fluency, verbal ability, and social adaptability (coordination), articulation or expressiveness, and avoiding cues of uncertainty (composure).

On the other hand, extending the concepts of CMC skills of Filipino employees to media and message selection argued that the more CMC skills are adapted to media and message selection, the more competent the interaction was emphasized in the operational framework. For CMC media selection, the measures focused on the Filipino employees' choice of technology, media interaction and media efficacy.

For CMC message selection, the measures focused on the Filipino employees' openness, complexity, quantity and emotional content while communicating using online collaborative communication tools.

Competency outcomes in this study will be measured based on Filipino employees' use of online collaborative communication tools according to appropriateness, effectiveness, clarity, satisfaction, attractiveness and efficiency.

The operationalized aspects of the contextual factors interact with the attributes of Filipino employees' CMC competence, medium, and messages selection to create outcomes that can be assessed on the basis of Filipino employees' clarity, appropriateness, effectiveness, satisfaction, productivity or efficiency. Thus, this

operationalized model argues that as CMC competence increases, appropriateness, effectiveness, satisfaction, co-orientation, and preferred relational outcomes are more likely to occur.

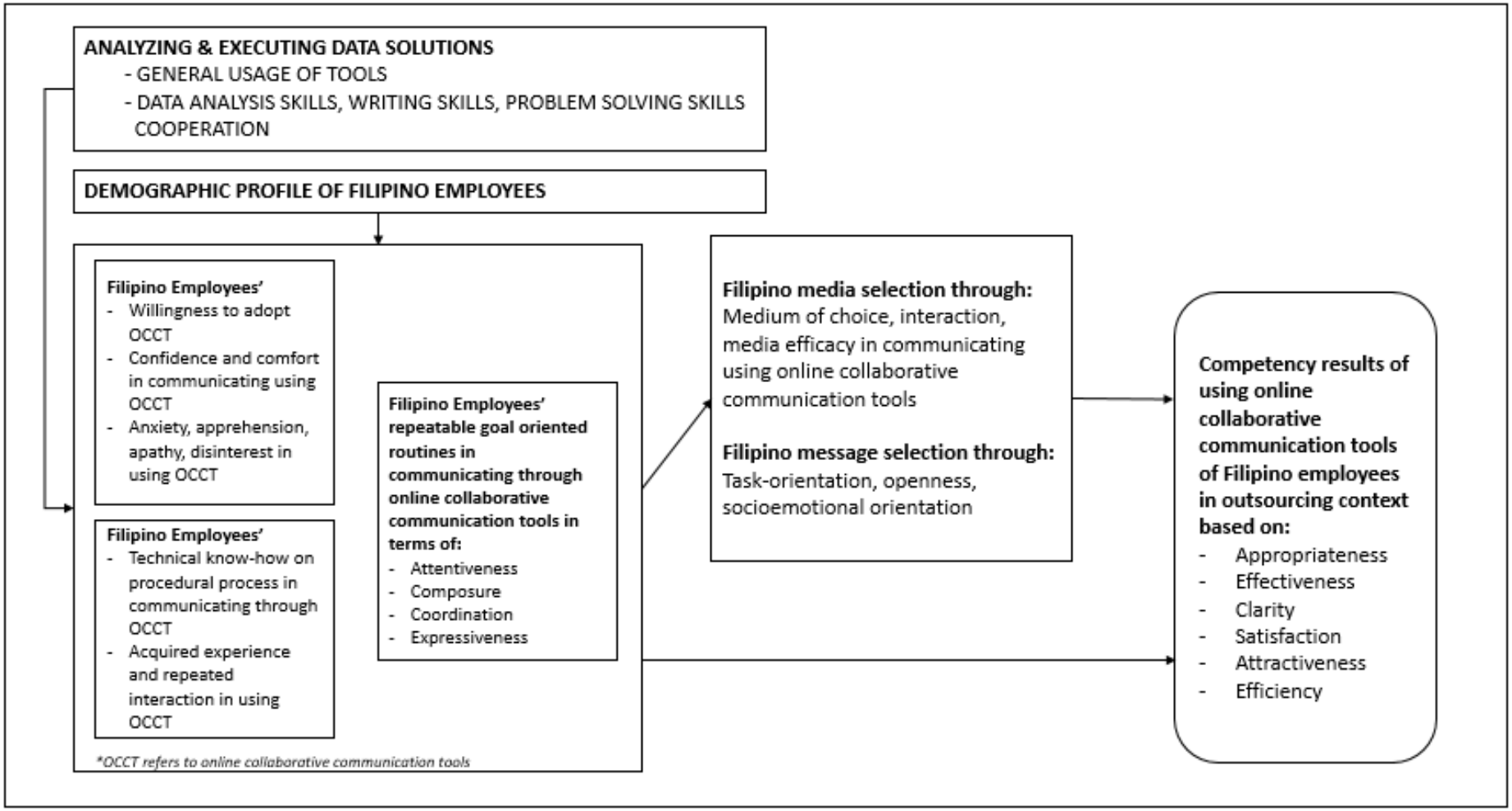


Figure 3. Operational model of the context-based CMC competence

D. Operational Definition of Terms

The following are the terms that will be used in this research:

CMC competence – any human symbolic computer-based interaction conducted through online-based technologies. Composed of competence measures: Motivation, knowledge, and skills.

CMC knowledge – represents primarily cognitive characteristics reflecting such constructs like planning, familiarity, expertise and comprehension. It refers to Filipino employees who are knowledgeable and show their familiarity in communicating through online collaborative communication tools.

CMC motivation – represents the energizing component of performance. It refers to the Filipino employees' enjoyment and pleasure, derived from communicating through online collaborative communication tools.

CMC skills – repeatable, goal-oriented behavioral tactics and routines that Filipino employees employed in the service of their motivation and knowledge. It refers to Filipino employees who display interest, expression, confidence, and deft management of timing through online collaborative communication tools message.

Competence outcomes – refers to Filipino employees who use online collaborative communication tools according to appropriateness, effectiveness, clarity, satisfaction, attractiveness and efficiency

Contextual factors **-** based on applying expertise and technology, writing and reporting, and analyzing of Filipino employees in providing data solutions to clients abroad in the offshore outsourcing organization.

Data Solutions - providing data solutions would include assessing risk, verifying identity, preventing fraud, complying with legislation, facilitating and securing commerce, and supporting data in law enforcement and homeland security initiatives

Filipino employees – this refers to the Filipinos who are employed in an outsourcing organization in the Philippines and who are heavy users of online collaborative communication tools in communicating and collaborating with their colleagues both local and abroad.

Media selection – refers to the Filipino employees' choice of medium or technology, media sensitivity, media interaction and media efficacy in communicating using online collaborative communication tools.

Message selection – refers to Filipino employees' openness, complexity, quantity and emotional content **in** communicating using online collaborative communication tools.

Online collaborative communication tools – a type of computer-mediated communication (CMC) that refers to the function of communication and collaboration through the exchange of messages and information like instant messaging (IM) software, Microsoft Office 365 Teams applications, CISCO unified functions (WebEx/Jabber) and Skype for Business. These tools in general support video, audio, screen sharing, group calling, document sharing, interactive whiteboard, live chat, recording, and instant messaging

Online communication and collaboration - refers to the use of digital technologies that enable organizations or individuals to communicate and to collaboratively plan, design, develop, manage, solve problems and enable workflow systems.

E. Statement of Hypotheses

In reference to the research problem and objectives, the analysis of this study is shown in Figure 4. The analytical framework shows the linear model using Spitzberg's CMC Competence Theory.

1. Relationship between Filipino employee's demographic profile and CMC competence

Studies on demographic profile such as age, general use of technology, and experience have implications in the context of CMC interaction (Bubas, 2004; Del Villar, 2010; Labucay, 2011; Jones, 2012; Xie, 2015). In addition, individual's age can be related to the use of technology as age reflects the influences of time within the user's CMC competence (Spitzberg, 2006). Moreover, individual's general use and exposure to computer technology may further increase the competence of the CMC interactant using online communication tools (Del Villar, 2010). As such, the following hypotheses were proposed:

H1a: Employee's age, years of online communication tools usage, years of work experience have a positive effect on CMC competence (aggregated).

H1b: Employee's age, years of online communication tools usage, years of work experience have a positive effect on CMC motivation, knowledge, and skills (disaggregated).

2. Relationship between the contextual factors and CMC competence

The study integrates functional tasks to demonstrate that being CMC competent has outcomes that are useful, beneficial, and practical and more importantly, to better

position the constructs in an applied context (Keyton, 2015). Specifically, this study explores the application of utilizing online communication tools in an organization.

The context focus at how Filipino employees increase their CMC competence in analyzing and interpreting data solutions when utilizing online communication tools in communicating and collaborating. As such, the following hypotheses were proposed:

H2a: Analyzing and interpreting data solutions have a positive effect on Filipino employee's CMC competence (aggregated).

H2b: Analyzing and interpreting data solutions have a positive effect on Filipino employee's CMC motivation and CMC knowledge (disaggregated).

A mediating effect occurs when causal relationship between analyzing and interpreting data solutions and media selection is significant and the causal relationship between CMC competence and media selection is significant. As such, the following hypotheses were proposed:

H3: Filipino employees' CMC competence mediates the positive relationship between analyzing and interpreting data solutions and media selection (aggregated).

3. Relationship between the CMC competence and Media Selection

CMC competence explains that motivation represents the initial activating process of understanding and application (knowledge) which manifests through the skills that are applied to the selection of media. Motivation is better served by certain media features (i.e. online technology features) and knowledge of the most competent tool or technology is selected accordingly and subsequently implemented through the skills of CMC.

Therefore, this will determine how Filipino employees select online collaborative communication tools in terms of their choice, interaction and efficacy in using online collaborative communication tools. As such, the following hypothesis was proposed:

H4a: Filipino employees' CMC competence has a positive effect on media selection (aggregated).

H4b: Filipino employees' CMC skills (attentiveness, coordination, expressiveness, composure) have a positive effect on Filipino employees' media selection (disaggregated).

4. Relationship between the CMC competence and Competency outcomes

The model of CMC competence predicts that motivation, knowledge, and skills predicted impressions of competence which could be typically tested by considering the appropriateness, effectiveness, satisfaction, and productivity/efficiency of the online communication and collaboration (Spitzberg, 2006). In this study, the criterion outcomes of competence interaction focused on the context-based CMC competence through analysis and interpretation of data solution as predictors. As such, the following hypotheses were proposed:

H5: Filipino employees' CMC competence has a positive effect on competency outcomes (aggregated).

5. Relationship between the media selection and competency outcomes

Media selection creates outcomes that can be assessed on the basis of appropriateness, effectiveness, satisfaction, and productivity or efficiency. Knowledge of

the criteria of CMC outcomes and the self-assessment of appropriateness, effectiveness, satisfaction, and productivity/efficiency in the performed CMC interactions positively influences CMC competency outcomes (Spitzberg, 2006). As such, the following hypotheses were proposed:

H6a: Filipino employees' media selection has a positive effect on CMC competency outcomes in using online collaborative communication tools (aggregated).

H6b: Filipino employees' media selection has a positive effect on appropriateness, effectiveness, satisfaction, productivity/efficiency in using online collaborative communication tools (disaggregated).

A mediating effect occurs when causal relationship between CMC competence & media selection is significant and the causal relationship between media selection towards competence outcomes is significant. As such, the following hypotheses were proposed:

H7a: Filipino employees' media selection mediates the positive relationship between CMC competence and CMC competency outcomes (aggregated).

H7b: Filipino employees' media selection mediates the positive relationship between CMC skills and appropriateness, effectiveness, satisfaction, productivity/efficiency (disaggregated.)

Notes:
Aggregated measures – composite measure of Contextual Factors, CMC competence, Media Selection, and Competency Outcomes
Disaggregated measures - components are disaggregated (i.e. CMC competence – motivation, knowledge, attentiveness, expressiveness, composure, coordination; Competency Outcomes – appropriateness, effectiveness, satisfaction, productivity/efficiency)

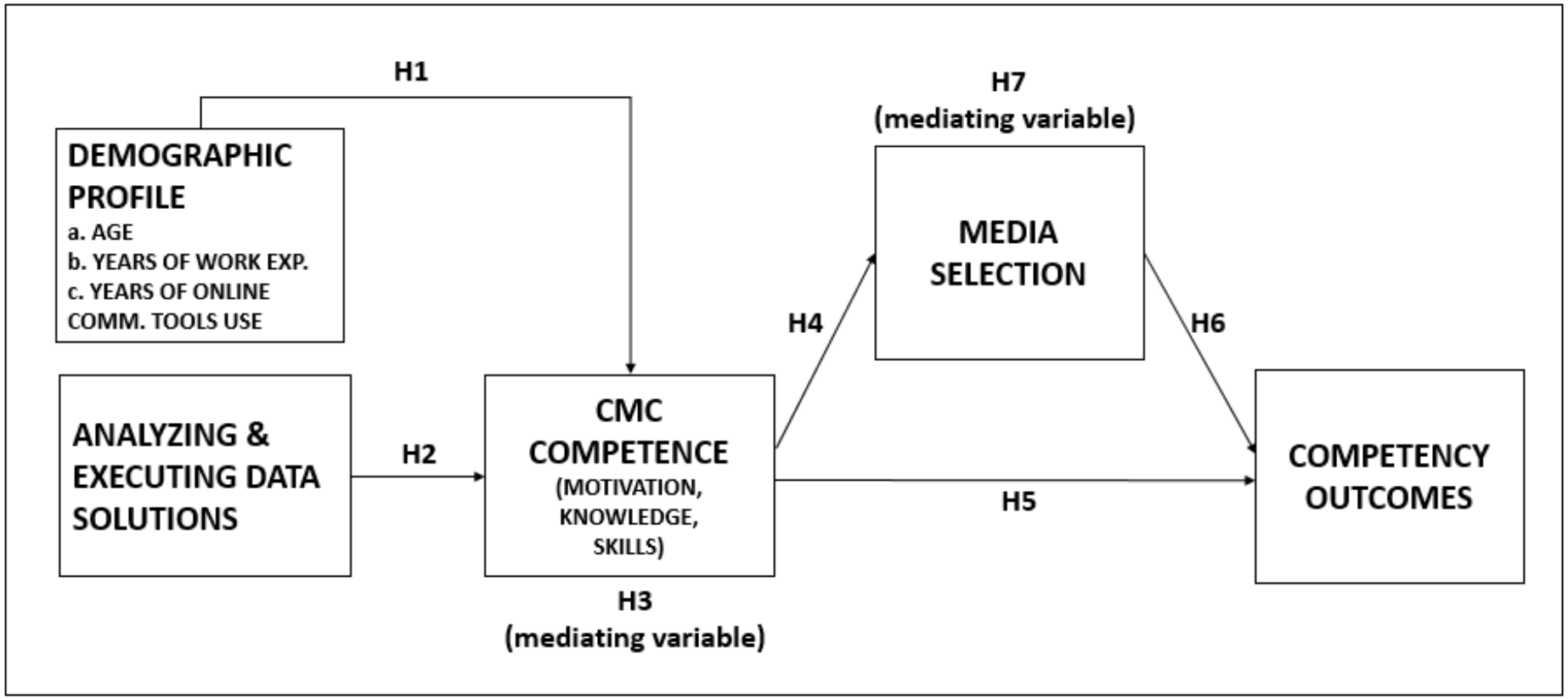


Figure 4. Analytical framework of the context-based CMC competence

CHAPTER IV. METHODS AND PROCEDURES

This chapter deals with the method and procedures used in the conduct of the study as well as the discussion of certain considerations that the researcher partook further.

A. Research design and nature of the study

This study aims to evaluate the computer-mediated communication competency of Filipino employees working in the outsourcing organization where most of the employees are engaged in using collaborative communication tools in communicating and collaborating with their colleagues.

A positivist research approach was used in the study to know the Filipino employees' CMC competence. It was applied in this study to explain how one variable affects another (Creswell, 2014; Fraenkel et. al., 2012). The study specifically employed an online survey. Muijs (2011) stated that survey research is well suited to descriptive studies whenever the researcher wanted to look at the relationship between variables occurring in real-life contexts. Both Gay & Airasian (2000) and Johnson & Christensen (2008) said that descriptive research, also referred to as survey research, is mainly concerned with attitude, opinions, preferences, demographics, practices and procedures. According to Chua (2012), survey research can be used widely to answer various kinds of research questions concerning issues and problems from multiple perspectives especially in explaining attitudes, views, beliefs, feelings and behavior.

Moreover, Shaughnessy et al. (2012) mentioned that surveys are often used in correlational research and the latter is an excellent method for meeting the scientific goals of description and prediction.

In this study, the survey meant to collect self-reported data at a specific point in time with the purpose of (1) describing the dependent variable of interest and (2) examining the relationship between the dependent variable and independent variables with mediating variables in the study. Specifically, this study aims to describe the Filipino computer-mediated communication competence in using online collaborative communication tools, the context of interaction, demographic characteristics, and the outcomes of using online collaborative communication tools. The method probed the relationship of the factors and helped in identifying the contextual factors, and CMC competence and the outcomes in using online collaborative communication tools.

The researcher devised and constructed a questionnaire to know the different factors that influence the computer-mediated communication competence in the use of online collaborative communication tools.

B. Objectives, Variables and Measures

Objectives	Variables	Measures	Statistical Test
1. To identify the demographic profile of Filipino employees working in the outsourcing industry.	Demographic profile of Filipino employees	Gender, age, work experience and computer-use experience	Frequency, Percentage
2. To explain the difference between the demographic profile of Filipino employees that use online collaborative communication tools and their CMC competence.	Age, years of work experience, years of OCCT usage, CMC motivation, knowledge, and skills		Structural equation modeling
3. To assess how contextual factors affect Filipino employees CMC competence in the context of online mediated platforms.	Analyzing and interpreting Data Solutions (context of communication & collaboration)	applying expertise and technology, writing and reporting, and analyzing	Structural equation modeling
4. To identify the relationship of Filipino employees CMC competence and their selection of media in using online collaborative communication tools.	Media Selection Message Selection	Medium of choice, media interaction, media efficacy in communicating using online collaborative communication tools Sincerity, openness, complexity, quantity, emotional content in communicating using online collaborative communication tools	Structural equation modeling

5. To describe how Filipino employees CMC competence affect their competency outcomes in using online collaborative communication tools.	CMC motivation CMC knowledge CMC knowledge CMC skills	Willingness to adopt OCCT Confidence and comfort in communicating using OCCT Anxiety, apprehension, apathy, disinterest in using OCCT Technical know-how on procedural process in communicating through OCCT Acquired experience and repeated interaction in using OCCT attentiveness, composure, coordination, expressiveness.	Structural equation modeling
6. To understand the relationship of Filipino employees media selection and competency outcomes based on the context-based CMC competence in communicating and collaborating through online collaborative communication tools.	Competency outcomes	Appropriateness Effectiveness Clarity Satisfaction Productivity/Efficiency.	Structural equation modeling

C. Research instrument

1. Instrument

Creswell (2014) stated that an instrument is a tool to measure and to document quantitative data that contains specific questions and response possibilities that are established or developed by the researcher before the real study. The instrument used in this study was adopted from various established findings based on quantitative research and developed by the researcher by referring to various studies. A questionnaire was developed by the researcher as an instrument to obtain information needed for the study because this study applied a positivist approach explaining the relationship between variables.

The instrument designed in this study contained five sections, namely, a) the demographic characteristics as the independent variable; b) contextual factors as the independent variable c) the CMC competence; d) media selection and message expression as the mediating variable and e) the competency outcomes in using online collaborative communication tools as the dependent variable. The descriptions of the parts were discussed as follows:

Measures	Question
Demographic Profile Gender, age, work experience and computer-use experience	Part 1
Contextual Factors Analyzing and interpreting Data Solutions	Part 2 (Questions 1 to 8)

CMC competence in using online collaborative communication tools	Part 3
CMC Motivation	(Questions 9 to 13)
CMC Knowledge	(Questions 14 to 17)
CMC Skills	
Coordination	(Questions 18 to 21)
Attentiveness	(Questions 22 to 24)
Expressiveness	(Questions 25 to 28)
Composure	(Questions 29 to 32)
Media Selection	
choice of platform	Part 4 (Questions 33 to 37)
media efficacy	
media sensitivity	
Message Expression	Part 4 (Questions 38 to 32)
sincerity	
openness	
complexity	
quantity	
emotional content	
CMC Competency Outcomes	
appropriateness	Part5 (Question 43 to 45)
clarity	Part5 (Question 46 to 49)
effectiveness	Part5 (Question 50 to 52)
satisfaction	Part5 (Question 53 to 56)
productivity/efficiency	Part5 (Question 57 to 60)

Part 1: Filipino employees' demographic characteristics

Based on the literature being reviewed, the researcher found that there were few demographic characteristics which had some effect on the use of CMC technologies. Gender, age, work experience and computer-use experience were selected antecedents of individuals shown in prior studies. Therefore, the researcher believes that these demographic characteristics influence the Filipino CMC competence and the competency outcomes in using online collaborative communication tools.

Part 2: Contextual factors of Filipino employees in CMC context

CMC contextual factors were measured based on the Filipino employees' general usage of online communication tools and their non-mediated functions such as organizing/executing process in providing data solutions to clients in the CMC context. Theorizing and aligning the contextual factors as the independent variable to CMC competence, the study adopted the Great Eight Competency questionnaire by Bartram (2005). The researcher utilized questions that focused on analyzing and interpreting competency.

These facets comprised the Filipino employees experience through the interaction. These experiences are fulfilled, violated, or renegotiated and predict the competency outcomes of Filipino employees.

Part 3: Filipino CMC competence in using online collaborative communication tools

Filipino computer-mediated communication (CMC) competence was measured based on CMC competence measure adopted from Professor Brian H. Spitzberg published paper entitled "Preliminary Development of a Model and Measure of Computer-Mediated Communication (CMC) Competence" in 2006. In this study, the researcher looked at three different dimensions of CMC competence measure which were motivation, knowledge, and skills. Each of the three dimensions had a different number of items to measure it.

CMC motivation was operationalized based on the following: Willingness to adopt online collaborative communication tools; confidence and comfort in using online

collaborative communication tools; anxiety, apprehension, & disinterest in using online collaborative communication tools.

CMC knowledge was operationalized based on the following: Technical knowledge on the procedural process in using online collaborative communication tools; acquired experience and repeated interaction in using online collaborative communication tools reflected in questions.

CMC skills were operationalized based on Filipino employees' repeatable goal oriented routines in communicating through online collaborative communication tools in terms of coordination, attentiveness, expressiveness, and composure.

Part 4: Media and message selection in using online collaborative communication tools

Filipino employees' media selection focused on Filipino employees' choice of platform, media efficacy and media sensitivity in communicating using online collaborative communication tools.

For CMC message selection, the measures focused on the Filipino employees' sincerity, openness, complexity, quantity and emotional content in communicating using online collaborative communication tools.

Part 5: Outcomes in the use of online collaborative communication tools

Competency outcomes in this study were measured based on Filipino employees' utilization online collaborative communication tools according to appropriateness, effectiveness, clarity, satisfaction, and productivity/efficiency.

All items were rated on the numerical rating scale, ranging from 1 which corresponds to strongly disagree at all to 7 which corresponds to strongly agree. Seven-point Likert-scale appears to be more suited to online distribution of usability inventories and offers a wider range of stimuli (Finstad, 2010).

2. Statistical measures used in the instrument

To check the reliability and validity of the instrument in line with the research problem and objectives of this study, the researcher conducted factor analysis. Factor analysis is a useful tool for investigating variable relationships for complex concepts (Hair et al., 2014). It allowed the researcher to examine concepts that were not easily measured directly by collapsing a large number of variables into a few interpretable underlying factors (Gaskin, 2016). In the instrument designed of the study, the researcher used exploratory factor analysis (EFA) to analyze the factor loadings, appropriateness of data or adequacy, factor structure (pattern matrix), convergent & discriminant validity and reliability of the constructs used in the study. After the EFA, the researcher proceeded to conduct confirmatory factor analysis (CFA) to analyze the model fit, validity, and reliability in line with the research objectives and the theoretical assumptions of this study. The results of CFA were used in the computation of structural equation modeling (SEM) guided by the theoretical proposition of CMC competence theory.

3. Reliability and Validity of the Developed Instrument

The instrument of this study was developed by the researcher based on the review of related literature, especially by referring to Spitzberg's (2006) work.

After the survey instrument was refined, a pre-test was conducted in order to eliminate the ambiguity of individual questions and to test the reliability and validity of the instrument. The researcher has chosen 100 random samples to do the pre-test at Reed Elsevier Philippines. The participants in the pre-test were excluded in the final study. The pre-test was carried out to ensure the clarity of the word of each item to avoid subjects of this study encounter any difficulty in answering the questionnaire. Moreover, it served as a trial run to provide useful information on any unexpected problems that might arise in the actual study. Pre-test participants were asked to point out any ambiguous items by underlining words and sentences that they found difficult to understand so that those items could be modified for the final survey instrument.

a. Validity

Content validity refers to what extent can the measurement represent the content aspect measured (Chua, 2012). To test the survey instrument for content validity, the researcher consulted experts to examine the instrument. The experts' comments on content validity were used to eliminate, add, and modify elements of the survey instrument. In addition, experts' suggestions were used to revise the items for consistency of terminology and specificity of questions and responses.

According to Fraenkel et al. (2012), poorly worded questions and unclear questions could be identified through pre-testing of the questionnaire. Also, unclear instructions of

the questionnaires can be revealed as well. Thus, the questionnaire of this study was revised according to the respondents' suggestions after pre-test.

In this study, the validation of instrument was carried out through an extensive review of the literature on the concept of CMC competence, contextual factors, media and message selection, and outcome of CMC competence. Experts reviewed the survey for content analysis and pre-testing to check for face validity. After receiving comments and feedback from the expert reviewers and pre-testing respondents, the researcher revised unsatisfactory items. Subsequently, the survey was administered to a pre-test group to establish instrument reliability.

b. Reliability

The term reliability used in research refers to the capability of all the items in the research instrument to consistently measure the concept (Chua, 2012). The reliability coefficient is an index that indicates the degree of consistency. The internal-consistency method of estimating reliability involves finding the correlation value, the Cronbach's alpha value, between the score of every item and the total score for all the items in the test or the index score of the test. Thus, in this method, items having a high correlation value with the index score of the test will have high reliability whereas items with a low correlation value will have low reliability and are removed from the test.

As stated above, to test the instrument for internal-consistency, the survey instrument was assessed using Cronbach's alpha analysis using data from the pre-test. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software to calculate the Cronbach's alpha coefficient.

The polarity of the negative questions in the survey instrument was reversed to analyze it for Cronbach's alpha. This reverse polarity was used for subsequent analysis. According to Chua (2012), Cronbach's alpha coefficient for an instrument in the range of .65 to .95 is sufficient. On the other hand, Johnson & Christensen (2008) and Muijs (2011) indicated that Cronbach's alpha coefficient greater than .70 is acceptable.

D. Unit of Analysis and Sampling

The unit of analysis came from the Reed Elsevier Philippines, an organization that has been operating in the Philippines since 2013. Its headquarters are located in the United States and the United Kingdom. Also, this organization is a hybrid operation of BPO and KPO functions operating in the field of Customer Service, Business Process and Management, Digital Marketing, Business Analytics and Data Science, Medical Science, Legal and Risk Management and Information & Communications Technology.

The said group was chosen according to the nature of the business, which is offshore outsourcing and based on the use of online collaborative communication tools in their daily work. Filipino employees are involved in the collaboration and communication based on their expertise and profession whether in the Marketing and Sales, Business Development, Research, Data Science, Finance, Legal and Risk Management. Departments in the Information Technology, Media, Customer and Technical Support were not included in the study.

A probability through random sampling was used to select a sample from Reed Elsevier Philippines. The study aims to have a sample size of 687 (95% confidence level, ±3 Confidence Interval) from the selected population which is a mix of gender, age, year

of tenure, computer experience and profession. (Sample computed was based on the 1,907 total population of Filipino employees of Reed Elsevier Philippines).

E. Data gathering

The online survey was conducted from February 7 to 21, 2019. A total of 687 online survey questionnaires was administered. The researcher used google form survey to send out the questionnaires to randomly selected respondents. The response rate of the online survey was 86.46% or 594 respondents answered the online survey.

The researcher utilized the list of employees of Reed Elsevier Philippines, provided by the Human Resources Department updated as of December 2018. Microsoft Excel was used to randomly select the employees from the Marketing and Sales, Business Development, Research, Data Science, Finance, Legal and Risk Management Department. Then, the link of the online survey was sent through the employees' personal e-mail which was randomly selected. To be qualified as the respondent, an employee must be currently employed full time in the outsourcing organization and must be utilizing online collaborative communication tools in communicating and collaborating with their colleagues abroad.

F. Data Analysis

In order to facilitate data analysis and presentation, questionnaire items were grouped into (a) the demographic characteristics (b) contextual factors (c) the Filipino CMC competence (d) media selection and (e) the competency outcomes in using online collaborative communication tools.

In the first part of the analysis, descriptive statistics such as the mean and standard deviation were used to analyze each variable.

In the second part of the analysis, the researcher used the following procedures before testing the hypotheses. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted for each construct-rater combination separately. The measurement model for CMC Competence was developed in accordance with the theoretical framework of Spitzberg (2006) and the review of related literature.

For exploratory factor analysis (EFA), factor loadings were evaluated at considerably stricter levels since it has substantially larger standard errors than typical correlations (Hair et al., 2014). Thresholds for these factor loadings are acceptable >0.6 regardless of sample size (Field, 2005). However, Hair et al. (2014) argued that the researcher can employ the concept of statistical power to specify factor loadings considered significant for differing sample sizes. A factor loading threshold of >.30 for a sample size of 350 and above is acceptable. Since the study had 350 and above sample size, the researcher applied this threshold in the factor loading of indicators.

SPSS version 22 was utilized to analyze the factor loadings, appropriateness of data or adequacy, factor structure (pattern matrix), convergent & discriminant validity and reliability of the constructs used in the study. This test was used to determine how variables relate and are grouped based on the inter-variable correlations of the variables used in this study.

Table 1 presented the appropriateness of data result using Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity that showed excellent

sample adequacy (KMO = .957) and had a significant result that indicated the way variables do relate to one another enough to run a meaningful EFA.

Table 1. *Kaiser-Meyer-Olkin Measure of Sampling Adequacy* (N = 583)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.957**
Bartlett's Test of Sphericity	Approx. Chi-Square	11357.613
	Df	253
	Sig.	.000

Using Maximum Likelihood as the extraction method and Promax with Kaiser Normalization for rotation method, the factor structure result was amongst the variables being tested in the EFA. Using the pattern matrix, scores were precisely loaded into the factors. This illustrated a very clean factor structure in which loading amplitude on pattern matrix was above 0.30 across all loadings (convergent validity) and no major cross-loadings between factors (discriminant validity). Specifically, primary loading should be at least > 0.30 larger than the secondary loading (Hair et al., 2014). *(See appendix A)*

Moreover, 4 factors provided excellent correlation values. Correlations between factors should not exceed 0.7. A correlation greater than 0.7 indicated a majority of shared variance. *(See appendix C)*

In addition, latent constructs used in this study were reflective constructs wherein the direction of causality was from measure to construct. The measure was expected to be correlated and indicators were interchangeable. Using iterative procedure to make sure

that there were no cross-loadings in the pattern matrix, 37-items were removed due to cross loadings and as indicated by the Cronbach's alpha.

After EFA, the researcher proceeded to conduct confirmatory factor analysis (CFA) to settle the factor structure extracted in the EFA. SPSS Analysis of Moment Structures (AMOS) version 24 was utilized to determine the factor structure of the dataset. CFA was conducted to analyze the model fit, validity, and reliability of the proposed model. *(see Appendix E*)

For CFA, the model was evaluated based on common fit criteria, specifically (a) Chi-square/df, p-value for the model, (b) Comparative Fit Index (CFI), (c) Standardized Root Mean Square Residual (SRMR), (d) Root mean square error of approximation (RMSEA) and (e) PClose. The researcher used Hu and Bentler (1999) combinations of measures wherein the thresholds for CMIN/DF is 1 to 3, CFI > 0.95 and SRMR <0.08. To further solidify the evidence, the researcher added the RMSEA < 0.06.

Table 2 showed the model fit statistics based on the common fit criteria set by the researcher. The proposed CFA model exhibited an excellent fit results (CMIN/DF = 3.223, CFI = 0.956, SRMR = 0.033, RMSEA = 0.062). The researcher used the pattern matrix results from the EFA and utilized a plugin in AMOS called Model Fit Measures developed by Gaskin & Lim (2016) to get the exact model fit measures.

Table 2. *Model fit measure for confirmatory factor analysis* (N = 583)

Measure	Estimate	Threshold	Interpretation
CMIN	721.987	--	--
DF	224	--	--
CMIN/DF	3.223	Between 1 and 3	Acceptable
CFI	0.956	>0.95	Excellent
SRMR	0.033	<0.08	Excellent
RMSEA	0.062	<0.06	Acceptable
PClose	0	>0.05	Not Estimated

Note: Hu and Bentler (1999, "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives") recommend combinations of measures. The researcher prefer a combination of CFI>0.95 and SRMR<0.08. To further solidify evidence, the researcher add the RMSEA < 0.06.

Plug-in tool for model fit measures: Gaskin, J. & Lim, J. (2016), "Model Fit Measures", AMOS Plugin. Gaskination's StatWiki.

Furthermore, to strengthen the results of the analyses, validity and reliability for CFA were conducted. Table 3 and 4 showed the result of the validity and reliability test for the proposed model. The measures used in establishing validity and reliability are (a) composite reliability, (b) average variance extracted (AVE), (c) maximum shared variance, and (d) average shared variance (ASV). The threshold for these values is as follows: Reliability is CR > 0.7, convergent validity is AVE > 0.5, and discriminant validity is MSV > AVE (Hair et al., 2014). The researcher observed convergent and discriminant validity as evidenced by convergent validity is AVE above 0.5, discriminant validity is the square root of AVE greater than correlations, and reliability as evidenced by the CR value above 0.700 (see Table 3).

Table 3. *Validity and reliability for confirmatory factor analysis* (N = 583)

	CR	**AVE**	**MSV**	**MaxR(H)**
CMC Competence	0.916	0.553	0.619	0.927
Contextual Factors	0.871	0.533	0.57	0.891
Competency Outcomes	0.944	0.772	0.619	0.959
Media Selection	0.964	0.899	0.575	0.969

Note: CR – composite reliability, AVE – average variance extracted, MSV – maximum shared variance, MaxR(H) – maximum reliability; (H) – average factor loadings.

Plug-in tool for validity and reliability: Gaskin, J. & Lim, J. (2016), "Master Validity Tool", AMOS Plugin. Gaskination's StatWiki.

Average variance extracted (AVE) is a strict measure of convergent validity. Malhotra & Dash (2011) noted that AVE is a more conservative measure than CR. On the basis of CR alone, the researcher concluded that the convergent validity of the construct is adequate, even though more than 50% of the variance is due to an error (Malhotra & Dash, 2011, p.702).

Table 4. *Squares of Convergent Validity* (N = 583)

	CMC Competence	Contextual Factors	Competency Outcomes	Media Selection
CMC Competence	**0.744**			
Contextual Factors	0.744***	**0.73**		
Competency Outcomes	0.787***	0.687***	**0.879**	
Media Selection	0.758***	0.755***	0.688***	**0.948**

Significance of Correlations:
*** $p < 0.001$

Plug-in tool for validity and reliability: Gaskin, J. & Lim, J. (2016), "Master Validity Tool", AMOS Plugin. Gaskination's StatWiki.

Moreover, in order to address the biased result in the study, the researcher conducted a common method bias (CMB) – specific bias approach in the proposed CFA model. Something external to the question may have influenced the response given. The data gathering method used an online survey that may introduce systematic response bias that will either inflate or deflate responses. Table 5 showed the specific bias test for zero constraints and equal constraint.

The test found that there was an equal specific bias demonstrated unevenly. For table 5, the chi-square test for the zero constrained model was significant (i.e., measurable bias was detected). The researcher decided to retain the specific bias construct (common latent factor) for subsequent causal analyses in preparation for the path analysis (see Appendix I).

Table 5. *Specific Bias Test - Zero Constraints (To check if there is specific bias)* (N = 583)

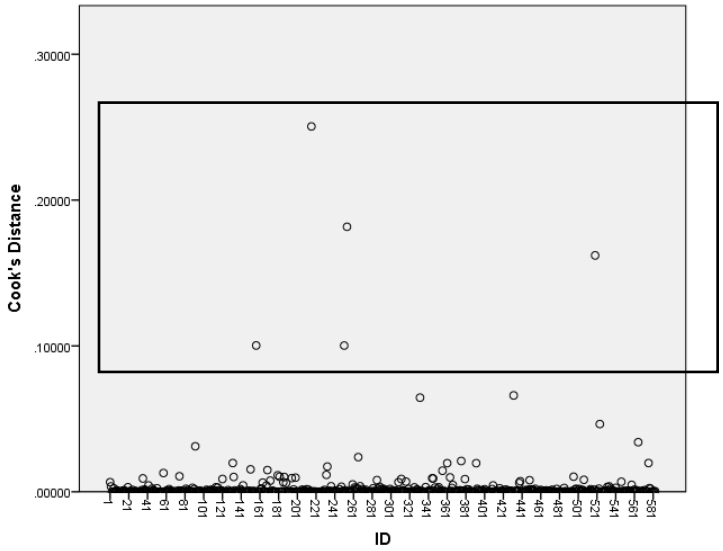
	X^2	DF	Delta	p-value
Unconstrained Model	721.987	224	X^2=0.000 DF=0	1.000
Zero Constrained Model	721.987	224		

Plug-in tool for common method bias – specific bias test: Gaskin, J. & Lim, J. (2017), "CFA Tool", AMOS Plugin. Gaskination's StatWiki.

Finally, to address the outliers in the records, the researcher computed Cook's distance using linear regression. Those records > .1 will be removed in the sample. The researcher used to scatter plot graph to easily observe the outliers in the records. The researcher found seven records that exhibited abnormal cook's distances and opted to remove them. The final sample size utilized in the path analysis was 578 (N = 578). After this, the researcher proceeded to the data imputation in preparation for the path analysis (SEM). Data imputation created factor scores resulted in 4 variables.

Figure 5. *Multivariate analysis using Cook's distance* (N = 583)

Contextual Factors, CMC Competence, Media Selection to Competency Outcomes



Outliers: ***ID 157, 216, 251, 254, 519***

In the third part of the analysis, structural equation modeling (SEM) was used to test the hypotheses of the study, particularly, the influence of the contextual factors to Filipino employees CMC competence and competence outcomes. Moreover, using SEM in the study involved an effort to test the validity of the structural model and the theoretical relationships of context-based CMC competence and its outcomes in using online collaborative communication tools. The model was evaluated based on common fit criteria, specifically (a) Chi-square (X^2) goodness-of-fit and associated degree of freedom (b) the comparative fit index (CFI), (c) the root mean square error of approximation (RMSEA), (d) and the standardized root mean square (SRMR). Model fit is considered acceptable at X^2 GOF >.05, CFI >.900 (preferable >.950), RMSEA <.07 (preferably <.05 with CFI >.90), and SRMR <.08 (with CFI >.92) (Hair et al., 2014).

Statistical Package for Social Science (SPSS) program version 23 and SPSS Analysis of Moment Structures (AMOS) version 24 were used to fit all models in this study. Also, results from the statistical measures mentioned were analyzed through the existing literature used in this study.

Table 6. *Variables, Level of Measurement, Hypotheses, Statistical Test*

Variables	**Levels of Measurement**	**Hypothesis**	**Statistical Test**
x - age, years of work experience, years of OCCT usage y - CMC competence	interval measure	H1a: Employees' age, years of online communication tools usage, years of work experience have a positive effect on CMC competence (aggregated). H1b: Employees' age, years of online communication tools usage, years of work experience have a positive effect on CMC motivation, knowledge, and skills (disaggregated).	Structural equation modeling (Beta, p-value)
x - Analyzing and interpreting Data Solutions y - CMC competence	interval measure	H2a: Analyzing and interpreting data solutions have a positive effect on Filipino employee's CMC competence (aggregated). H2b: Analyzing and interpreting data solutions have a positive effect on Filipino employee's CMC motivation and CMC knowledge (disaggregated).	Structural equation modeling (Beta, p-value)
x - Analyzing and interpreting Data Solutions	interval measure	H3: Filipino employees' CMC competence mediates the positive relationship between analyzing and interpreting and media selection (aggregated).	Structural equation modeling

y - CMC competence z - media selection			(Beta, p-value)
x - CMC competence y – media selection	interval measure	H4a: Filipino employees' CMC competence has a positive effect on media selection (aggregated). H4b: Filipino employees' CMC skills (attentiveness, coordination, expressiveness, composure) have a positive effect on Filipino employees' media selection (disaggregated).	Structural equation modeling (Beta, p-value)
x – CMC competence y – competency outcomes	interval measure	H5: Filipino employees' CMC competence has a positive effect on competency outcomes (aggregated).	Structural equation modeling (Beta, p-value)
x – Media selection y – Competency outcomes	interval measure	H6a: Filipino employees' media selection has a positive effect on CMC competency outcomes in using online collaborative communication tools (aggregated). H6b: Filipino employees' media selection has a positive effect on appropriateness, effectiveness, satisfaction, productivity/efficiency in using online collaborative communication tools (disaggregated).	Structural equation modeling (Beta, p-value)

x - CMC competence y - Competency outcomes z - Media selection (mediating variable)	interval measure	H7a: Filipino employees' media selection mediates the positive relationship between CMC competence and CMC competency outcomes (aggregated). H7b: Filipino employees' media selection mediates the positive relationship between CMC skills and appropriateness, effectiveness, satisfaction, productivity/efficiency (disaggregated).	Structural equation modeling (Beta, p-value)

G. Scope and Limitation

As indicated in this study, the focus dealt on the computer-mediated communication competence of Filipino employees working in the offshore outsourcing organization that utilized online collaborative communication tools. While the research recognized that there were other contexts or functions that could be tested, in this specific exercise, the research focused on the users' non-mediated skills derived from the operationalized Competence Model "analyzing and interpreting" by Bartram (2005) as applied in providing data solutions.

Respondents must be using online collaborative communication tools as a form of communication to communicate and collaborate with their colleagues and counterparts abroad.

Online collaborative communication technologies which support video, audio, screen sharing, group calling, document sharing, interactive whiteboard, recording, and instant messaging were focused on this study. Current technologies for online

collaborative communication tools such Cisco Jabber and WebEx, Microsoft Teams, Lync, Skype for Business, Slack, and Yo or any available collaborative tools that support the definition above were included in the scope of this study.

The Filipino employees who were hired at least 6 months from the time of employment and use online collaborative communication tools since the start of employment were part of this study.

H. Ethical Considerations

Ethical considerations in research are critical. In this study, the researcher maintained independence and impartiality in the process of conducting the research. Since the researcher is currently employed in an outsourcing organization, the researcher maintained objectivity in the research process and did not participate in any way nor influence the current research goal in the conduct of the study particularly in the data gathering process. The main role and focus of the researcher were on the research process alone.

In terms of ownership, this research study was for academic purposes only and the researcher declared that the sole owner of the results of this study were the researcher and the institution (The University of the Philippines) where the researcher is currently studying. The researcher obtained permission from the management of the company to ensure that no ethical compromise would arise (see Appendix L).

More importantly, this study upheld the *Republic Act 10173 or the Data Privacy Act of 2012*. Sensitive personal information were not collected such as complete name, individual's race, ethnic origin, marital status, religious affiliation, political affiliation,

health, education, social security number, tax identification number, home address, contact number and e-mail address.

However, the researcher asked consent from the respondents to declare the following: 1) age 2) gender and 3) years of working experience since these variables were important in the endeavor of this research. The researcher assured that there was a proper informed consent where respondents knowingly, voluntarily, intelligently, and in clear and manifest way, gave their consent to answer the questions aligned with the research problem and objectives of this study. Furthermore, the researcher upheld privacy, anonymity and confidentiality of the respondents who participated in this study.

I. The Researcher

The researcher is Darille Dayne R. Cabrera, a graduate student connected with the College of Mass Communication, University of the Philippines. He is at present a Business Analyst at Reed Elsevier Philippines, a subsidiary of RELX Group of Companies. He has been involved in Market Research, Competitive Intelligence and Business Development projects in the Media, Technology, and Legal & Risk Management industries.

CHAPTER V. RESULTS AND DISCUSSION

This chapter is divided into two sections. Section A discusses the demographic profile of the respondents, the context of analyzing and interpreting data solutions, the CMC competence, media and message selection, the competency outcomes of Filipino employees utilizing online collaborative communication tools, the result of the hypotheses and structural equation model (SEM). Section B provides answers and insights in line with the research problem and objectives.

A. Results

1. Demographic profile of respondents

To address specific objective 1 of this study, Filipino employees' demographic profile of was examined. A big majority of the respondents were women (360 or 61.7%) while 223 (38.3%) were men. Most of them were from the 26 to 30 years old bracket (38.25%) while 26.07% of them belonged to the 31 to 35 years old bracket. There were 21.62% who belonged to the 20 to 25 years old bracket. The mean age of the respondents is 29 years old.

For the combined years of work experience, a greatest number (30.19%) of respondents have 5 to 7 years of work experience while 20.75% of them have 8 to 10 years of work experience. Moreover, there were 18.18% who have 2 to 4 years of work experience followed by 17.84% who have 11 to 15 years of combined work experience.

Looking at the result of respondents' years of experience in using online collaborative communication tools for instant messaging, audio or video conferencing,

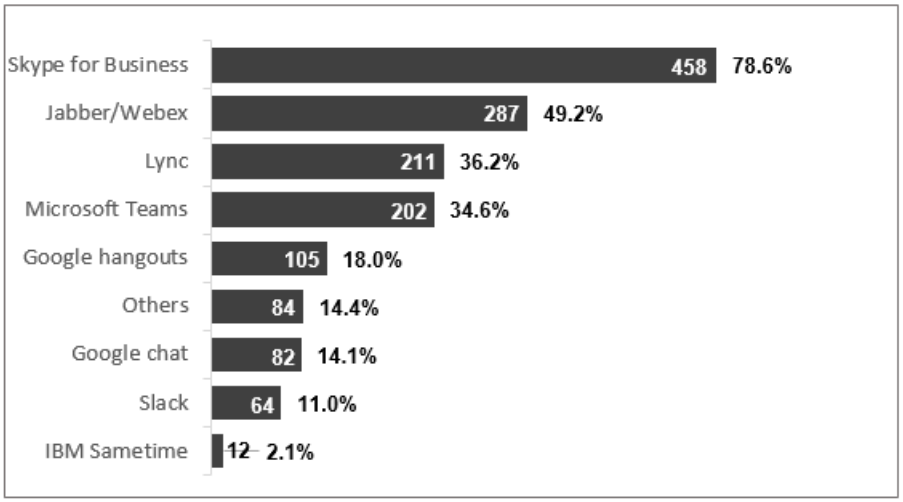
viewing and editing documents, application sharing, and co-browsing, a greatest number (37.74%) of respondents also have 5 to 7 years of experience in utilizing online collaborative communication tools in their workplace while 28.47% of them have 8 to 10 years of experience in using online collaborative communication tools. There were 25.39% who have 2 to 4 years of experience in using online collaborative communication tools.

Table 7. *Profile of Respondents* (N = 583)

Gender	**Frequency**	**Percentage**
Female	360	61.7
Male	223	38.3
Age		
26 to 30 years old	223	38.25
31 to 35 years old	152	26.07
20 to 25 years old	126	21.62
36 to 40 years old	60	10.29
41 to 45 years old	16	2.74
45 years old and above	6	1.03
Years of Work Experience		
5 to 7 years	176	30.19
8 to 10 years	121	20.75
2 to 4 years	106	18.18
11 to 15 years	104	17.84
6 months to 1 year	47	8.06
16 years and above	29	4.98
Years of Online Communication Tools Usage		
5 to 7 years	220	37.74
8 to 10 years	166	28.47
2 to 4 years	148	25.39
6 months to 1 year	49	8.4

In particular, a big majority (77.6%) of the respondents utilized Skype for Business in communicating and collaborating with their colleagues abroad. This was followed by respondents that utilized online collaborative communication tools like Cisco Jabber and WebEx (49.2%), Lync (36.2%) and Microsoft Teams (34.6%). These tools enable the organization or employees to collaboratively analyze and interpret data solutions, as well as positively gauge workflow systems.

Figure 6. *Online collaborative communication tools used by respondents* (N=583) *MR

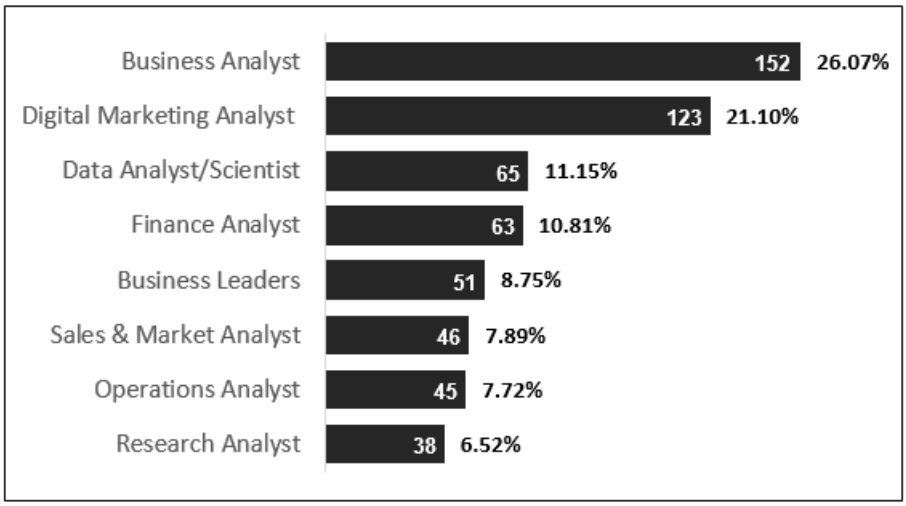


*multiple response
Others: MS SharePoint, Office 365

Lastly, a greatest number (26.6%) of respondents were Business Analysts followed by Digital Marketing Analysts (21.38%) who provide data solutions to their clients and customers abroad. Those who work as Business Analyst and Digital Marketing Analyst were known to be highly skilled in the operations like Data Analytics, Sales and Marketing, Finance and Customer Relationship Management (CRM) activities and the

most number of clients, customers, and business partners came from the United States of America and the United Kingdom.

Figure 7. *The respondents' occupation/position* (N = 583)



On the other hand, in the CMC competence theory, Spitzberg (2006), he explained that contextual factors were the product of an individual's experiences based on the contextual interaction. Integrating non-mediated functions such as analyzing and interpreting competencies where interaction occurs in a mediated space are related to CMC context (Bubas et al., 2004). Aligning the contextual factors as the independent variable of CMC competence, the study adopted the Great Eight Competency questionnaire by Bartram (2005). The researcher utilized the questions which focused on analyzing and interpreting competencies.

The respondents were asked to rate their level of agreement from 1 (strongly disagree) to 7 (strongly agree) about the statements pertaining to the way how they

collaborate with their colleagues in terms of analyzing and interpreting data solutions with their customers and client.

Table 8 showed the mean scores and standard deviation per contextual factor indicator. The results indicated that the Filipino employees in offshore outsourcing organization *"have coordinated tasks with others"* (M = 6.31, SD = 1.15), *"have used online collaborative communication tools"* when collaborating with their colleagues abroad (M = 6.31, SD = 0.99), *"have focused on solving problems based on the customers/clients need"* (M = 6.16, SD = 1.06) and *"uses online collaborative communication tools in my daily work"* (M = 6.16, SD = 1.31). On the other hand, respondents *"have rarely gone without communicating via online collaborative communication tools"* (M = 5.17, SD = 1.83). This suggested that Filipino employees usually preferred online collaborative communication tools instead of other forms of communication (i.e. e-mail, phones) to help, coordinate, and collaborate work-related tasks with their colleagues abroad and to deliver individual assignments such as providing data solutions through the use of online communication tools.

Table 8. *Mean and standard deviation per contextual factors indicator* (N = 583)

Analyzing and Interpreting Data Solutions Indicators	Mean	SD
I use online collaborative communication tools.	6.31	1.15
I have learned to coordinate tasks with others.	6.31	0.99
I heavily use online collaborative communication tools in my work executions.	6.16	1.31
I focus on solving problems based on their need.	6.16	1.06
I analyze and interpret data effectively to produce results.	6.07	1.32
I finish tasks with the help of my colleagues.	5.89	1.21
I communicate more effectively through writing.	5.54	1.46
I rarely go without communicating via online collaborative communication tools.	5.17	1.83
Overall score	5.95	0.89

3. CMC Competence

This study looks into the relationship between individual user's CMC motivation, knowledge and skills, specifically how individual's CMC competence relates to the use of online collaborative communication tools. The researcher utilized the CMC competence version 4 questionnaire by Spitzberg (2006).

Each of the three dimensions was the observed variable to measure CMC competence. The respondents were asked to rate their level of agreement from 1 (strongly disagree) to 7 (strongly agree) on statements pertaining to their motivation, knowledge and skills in communicating and collaborating with their colleagues abroad. Table 9 showed the mean scores and standard deviation per CMC competence - Motivation

indicator. The results indicated that the Filipino employees in offshore outsourcing organization *"enjoyed communicating and collaborating while using online collaborative communication tools"* (M = 6.17, SD = 1.03), and *"looked forward to communicating and collaborating with their colleagues using online collaborative communication tools"* (M = 6.02, SD = 1.09). On one hand, as indicated by the low mean scores, the respondents generally were not anxious in using online collaborative communication tools (M = 3.13, SD = 1.68).

Table 9. *Mean and standard deviation per CMC motivation indicator* (N = 583)

CMC Motivation Indicators	Mean	SD
I enjoy communicating and collaborating while using online collaborative communication tools.	6.17	1.03
I look forward to communicating and collaborating with my colleagues using online collaborative communication tools.	6.02	1.09
I am very motivated to communicate with others via online collaborative communication tools.	5.89	1.10
I am nervous about communicating with others via online collaborative communication tools.*	3.20	1.71
Communicating via online collaborative communication tools makes me anxious.*	3.13	1.68
Overall score	5.55	0.96

*reverse-coded questions

Table 10 showed the mean scores and standard deviation per CMC competence - Knowledge indicator. The results indicated that the Filipino employees in offshore outsourcing organization were *"knowledgeable in using online collaborative communication tools"* (M = 6.08, SD = 0.97), and *"familiar with how to communicate*

via online collaborative communication tools" (M = 6.08, SD = 1.10). Conversely, as indicated by the low mean scores, the respondents generally did not tend to lose ideas when communicating via online collaborative communication tools (M = 3.17, SD = 1.75).

Table 10. *Mean and standard deviation per CMC knowledge indicator* (N = 583)

CMC Knowledge Indicators	Mean	SD
I am knowledgeable in using online collaborative communication tools.	6.08	0.97
I am familiar with how to communicate via online collaborative communication tools.	6.06	1.10
I know how to phrase ideas in communicating via online collaborative communication tools.	5.97	0.97
I tend to lose ideas when communicating via online collaborative communication tools.*	3.17	1.75
Overall score	5.73	0.85

*reverse-coded questions

Table 11 showed the mean scores and standard deviation per CMC competence – Skills (i.e. coordination, attentiveness, expressiveness, composure) indicator. The results indicated that the Filipino employees in offshore outsourcing organization *"showed concern and interest for the person they conversed with via online collaborative communication tools"* (M = 6.06, SD = 1.00), *"always asked question related to the topic when communicating via online collaborative communication tools"* (M = 5.99, SD = 1.06), *"showed compassion and empathy through the way I communicate via online*

collaborative communication tools" (M = 5.94, SD = 1.11) and *"skilled at prioritizing their messages via online collaborative communication tools"* (M = 5.83, SD = 1.12).

On the other hand, as indicated by the low mean scores, the respondents found it easy to know when and how to end a topic during online dialogues (M = 3.47, SD = 1.78), were expressive in conversation via online collaborative communication messages (M = 3.39, SD = 1.71), struggle at expressing the opinions or suggestions when using online collaborative communication tools (M = 3.33, SD = 1.79), or were articulate in presenting their ideas when using online collaborative communication tools (M = 3.32, SD = 1.70).

Table 11. *Mean and standard deviation per CMC competence skills indicator* (N = 583)

CMC Skills Indicators	Mean	SD
I show concern and interest for the person I'm conversing with via online collaborative communication tools.	6.06	1.00
I always ask question related to the topic when communicating via online collaborative communication tools.	5.99	1.06
I can show compassion and empathy through the way I communicate via online collaborative communication tools.	5.94	1.11
I'm skilled at prioritizing my messages via online collaborative communication tools.	5.83	1.12
I'm confident with the way I write/speak when using online collaborative communication tools.	5.78	1.08
I'm skilled at the timing my responses to my colleagues inquiries when via online collaborative communication tools.	5.72	1.10
I'm calm and composed during discussions when using online collaborative communication tools.	5.70	1.17
I'm proactive in my messages via online collaborative communication tools.	5.68	1.15
I manage the discussion between me and my colleagues in online interaction skillfully.	5.67	1.14
I use expressive symbols in my messages (e.g. smiles) via online collaborative communication tools.	5.40	1.59
I tend to be humorous in my messages via online collaborative communication messages.	5.10	1.50
I find it difficult to know when and how to end a topic during online dialogues.*	3.47	1.78
I am not expressive in my conversation via online collaborative communication messages.*	3.39	1.71
I struggle at expressing my opinions or suggestions when using online collaborative communication tools.*	3.33	1.79
I'm not articulate in presenting my ideas when using online collaborative communication tools.*	3.32	1.70
Overall score	5.42	0.77

*reverse-coded questions

4. Media and Message Selection

Communication competence may be achieved by choosing the most appropriate medium and the one that will be effective to accomplish a goal. The chosen medium may be an effective way to achieve the outcome, yet it may not have a required degree of social presence or richness (Westmeyer et al., 1998). Likewise, media selection is explained not simply as an individual's technological skills, but also the effects of the cognitive process during mediated interactions since individuals' cognitive reactions toward manipulating the functions of an interpersonal medium might be various even within the same interpersonal medium (Hwang, 2011). Levels of media efficacy can be different from each individual and according to the communicative situation at hand.

Table 12 showed the mean scores and standard deviation per media selection indicators. The results indicated that the Filipino employees in offshore outsourcing organization were *"confident they will learn how to use any new online collaborative communication tools"* (M = 6.32, SD = 0.93), *"can quickly learn how to use new online collaborative communication tools"* (M = 6.30, SD = 0.92), and *"they feel capable of using online collaborative communication tools"* (M = 6.29, SD = 0.95). On the other hand, as indicated by the low mean scores, neither of the respondents utilized online collaborative communication tool given its user-friendly function and features (M = 4.06, SD = 1.91).

Table 12. *Mean and standard deviation per media selection indicators* (N = 583)

Media Selection Indicators	Mean	SD
I am confident I will learn how to use any new online collaborative communication tools.	6.32	0.93
I can quickly learn how to use new online collaborative communication tools.	6.30	0.92
I feel capable in using online collaborative communication tools.	6.29	0.95
I'm excited when I have to learn how to use updated online collaborative communication tools.	6.00	1.19
If it's not user-friendly, I will not use it.*	4.06	1.91
Overall score	5.77	0.79

*reverse-coded questions

Message selection through the concepts of complexity, equivocality, quantity, and emotional content was applied in this study. Table 13 showed the mean scores and standard deviation per message selectivity indicator. The results indicated that the Filipino employees in offshore outsourcing organization chose online collaborative communication tools to communicate with my colleagues based on *"how open the interaction needs to be"* (M = 6.32, SD = 0.93), *"how fast they can set up discussion"* (M = 6.30, SD = 0.92), and *"how important the information is"* (M = 6.29, SD = 0.95). On the other hand, as indicated by the low mean scores, neither of the respondents chose online collaborative communication tool based on the volume of information that needs to be communicated (M = 4.06, SD = 1.91).

Table 13. *Mean and standard deviation per message selectivity indicators* (N = 583)

Message Selection Indicators	Mean	SD
Filipino employees in offshore outsourcing organization choose online collaborative communication tools to communicate with my colleagues based on:		
how open the interaction needs to be.	6.32	0.93
how fast I can set up discussion.	6.30	0.92
how important the information is.	6.29	0.95
the sensitivity of issues I need to express.	6.00	1.19
the volume of information that need to be communicated.	4.06	1.91
Overall score	5.79	0.84

5. CMC Competency Outcomes

Competency outcomes evaluation is a proposed component for learning CMC competence which considers competence in CMC as an evolving, emerging process in sequences of technologically-mediated interactions wherein the users incrementally gain additional knowledge and increases the level of skill on the basis of feedback that individual received. Identifying the outcomes derived from context-based CMC competence and other factors would satisfy the query as to what would be the measurable and observable outcomes for which communicating competently matters.

Spitzberg (2011) described the model of communication competence that motivation, knowledge, and skills and other factors have been said to predict impressions of competence which is typically tested by treating appropriateness, effectiveness, clarity, satisfaction, and productivity or efficiency as criterion outcomes of competence interaction with the various motivational, knowledge and skills constructs as predictors.

Usually, these outcomes should be positively related to CMC competence but in any given context, communicators may strategically sacrifice one or more outcomes for others, especially when the outcomes are perceived to be mutually incompatible (Spitzberg, 2006; Bubas & Spitzberg, 2008).

The researcher utilized the CMC competence version 4 questionnaire by Spitzberg (2006). Each of the three dimensions is the observed variable to measure it. The respondents were asked to rate their level of agreement from 1 (strongly disagree) to 7 (strongly agree) on statements pertaining on the competence outcomes in communicating and collaborating with their colleagues abroad using online collaborative communication tools.

Table 14 showed the mean scores and standard deviation per competence outcome indicator. Generally, the outcomes of using online collaborative communication tools appeared to be appropriate, effective, clear, productive or efficient and satisfied when Filipino employees utilized it in communicating and collaborating with their colleagues abroad. Specifically, the results indicated that the Filipino employees in the offshore outsourcing organization were *"mindful of their comments and behaviors when using online collaborative communication tools"* (M = 6.39, SD = 0.94), *"pay attention to the way they say things when using online collaborative communication tools"* (M = 6.38, SD = 0.98), *"avoid saying offensive things that might offend their colleague/s when using online collaborative communication tools"* (M = 6.35, SD = 1.17), perceived *"online collaborative communication tools save their time"* (M = 6.16, SD = 1.00), *"feel good conversing via online collaborative communication tools"* (M = 6.08, SD = 1.00), and

"enjoy interactions with others when online collaborative communication tools"

(M = 6.08, SD = 1.02).

Table 14. *Mean and standard deviation per competence outcomes indicators* (N=583)

Competence Outcomes Indicators	Mean	SD
I am mindful of my comments and behaviors when using online collaborative communication tools.	6.39	0.94
I pay attention to the way I say things when using online collaborative communication tools.	6.38	0.98
I avoid saying offensive things that might offend my colleague when using online collaborative communication tools.	6.35	1.17
Online collaborative communication tools saves my time.	6.16	1.00
I feel good conversing via online collaborative communication tools.	6.08	1.00
I enjoy interactions with others when online collaborative communication tools.	6.08	1.02
I am more efficient when using online collaborative communication tools.	6.05	0.96
I am satisfied to communicate via online collaborative communication tools.	6.05	0.93
My online interactions are productive.	6.04	1.00
I effectively accomplished my objectives when using online collaborative communication tools.	6.02	0.94
My ideas are accurate and clear.	6.00	0.99
I am pleased with my interactions via online collaborative communication tools.	5.98	0.99
My ideas are rarely misunderstood.	5.96	0.98
I consistently achieve my goals in interactions via online collaborative communication tools.	5.87	1.06
I get ideas clearly from my colleagues when using online collaborative communication tools.	5.84	1.06
Interactions through online tools are effective in completing objectives that I set out to accomplish.	5.80	1.04
I generally get what I want out of interactions via online collaborative communication tools.	5.64	1.24
I am effective in my conversation with others when using online collaborative communication tools.	5.19	1.47
Overall score	5.99	0.82

6. Hypotheses testing using Structural Equation Modeling

To provide answers to the hypotheses in this study, structural equation modeling (SEM) was conducted. SEM provided the answers to the relationship of demographic profile, contextual factors, CMC competence, media selection and competency outcomes. SPSS Analysis of Moment Structures (AMOS) version 24 was utilized to generate the structural equation model of the context-based CMC competence in the offshore outsourcing organization using the model of CMC competence theory by Brian Spitzberg.

a. SEM aggregate computation

The variables in demographic profile and CMC competence were examined to address specific objective 2 which is to explain the relationship between the demographic profile of Filipino employees, who use online collaborative communication tools and their CMC competence.. This subsection present the results of testing hypotheses H1a (see Table 15).

H1a: There were no causal relationship between employees' age, years of online communication tools usage, and years of work experience to CMC competence.

Table 15. *Relationship between demographic profile to CMC competence* (N = 578)

Direct Path	Estimate	Lower	Upper	p-value
Age to CMC Competence	0.011	-0.08	0.099	0.816
Years of using OCCT to CMC Competence	0.025	-0.077	0.133	0.614
Years of work experience to CMC Competence	-0.023	-0.095	0.051	0.522

OCCT – Online collaborative Communication Tools
Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

The variables contextual factors and CMC competence were examined to address specific objective 3 assessing how contextual factors affect Filipino employees CMC competence in terms of communicating and collaborating in online mediated platforms. The context focus was at how Filipino employees increase their CMC competence to analyze and interpret data solutions (i.e. applying expertise and technology, writing & reporting, and analyzing) when utilizing online communication tools. This subsection present the results of testing hypotheses H2a (see Table 16).

H2a: There was a positive and significant causal relationship between analyzing and interpreting data solutions to Filipino employees' CMC competence ($\beta = .82$, $p < .001$).

Table 16. *Relationship between Analyzing/Interpreting data solutions to CMC competence* (N = 578)

Direct Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
Analyzing/Interpreting to CMC competence	0.885	0.811	0.935	**0.001**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

A mediating effect occurs when (1) causal relationship between contextual factors such as analyzing and interpreting data solutions and CMC competence is significant and (2) the causal relationship between CMC competence towards media selection is significant. This subsection present the results of testing hypothesis H3 (see Table 17).

H3: Filipino employees' CMC competence mediated the positive relationship between analyzing and interpreting data solution and media selection ($\beta = .812$, $p < .001$).

Table 17. Mediating effects between Analyzing/Interpreting, CMC competence and media selection (N = 578)

Indirect Path	**Estimate**	**Confidence Interval**		**p-value**
		Lower	**Upper**	
Analyzing/Interpreting to CMC competence to Media Selection	0.856	0.777	0.914	**0.001**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

The Filipino employees' CMC competence through self-assessed and self-rated questionnaire was examined to address specific objective 4 identifying the relationship of Filipino employees CMC competence and media selection in using online collaborative communication tools.

CMC competence model explains that motivation represents the initial activating process of understanding and application (knowledge) which manifests through the skills that are applied to the selection of media. Motivation is better served by certain media features (i.e. online technology features) and knowledge of the most competent tool or technology is selected accordingly and subsequently implemented through the skills of CMC.

Therefore, this will determine how Filipino employees select online collaborative communication tools in terms of the medium of choice, media interaction and media efficacy in communicating using online collaborative communication tools. This subsection present the results of testing hypothesis H4a (see Table 18).

H4a: There was a positive and significant causal relationship between Filipino employee's CMC competence and media selection ($\beta = .99$, $p < .001$).

Table 18. *Causal relationship between CMC competence and media selection* (N = 578)

Direct Path	**Estimate**	**Confidence Interval**		**p-value**
		Lower	**Upper**	
CMC competence to media selection	0.968	0.886	1.023	**0.001**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

CMC competence predicted impressions of competence which could be typically tested by considering the competency outcomes of using online communication and collaboration (Spitzberg, 2006). In this study, the criterion outcomes of competence interaction focused on the context-based CMC competence through analysis and interpretation of data solution.

CMC competence and competency outcomes were examined to address specifc objective 5 describing how Filipino employees' CMC competence affects their competency outcomes in using online collaborative communication tools. This subsection presents the result of testing hypothesis H5 (see Table 19).

H5: There was a positive and significant causal relationship between Filipino employees' CMC competence and competency outcomes ($\beta = .74$, $p < .001$).

Table 19. *Causal relationship between CMC competence and competency outcomes* (N = 578)

Direct Path	**Estimate**	**Confidence Interval**		**p-value**
		Lower	**Upper**	
CMC competence to competency outcomes	0.658	0.571	0.742	**0.001**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

The variables media selection and competency outcomes were examined to address objective 6 to understand the relationship of Filipino employees' competence outcomes and the context-based CMC competence and other factors in communicating and collaborating with their colleagues in a computer-mediated context.

CMC competence predicted the impressions of competence which could be typically tested by considering the competency outcomes in using online communication and collaboration.

Moreover, media selection creates outcomes that can be assessed on the basis of appropriateness, effectiveness, satisfaction, and productivity or efficiency. The users' media selection in terms of their choice, interaction, and efficacy determines the appropriateness, effectiveness, satisfaction, and productivity/efficiency. Thus, media selection influences CMC competency outcomes (Spitzberg, 2006). This subsection presents the results of testing hypothesis H6 (see Table 20).

H6a: There was a positive and significant causal relationship between Filipino employees media selection and CMC competence outcomes ($\beta = 0.19$, $p < 0.001$).

Table 20. *Causal relationship between media selection and competency outcomes* (N = 578)

Direct Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
Media selection to competency outcomes	0.175	0.097	0.260	**0.001**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

The findings indicated that Filipino employees with higher CMC competence were confident to utilize online collaborative communication tools based on their choice, interaction and efficacy during mediated interactions and consequently perceived better competency outcomes in utilizing online collaborative communication tools.

Lastly, a mediating effect occurs when (1) causal relationship between CMC competence and media selection is significant and (2) the causal relationship between media selection towards competency outcomes is significant. This subsection presents the results of testing hypothesis H7 (see Table 21).

H7a: Media Selection mediated the positive relationship between CMC competence and competency outcomes ($\beta = 0.19$, $p < .01$).

Table 21. Mediating effects between CMC competence, media selection and competency outcomes (N = 578)

Indirect Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
CMC competence to Media Selection to Competency Outcomes	0.17	0.103	0.236	**0.01**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.01$, $p < 0.001$ (indicated in bold letters)
Plug-in tool for indirect effects measures: Gaskin, J. & Lim, J. (2018), "Indirect Effects", AMOS Plugin. Gaskination's StatWiki.

The results of the structural equation model relating all the predictors to competency outcomes were presented in Table 22. Overall, each communication component yielded a significant contributions to competency outcomes, therefore, highlighting the general usefulness of the different facets of context-based CMC competence in the offshore outsourcing organization and the overall theoretical model.

Table 22. Correlational matrix of demographic profile, contextual factors, CMC competence, media selection to competency outcomes (N = 578)

	Competency Outcomes
Age	-0.001
Years of OCCT use	-0.053
Years of work experience	0.050
Analyzing and Interpreting Data Solutions	**0.169*** **
CMC Competence	**0.737*** **
Media Selection	**0.192** **
R^2	0.725

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: **p < 0.010, ***p < 0.001 (indicated in bold letters)
R2 is the variance explained by all variables in the model as predictors in the structural equation model

To assess the model fit of the path analysis – aggregated computation, the model was evaluated based on the common fit criteria, specifically (a) Chi-square/df, p-value for the model, (b) Comparative Fit Index (CFI), (c) Standardized Root Mean Square Residual (SRMR), (d) Root mean square error of approximation (RMSEA) and (e) PClose. The researcher used Hu and Bentler (1999) combinations of measures wherein the threshold for CMIN/DF is 1 to 3, CFI > 0.95 and SRMR <0.08. To further solidify evidence, the researcher added the RMSEA < 0.06 and PClose > 0.05.

Table 23 showed the model fit statistics for path analysis based on the common fit criteria set by the researcher. The path analysis exhibited an excellent fit results (CMIN/DF = 1.420, CFI = 0.999, SRMR = 0.011, RMSEA = 0.027, PClose = 0.813). The researcher used the data imputed from the CFA that resulted to 4 variables and utilized a plugin in AMOS called Model Fit Measures developed by Gaskin & Lim (2016) to get the exact model fit measures.

Table 23. *Model fit measure for SEM* (**aggregated**) (N = 578)

Measure	Estimate	Threshold	Interpretation
CMIN	8.519	--	--
DF	6.000	--	--
CMIN/DF	1.420	Between 1 and 3	Excellent
CFI	0.999	>0.95	Excellent
SRMR	0.011	<0.08	Excellent
RMSEA	0.027	<0.06	Excellent
PClose	0.813	>0.05	Excellent

Note: Hu and Bentler (1999, "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives") recommend combinations of measures. The researcher prefer a combination of CFI>0.95 and SRMR<0.08. To further solidify evidence, the researcher add the RMSEA < 0.06.

Plug-in tool for model fit measures: Gaskin, J. & Lim, J. (2016), "Model Fit Measures", AMOS Plugin. Gaskination's StatWiki.

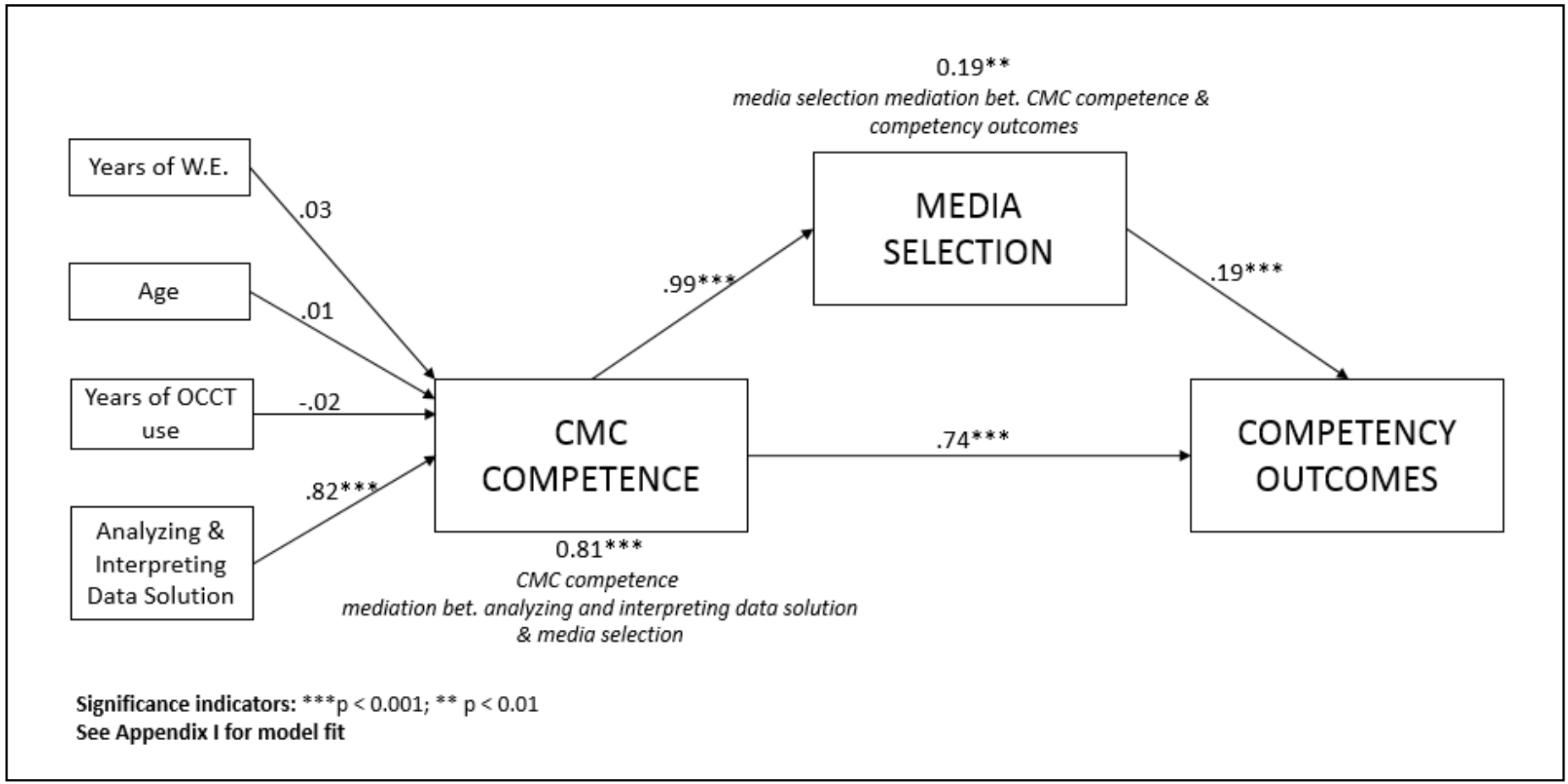


Figure 8. 1st *Structural equation model – aggregated computation* (N = 578)

b. SEM disaggregate computation (exploration)

As hypothesis H1a was not supported, specifically at how Filipinos employees' age, years of online communication tools use, years of work experience affected CMC competence. The researcher re-examined the data and rerun the analyses by disaggregating the components of CMC competence and competency outcomes.

Fortunately, results from the new set of analyses support the original hypotheses, specifically for hypothesis 1 where the researcher found out that there was a positive and significant causal relationship between employees' age and CMC skills composure. However, the study still not found any causal relationship between employees' years of online communication tools use and years of work experience to CMC motivation, knowledge, and skills (i.e. attentiveness, expressiveness, composure, coordination) (see Table 24).

H1b: There was a positive and significant causal relationship between Filipino employees' age and CMC skills composure ($\beta = .09$, $p < .05$). The results indicated that the Filipino employees' age affected the ability to display confidence, mastery, and comfortableness as a CMC interactant when using online collaborative communication tools. While there was relatively little research directly relevant to indices of composure in CMC interaction, this evidence, explained by the causal relationship of age and CMC skills, substantiated the influence of age to the components of CMC competence, specifically on CMC skills.

Table 24. *Relationship between demographic profile and CMC competence (disaggregated)* (N = 577)

Direct Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
Age to CMC competence				
Age to Composure	0.015	0.003	0.027	**0.04**
Age to Expressiveness	0.014	-0.002	0.03	0.163
Age to Attentiveness	-0.001	-0.009	0.006	0.729
Age to Coordination	-0.004	-0.012	0.004	0.358
Age to Motivation	0.001	-0.008	0.008	0.873
Age to Knowledge	0	-0.004	0.005	0.851
OCCT years of experience to CMC competence				
OCCT years of use to Composure	-0.013	-0.036	0.008	0.324
OCCT years of use to Attentiveness	0.011	-0.002	0.025	0.177
OCCT years of use to Expressiveness	-0.008	-0.03	0.012	0.531
OCCT years of use to Coordination	0.007	-0.007	0.023	0.415
OCCT years of use to Motivation	-0.004	-0.019	0.012	0.665
OCCT years of use to Knowledge	0.002	-0.008	0.011	0.734
Years of work experience to CMC competence				
Years of work experience to Knowledge	0.001	-0.015	0.019	0.871
Years of work experience to Motivation	-0.004	-0.019	0.013	0.779
Years of work experience to Motivation	0.025	0.006	0.045	0.028
Years of work experience to Coordination	-0.005	-0.048	0.035	0.846
Years of work experience to Attentiveness	-0.011	-0.023	0.002	0.16
Years of work experience to Composure	-0.003	-0.018	0.015	0.805
Years of work experience to competence outcomes				
Years of work to Productivity	-0.001	-0.008	0.005	0.803
Years of work to Satisfaction	-0.002	-0.007	0.003	0.443
Years of work to Appropriateness	0.004	-0.002	0.009	0.279
Years of work to Effectiveness	-0.001	-0.008	0.005	0.696

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

Furthermore, the researcher went on to explore the relationships of a disaggregated components of a context-based CMC competence and how if affect the media selection, and competency outcomes (i.e. appropriateness, effectiveness, satisfaction, productivity/efficiency) to address **H2b, H4b, H6b, and H7b**.

The variables contextual factors, CMC motivation, and CMC knowledge were examined assessing how contextual factors affected Filipino employees' CMC motivation and CMC knowledge in terms of communicating and collaborating in online mediated platforms. The context focus was at how Filipino employees increase their CMC motivation and CMC knowledge to analyze and interpret data solutions (i.e. applying expertise and technology, writing & reporting, and analyzing) when utilizing online communication tools. This subsection presents the results of testing hypotheses H2b, H4b, and H6b (see Table 25).

H2b: There was a positive and significant causal relationship between analyzing and interpreting data solutions to Filipino employees' CMC motivation ($\beta = .79$, $p < .001$), and between analyzing and interpreting data solutions to Filipino employees' CMC knowledge ($\beta = .84$, $p < .001$).

The components of CMC skills (i.e. coordination, attentiveness, expressiveness, composure) and Media Selection were examined to address objective 4 describing how Filipino employees' CMC skills affected their selection media using online collaborative communication tools.

CMC competence model explains that motivation represents the initial activating process of understanding and application (knowledge) which manifests through the skills that are applied to the selection of media. Motivation is better served by certain media

features (i.e. online technology features) and knowledge of the most competent tool or technology is selected accordingly and subsequently implemented through the skills of CMC.

Therefore, this will determine how Filipino employees select online collaborative communication tools in terms of the medium of choice, media interaction and media efficacy in communicating using online collaborative communication tools.

H4b: There was a positive and significant causal relationship between Filipino employees CMC skills attentiveness to media selection ($\beta = .46$, $p < .001$), composure to media selection ($\beta = .25$, $p < .001$), and inverse significant causal relationship between coordination to media selection ($\beta = -.25$, $p < .001$). However, there was no significant causal relationship between CMC skill expressiveness and media selection. Thus, hypothesis H4b was supported for attentiveness, composure and coordination. H4b was rejected for expressiveness.

The variables media selection and competency outcomes were examined to address objective 6 to understand the relationship of Filipino employees' competence outcomes and the context-based CMC competence and other factors in communicating and collaborating with their colleagues in a computer-mediated context.

CMC motivation, knowledge, and skills predicted impressions of competence which could be typically tested by considering the appropriateness, effectiveness, satisfaction, and productivity/efficiency of online communication and collaboration.

Moreover, media selection creates outcomes that can be assessed on the basis of appropriateness, effectiveness, satisfaction, and productivity or efficiency. The users' media selection in terms of their choice, interaction, and efficacy determines the

appropriateness, effectiveness, satisfaction, and productivity/efficiency. Thus, media selection influences CMC competency outcomes (Spitzberg, 2006).

H6b: There was a positive and significant causal relationship between Filipino employees media selection and CMC competence outcomes, specifically, between media selection and productivity/efficiency ($\beta = .13$, $p < 0.05$), media selection and satisfaction ($\beta = .28$, $p < .001$), media selection and effectiveness ($\beta = .17$, $p < .001$), and media selection and appropriateness ($\beta = .08$, $p < .100$).

Table 25. *Summary table for hypotheses 2b, 4b, 6b (disaggregated computation)*
(N = 577)

Direct Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
Analyzing & Interpreting to CMC motivation & knowledge				
Analyzing/Interpreting to Motivation	0.807	0.751	0.857	**0.001**
Analyzing/Interpreting to Knowledge	0.81	0.756	0.853	**0.001**
CMC motivation & knowledge to coordination, attentiveness, expressiveness, composure				
Motivation to Coordination	0.333	0.249	0.439	**0.001**
Motivation to Attentiveness	0.304	0.24	0.373	**0.001**
Motivation to Expressiveness	-0.023	-0.179	0.137	0.813
Motivation to Composure	0.168	0.113	0.224	**0.001**
Knowledge to Coordination	0.693	0.592	0.778	**0.001**
Knowledge to Attentiveness	0.521	0.438	0.602	**0.001**
Knowledge to Expressiveness	0.092	-0.112	0.281	0.452
Knowledge to Composure	0.492	0.418	0.563	**0.001**
Attentiveness, composure, coordination, expressiveness, to media selection				
Attentiveness to Media selection	0.46	0.368	0.551	**0.001**
Composure to Media selection	0.245	0.157	0.33	**0.002**
Coordination to Media selection	-0.234	-0.317	-0.15	**0.001**
Expressiveness to Media selection	-0.012	-0.042	0.02	0.568
Media selection to productivity, satisfaction, effectiveness, appropriateness				
Media selection to Productivity	0.128	0.036	0.236	**0.026**
Media selection to Satisfaction	0.201	0.116	0.289	**0.001**
Media selection to Effectiveness	0.164	0.076	0.254	**0.003**
Media selection to Appropriateness	0.077	-0.015	0.165	**0.091**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)

A mediating effect occurs when (1) causal relationship between CMC skills & media selection is significant and (2) the causal relationship between media selection (the mediator variable) towards competence outcomes (i.e. appropriateness, effectiveness, satisfaction, and productivity/efficiency) is significant. This subsection presents the results of testing hypothesis H7b (see Table 26).

H7b: Media selection mediated the positive relationship between attentiveness to effectiveness ($\beta = .08$, $p < .01$), productivity/efficiency ($\beta = .06$, $p < .05$), and satisfaction ($\beta = .08$, $p < 0.001$). H7b was not supported for appropriateness.

Media selection mediated the positive relationship between composure to effectiveness ($\beta = .04$, $p < .001$), productivity/efficiency ($\beta = .03$, $p < .05$), and satisfaction ($\beta = .05$, $p < 0.001$). Similarly, H7b was not supported for appropriateness.

Media selection mediated the inverse relationship between coordination to effectiveness ($\beta = -.04$, $p < .01$), productivity/efficiency ($\beta = -.03$, $p < .05$), and satisfaction ($\beta = -.05$, $p < 0.001$). Similarly, H7b was not supported for appropriateness.

Media selection mediated the positive relationship between expressiveness to competence outcomes were not supported.

The findings indicated that Filipino employees with higher CMC skills in terms of attentiveness, composure and coordination were confident to utilize online collaborative communication tools based on their choice, interaction and efficacy during mediated interactions and consequently perceived better CMC competence outcomes in terms of its effectiveness, productivity, and satisfaction in utilizing online collaborative communication tools.

Table 26. Mediating effects between coordination, attentiveness, expressiveness, composure), media selection and competence outcomes (N = 577)

Indirect Path	Estimate	Confidence Interval		p-value
		Lower	Upper	
Attentiveness to MS to Appropriateness	0.035	-0.004	0.084	0.144
Attentiveness to MS to Effectiveness	0.075	0.037	0.128	**0.002**
Attentiveness to MS to Productivity	0.059	0.017	0.114	**0.022**
Attentiveness to MS to Satisfaction	0.093	0.052	0.148	**0.001**
Composure to MS to Appropriateness	0.019	-0.002	0.046	0.134
Composure to MS to Effectiveness	0.04	0.018	0.074	**0.002**
Composure to MS to Productivity	0.031	0.009	0.068	**0.023**
Composure to MS to Satisfaction	0.049	0.028	0.078	**0.001**
Coordination to MS to Appropriateness	-0.018	-0.045	0.002	0.131
Coordination to MS to Effectiveness	-0.038	-0.069	-0.017	**0.002**
Coordination to MS to Productivity	-0.03	-0.065	-0.009	**0.02**
Coordination to MS to Satisfaction	-0.047	-0.076	-0.026	**0.001**
Expressiveness to MS to Appropriateness	-0.001	-0.006	0.001	0.328
Expressiveness to MS to Effectiveness	-0.002	-0.008	0.003	0.463
Expressiveness to MS to Productivity	-0.001	-0.007	0.002	0.368
Expressiveness to MS to Satisfacton	-0.002	-0.009	0.004	0.518

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: $p < 0.100$, $p < 0.050$, $p < 0.010$, $p < 0.001$ (indicated in bold letters)
Plug-in tool for indirect effects measures: Gaskin, J. & Lim, J. (2018), "Indirect Effects", AMOS Plugin. Gaskination's StatWiki.

The results of the disaggregated structural equation model relating all the predictors to appropriateness, effectiveness, satisfaction, and productivity were presented in Table 26. Overall, each communication component yielded a significant contributions to the outcomes, therefore, highlighting the general usefulness of the different facets of context-based CMC competence in the offshore outsourcing organization and the overall theoretical model. R^2 of competency outcomes appropriateness, effectiveness, satisfaction, productivity were 0.77, 0.73, 0.88, and 0.69 respectively, which supported that variables in the hypothesized model adequately explained competency outcomes, the dependent variable (see Table 27).

Table 27. *Correlational matrix of contextual factors, CMC competence, media selection on competence outcomes (disaggregated computation)* (N = 577)

	CMC Competency Outcomes			
	Appropiateness	Effectiveness	Satisfaction	Productivity
Analyzing and Interpreting Data Solutions	0.203***	0.285***	-0.066**	0.23***
CMC Motivation	-0.264***	-0.047	0.38***	0.156***
CMC Knowledge	0.367***	-0.263***	-0.481***	0.003
CMC S. Coordination	-0.249***	0.505***	-0.006	0.168**
CMC S. Attentiveness	0.347***	-0.067	0.207***	0.027
CMC S. Expressiveness	-0.084***	-0.089***	0.031	0.039
CMC S. Composure	-0.02	0.385***	0.003	0.186**
Media Selection	0.08†	0.166***	0.179***	0.126*
R^2	**0.77**	**0.73**	**0.88**	**0.69**

Note: The sample was bootstrapped at 2000 with 95% confidence level
Significance indicators: †p < 0.100, *p < 0.050, **p < 0.010, ***p < 0.001 (indicated in bold letters)
R2 is the variance explained by all CMC competence, Contextual factors, and media selection as predictors in the structural equation model

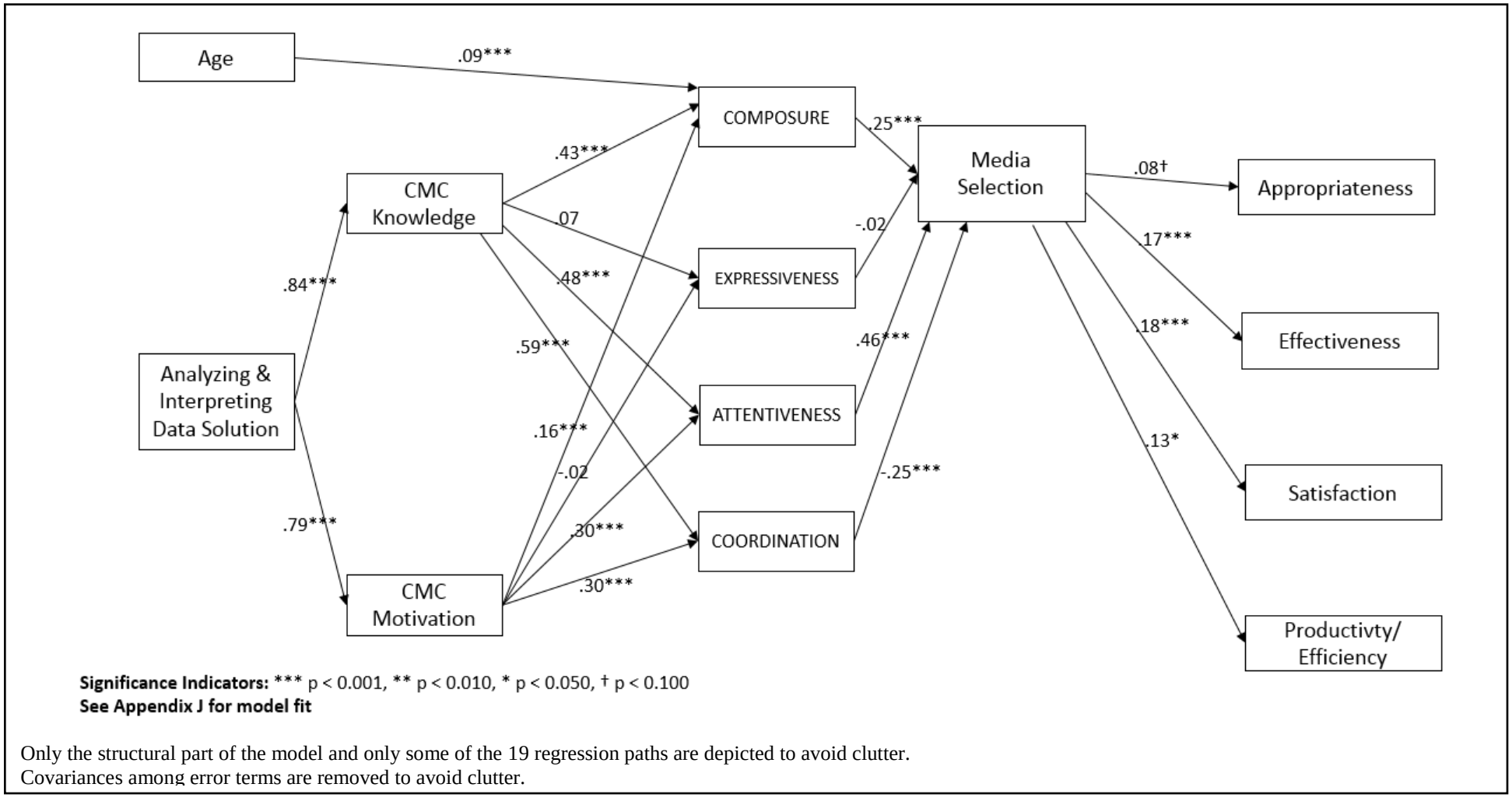
Table 28 showed the model fit statistics for path analysis for disaggregate computation based on the common fit criteria set by the researcher. The path analysis exhibited an excellent fit results (CMIN/DF = 2.278, CFI = 0.997, SRMR = 0.01, RMSEA = 0.047, PClose = 0.588). The researcher used the data imputed from the CFA that resulted to 12 variables and utilized a plugin in AMOS called Model Fit Measures developedt by Gaskin & Lim (2016) to get the exact model fit measures.

Table 28. *Model fit measure for SEM* (**disaggregated**) (N = 577)

Measure	Estimate	Threshold	Interpretation
CMIN	54.673	--	--
DF	24	--	--
CMIN/DF	2.278	Between 1 and 3	Excellent
CFI	0.997	>0.95	Excellent
SRMR	0.01	<0.08	Excellent
RMSEA	0.047	<0.06	Excellent
PClose	0.588	>0.05	Excellent

Note: Hu and Bentler (1999, "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives") recommend combinations of measures. The researcher prefer a combination of CFI>0.95 and SRMR<0.08. To further solidify evidence, the researcher add the RMSEA < 0.06.

Plug-in tool for model fit measures: Gaskin, J. & Lim, J. (2016), "Model Fit Measures", AMOS Plugin. Gaskination's StatWiki.



Only the structural part of the model and only some of the 19 regression paths are depicted to avoid clutter.
Covariances among error terms are removed to avoid clutter.

Figure 9. 2nd *Structural equation model – disaggregated computation* (N = 577)

B. Discussions

1. Aggregated SEM Model – Context-based CMC Competence

a. The demographic profile of Filipino employees working in the outsourcing industry

This study found out that majority of the respondents working in the outsourcing industry were women. Most of them were from the 26 to 30 years old bracket and the average age is 29 years old.

The results of this study were not unique and agreed with the findings of the Philippines Statistics Authority in 2017 wherein it recorded that more than half of the outsourcing workforce in the Philippines were women and work full-time (PSA, 2017).

In terms of age, the results were also similar to a study conducted by the PSA (2017) which found out that the age composition of the outsourcing workforce in the Philippines was from 18 to 30 years old. In addition, the results were not far from the study conducted by Beerepoot & Hendriks (2013) and Montalbo (2016) wherein they found out that the majority of the employees in the Philippine outsourcing were between 18 to 30 years old. In both researches, the study showed that the Philippine Offshore Outsourcing is composed of the millennial workforce. Findings of this research establish the claim that offshore outsourcing organization in the Philippines is composed young professionals who are involved in high-skilled complexity of work operations, rank and file, and full-time employees (PSA, 2017; Beerepoot & Hendriks, 2013; Montalbo, 2016). Also, given that this study is composed of a millenial workforce, majority of the combined years of work experience of the respondents have 5 to 7 years.

Looking at the result of respondents' years of experience in using online collaborative communication tools for instant messaging, audio or video conferencing,

viewing and editing documents, application sharing, and co-browsing, the respondents also have 5 to 7 years of experience in utilizing online collaborative communication tools in their workplace.

In particular, a big majority of the respondents utilized Skype for Business in communicating and collaborating with their colleagues abroad. This was followed by respondents that utilized emerging online collaborative communication tools like Cisco Jabber and WebEx, Lync, and Microsoft Teams. These tools enabled the organization or employees to collaboratively analyze and interpret data solutions, as well as positively gauge workflow systems.

Findings of this study counter the claims of an article published by IEEE Computer Society entitled *"Trends in Collaboration Tools"* wherein it mentioned that Cisco Jabber and WebEx were the most commonly used online collaborative communication tools for synchronous online meeting facilities like team collaboration, webinars, training and customer support (Lanubile et al., 2010). Offshore organization in the Philippines today has offered not only Cisco Jabber and WebEx but different online communication tools that are accessible and user-friendly such as Skype for Business and Microsoft Teams. This means that organizations today have already maximized the use of various online collaborative communication tools shifting away from a feature-centric online communication tools towards an online communication tools that is intuitive, convenient, and purposeful (Mikogo, 2015).

Skype for Business offers functions of presence and group instant message, transfer files in IM, audio, and HD video calling to Skype for Business users, connectivity with anyone and on any device, group HD video calling, schedule meetings in outlook, record

audio and video in meetings and interoperability with video teleconferencing systems (Insight, n.d.).

This explains why Skype for Business emerged as the most commonly used platform in this study because of its easy-to-use functions. In addition, the majority of the users in an online collaboration setting utilized Skype for Business for audio and video conference regularly (Fell, 2015; Pillard and Burt, 2013). Other tools like Lync and Microsoft Teams introduced by Microsoft today were also evidently utilized by Filipino employees in their everyday work.

Lastly, the respondents were generally Business Analysts followed by Digital Marketing Analysts who provide data solutions to their clients and customers abroad. Those who work as Business Analyst and Digital Marketing Analyst were known to be highly skilled in the operations like Data Analytics, Sales and Marketing, Finance and Customer Relationship Management (CRM) activities and the most number of clients, customers, and business partners came from the United States of America and the United Kingdom. Results of this study agreed with the findings of Francisco & Parlade (2013) and PSA (2017). In both researches, it was expected that the contribution of KPO services would continue to grow especially in areas of Data Analytics, Sales and Marketing Analytics, and Customer Relationship Management (CRM) activities are now offered in the outsourcing organizations.

b. The relationship between the demographic profile of Filipino employees that use online collaborative communication tools and their CMC competence

This study sought to understand the influence of demographic variables in terms of the Filipino employees' age, general usage of technology, and work experience to their CMC competence. Studies on demographic profile such as age, general use of technology, and experience have implications in the context of CMC interaction (Bubas, 2004; Del Villar, 2010; Labucay, 2011; Jones, 2012; Xie, 2015). In addition, individual's age can be related to the use of technology as age reflects the influences of time within the user's CMC competence (Spitzberg, 2006).

Findings of this study counter the claims Bubas, 2004; Del Villar, 2010; Labucay, 2011; Jones, 2012; Xie, 2015. In the context of offshore outsourcing organization, the current study found no causal relationship between age and CMC competence, employees' years of online communication tools usage and CMC competence and no causal relationship between employees' years of work experience and CMC competence. Though all motivation, knowledge and skill acquisition must be acquired through some type of experience or exposure (Xie, 2015), in the case of Filipino employees working in the offshore outsourcing organization, it is relative that the age, general usage of technology and their combined years of work experience do not affect their CMC competence.

c. The relationship of contextual factors and Filipino employees' CMC competence

This study assessed how contextual factors affected Filipino employees' CMC competence in communicating and collaborating using online collaborative communication tools. The contextual factors focused at how Filipino employees increase their CMC competence to analyze and interpret data solutions (i.e. applying expertise and technology, writing & reporting, and analyzing) when utilizing online communication tools.

The current study found that there was a positive and significant causal relationship between analyzing and interpreting data solutions and Filipino employees' CMC competence.

The findings of this study support the claims of Krumm et al., (2016) that sought to identify contextual competencies for online collaboration by comparing two groups. They asked members of online and traditional teams to rate the importance of competencies organized along the great eight competency framework (Bartram, 2005). The results revealed that competencies related to "analyzing and interpreting" (i.e., applying expertise and technology, writing & reporting, and analyzing) were considered important in online forms of collaboration that was in online teams.

In relation to the current study, this means that Filipino employees in the offshore outsourcing who contribute value, importance, and capability in analyzing and interpreting data solutions to their clients and customers showed willingness, understanding, and better skills to integrate these competencies using online collaborative communication tools in their daily work.

This explains that Filipino employees were motivated to make a good impression, knowledgeable about the context of interaction they were involved with when they communicate and collaborate in providing data solutions using online collaborative communication tools. Also, this proved that Filipino employees were skilled at performing their motivation and knowledge in using online collaborative communication tools.

The proficiency of Filipino employees to provide data solutions in terms of *assessing risk, verifying identity, preventing fraud, complying with legislation, and supporting data in law enforcement* through applying expertise and technology, writing & reporting, and analyzing data solutions explains that they were motivated and knowledgeable, and skilled in communicating and collaborating using online collaborative communication tools.

Lastly, it explains that Filipino employees were capable to integrate their competencies online in providing data solutions, as well as, using online collaborative communication tools in communicating and collaborating with their foreign colleagues.

d. Relationship of Filipino employees' CMC competence and media selection in using online collaborative communication tools

CMC competence model explains that motivation represents the initial activating process of understanding and application (knowledge) which manifests through the skills that are applied to the selection of media. Motivation is better served by certain media features (i.e. online technology features) and knowledge of the most competent tool or technology is selected accordingly and subsequently implemented through the skills of

CMC. Therefore, this will determine how Filipino employees select online collaborative communication tools in terms of the medium of choice, media interaction and media efficacy in communicating using online collaborative communication tools.

This study sought to describe how Filipino employees' CMC competence affected their selection media in terms of their choice, interaction, and efficacy using online collaborative communication tools.

The current study found that there was a positive and significant causal relationship between Filipino employees' CMC competence to media selection.

Results of this study agree with the findings of Hwang (2011). He found out that the CMC competence in using computer-mediated technologies would be one of the important factors dictating the efficiency of computer-mediated communication. He added that media interaction and media efficacy were related to the user's efficient communication skills in a computer-mediated setting. Also, CMC interactant's who were motivated, knowledgeable, and skilled during mediated interactions can be better at conversations in using computer-mediated technologies (Hwang, 2011).

Findings of this research establish the claim that Filipino employees' media efficacy, choice, and interaction in online collaborative communication tools were supported in terms of their CMC competence. This means that media selection estimated not simply the Filipino employees' technological and procedural knowledge, but also the influence of their skills during mediated interactions. While the levels of media efficacy, media choice, and media interaction could be different with each individual and according to the communicative situation at hand, Filipino employees were able to apply

their CMC competence ability and proficiently perform higher media efficacy, interaction, and choice in communicating and collaborating online.

e. The relationship of Filipino employees' CMC competence and competency outcomes in using online collaborative communication tools

CMC competence predicted the impressions of aptitude and proficiency which could be typically tested by considering the competency outcomes of online communication and collaboration. This study sought to understand the relationship of Filipino employees' CMC competence and competency outcomes based on providing data solutions to colleagues abroad, clients and customers through online collaborative communication tools.

The current study found that there was a positive and significant causal relationship between Filipino employees' CMC competence to competency outcomes.

The result explained that the Filipino employees have higher CMC competence, having higher motivation to communicate and collaborate online, excellent skills and knowledge to utilize online collaborative communication tools to their full effect and they were translated to excellent competency outcomes in communicating and collaborating online.

Results of this study agree with the findings of Bakke (2010) that placed mobile communication within the framework and lens of communication competence. He found that motivation and knowledge stimulate CMC interactants' communicative skills as they perceive a competent communicator to be relaxed, emphatic, supportive, and able to change their communication practice depending on the interpersonal encounter.

Also, the result was supported by Hwang (2011) in relation to the use of mobile smartphones investigating the relationship of CMC competence through interpersonal digital media, mobile phone, SMS, and instant messenger. He found that the user's knowledge and proficiency in using interpersonal media would be one of the important factors dictating the efficiency of mediated communication. Also, CMC interactants who feel a higher competency level during mediated interactions can be better at conversations using interpersonal media. The relational maintenance skills of which people usually take advantage in a face-to-face environment can also be used to help effective mediated interactions (Hwang, 2011).

Findings of this research establish the claim that communication practices are not really altered through the introduction of online collaborative communication tools. When online collaborative communication tools were introduced, the take off point was it highlighted the attributes of technology like ease of use and usefulness. However, in the result of the study, it indicated that online collaborative communication tools did not matter and the aptitude, proficiency, and self-efficacy of Filipino employees came first because they perceived themselves as CMC competent. Technology then becomes neutral, since the millennial workforce, while gender did not matter, has a certain level of aptitude, proficiency, and level of competence which now transcends the selection media technology.

f. The relationship of Filipino employees' media selection and competency outcomes in using online collaborative communication tools.

Media selection creates competency outcomes that can be assessed on the basis of appropriateness, effectiveness, satisfaction, and productivity or efficiency of online collaborative communciation tools. The Filipino employees' media selection in terms of their choice, interaction, and efficacy determines the appropriateness, effectiveness, satisfaction, and productivity/efficiency. Thus, media selection influences CMC competency outcomes (Spitzberg, 2006).

This study sought to understand the relationship of Filipino employees' media selection and competency outcomes based on the context-based CMC competence in communicating and collaborating through online collaborative communication tools.

The current study found that there was a positive and significant causal relationship between Filipino employees' media selection (i.e. choice, interaction, and efficacy) and CMC competency outcomes.

This means as Filipino employees' rate their own CMC competence and media selection more favorably, their perceived notion of competency outcomes in using online collaborative communication tools increases, too.

In addition, a mediating effect occurs when (1) causal relationship between CMC competence & media selection is significant and (2) the causal relationship between media selection towards competence outcomes is significant.

The current study found out that media selection mediated the positive relationship between CMC competence and competency outcomes.

This means that Filipino employees with higher CMC competence were confident to utilize online collaborative communication tools based on their choice, interaction and efficacy during mediated interactions and consequently perceived better CMC competency outcomes in terms of its appropriateness, effectiveness, productivity, and satisfaction in utilizing online collaborative communication tools.

2. Disaggregated SEM Model – Context-based CMC Competence

The researcher re-examined the data and rerun the analyses by disaggregating the components of CMC competence and competency outcomes to explore other possible results.

a. The relationship between the demographic profile of Filipino employees and their CMC competence

While the result in the original hypothesis did not yield on the significant findings on the relationship of age, years of online communication tools use, and work experience to CMC competence, when the components of CMC competence were disagregated, the findings of this study support the claims of Spitzberg, Bubas, Del Villar, and Xie as the result indicated that there was a positive and significant causal relationship between employees' age and CMC skills – composure. This result means that the Filipino employees' age affect the ability to display confidence, mastery, and comfortableness as a CMC interactant when using online collaborative communication tools. While there was relatively little research directly relevant to the indices of composure in CMC interaction, this evidence, as explained by the causal relationship of age and CMC skills,

substantiates the influence of age to the components of CMC competence, specifically on the composure of the Filipino employees. Still, no significant causal relationship found on the relationship of years of online communication tools use, and work experience to CMC competence

Findings of this study counter the results of Del Villar (2010) as the study claims that in the context of online learning, Filipino students' general use and experience to computer technology may further increase the competence of the CMC interactant in using online communication tools. In the context of offshore outsourcing organization, the current study found no causal relationship between employees' years of online communication tools usage and CMC competence and no causal relationship between employees' years of work experience and CMC competence. Though all motivation, knowledge and skill acquisition must be acquired through some type of experience or exposure (Xie, 2015), in the case of Filipino employees working in the offshore outsourcing organization, it is relative that the general usage of technology and their combined years of work experience do not affect their CMC competence.

b. The relationship of contextual factors and Filipino employees' CMC motivation and CMC knowledge

This study assessed how contextual factors affect Filipino employees' CMC motivation and CMC knowledge in communicating and collaborating using online collaborative communication tools. The contextual factors focused at how Filipino employees increased their CMC motivation and CMC knowledge to analyze and interpret

data solutions (i.e. applying expertise and technology, writing & reporting, and analyzing) when utilizing online communication tools.

The current study found that there was a positive and significant causal relationship between analyzing and interpreting data solutions and Filipino employees' CMC motivation. Also, the study found out that there was a positive and significant causal relationship between analyzing and interpreting data solutions to Filipino employees' CMC knowledge.

The findings of this study support the claims of Krumm et al., (2016) that sought to identify contextual competencies for online collaboration by comparing two groups. They asked members of online and traditional teams to rate the importance of competencies organized along the great eight competency framework (Bartram, 2005). The results revealed that competencies related to "analyzing and interpreting" (i.e., applying expertise and technology, writing & reporting, and analyzing) were considered important in online forms of collaboration that was in online teams.

In relation to the current study, this means that Filipino employees in the offshore outsourcing who contribute value, importance, and capability in analyzing and interpreting data solutions to their clients and customers showed willingness and understanding to integrate these competencies using online collaborative communication tools in their daily work.

This explains that Filipino employees were motivated to make a good impression and knowledgeable about the context of interaction they were involved with when they communicate and collaborate on providing data solutions using online collaborative communication tools.

The proficiency of Filipino employees to provide data solutions in terms of *assessing risk, verifying identity, preventing fraud, complying with legislation, and supporting data in law enforcement* through applying expertise and technology, writing & reporting, and analyzing data solutions explains that they were motivated and knowledgeable in communicating and collaborating using online collaborative communication tools.

Lastly, it explains that Filipino employees were capable to integrate their competencies online in providing data solutions, as well as, using online collaborative communication tools in communicating and collaborating with their foreign colleagues.

c. The relationship of Filipino employees' CMC competence in using online collaborative communication tools in terms of their motivation, knowledge, and skills

This study sought to identify the relationship of Filipino employees' CMC competence in using online collaborative communication tools in terms of their motivation, knowledge, and skills, specifically, to understand the influence of individual's CMC motivation and knowledge to CMC skills during mediated interaction.

CMC skills (i.e. coordination, attentiveness, expressiveness, composure) are goal driven and intentional set off by motivation and knowledge whether factual, strategic, scripted, routine, or tacit for the achievement of goals according to the criteria of competence in CMC (Bubas, 2004). However, both CMC motivation and CMC knowledge can be insufficient if the CMC interactant lacked the skills to translate that motivation and knowledge into competent action.

The current study found that there was a positive and significant causal relationship between Filipino employees' CMC motivation to CMC skills coordination, attentiveness, and composure. However, there was no significant causal relationship between CMC motivation and expressiveness.

Also, the study found that there was a positive and significant causal relationship between Filipino employees' CMC knowledge to CMC skills coordination, attentiveness, and composure.

The results explained that the Filipino employees were skilled at performing their motivation and knowledge in using online collaborative communication tools in terms of their composure, coordination and attentiveness.

However, no significant causal relationship between CMC motivation to CMC skills expressiveness, and CMC knowledge to CMC skills expressiveness was found. It appeared that expressiveness, like filling the CMC interaction with emotion, expressing opinions or suggestions, articulating ideas or ending a topic during online dialogues that have referred as a skill of a competent CMC user was not significant in the context of online communication and collaboration.

Results of this study agree with the findings of Wrench & Punyanunt-Carter (2007) in looking at the relationship of motivation, knowledge, and skills. They examined the relationship of CMC motivation, CMC skill, and CMC presence and found that CMC motivation and CMC skill negatively correlated with each other. Furthermore, CMC motivation was not shown to relate to CMC presence, but CMC presence was shown to be impacted by CMC skill and increased skill in virtual environments likely enhances perceptions of presence in CMC.

d. Relationship of Filipino employees' CMC skills and media selection in using online collaborative communication tools

CMC competence model explains that motivation represents the initial activating process of understanding and application (knowledge) which manifests through the skills that are applied to the selection of media. Motivation is better served by certain media features (i.e. online technology features) and knowledge of the most competent tool or technology is selected accordingly and subsequently implemented through the skills of CMC. Therefore, this will determine how Filipino employees select online collaborative communication tools in terms of the medium of choice, media interaction and media efficacy in communicating using online collaborative communication tools.

This study sought to describe how Filipino employees' CMC skills affect their selection media in terms of their choice, interaction, and efficacy through using online collaborative communication tools.

The current study found that there was a positive and significant causal relationship between Filipino employees' CMC skills attentiveness to media selection, composure to media selection, and coordination to media selection.

Results of this study agree with the findings of Hwang (2011). He found out that the CMC skills in using computer-mediated technologies would be one of the important factors dictating the efficiency of computer-mediated communication. He added that media interaction and media efficacy were related to the user's efficient communication skills in a computer-mediated setting. Also, CMC interactants who were motivated and

knowledgeable during mediated interactions can be better at conversations in using computer-mediated technologies (Hwang, 2011).

Findings of this research establish the claim that Filipino employees' skillful use of online collaborative communication tools was supported in terms of their mediated behaviors (motivation) and cognition (knowledge). This means that media selection estimated not simply the Filipino employees' technological and procedural skills, but also the influence of their attentiveness, composure and coordination during mediated interactions. While the levels of media efficacy, media choice, and media interaction could be different with each individual and according to the communicative situation at hand, Filipino employees were able to apply their CMC skills ability and proficiently perform interactions in computer-mediated context.

However, in this current findings, the researcher found no significant causal relationship between CMC skill expressiveness and media selection. While the literature argues that CMC skills would be one of the important factors dictating the efficiency of computer-mediated communication, this research found that CMC skill expressiveness does not affect the media selection (i.e. choice, interaction, and efficacy) of Filipino employees. While the other literature claims that in computer-mediated communication, making optimal use of the media environment can be crucial to achieving efficiency in user's interactions or expression (Umphrey et al., 2008). Usually, due to a relative lack of nonverbal cues and restrictions in relation to computer-mediated setting, people cannot deliver their intended messages through an interpersonal medium as precisely as they would in face-to-face communication (Kruger et al., 2005).

While CMC interactants tend to interact less in expressiveness in a mediated situation, they can achieve better communication results within a mediated conversation as they exert communication skills to overcome the interactional circumstances where nonverbal cues as well as the clarity of intended message became reduced and has taken advantage of them (Hwang, 2011).

e. The relationship of Filipino employees' media selection and competency outcomes using online collaborative communication tools.

CMC motivation, knowledge, and skills predicted the impressions of competence which could be typically tested by considering the appropriateness, effectiveness, satisfaction, and productivity/efficiency of online communication and collaboration.

Moreover, media selection creates competency outcomes that can be assessed on the basis of appropriateness, effectiveness, satisfaction, and productivity or efficiency of online collaborative communciation tools. The Filipino employees' media selection in terms of their choice, interaction, and efficacy determines the appropriateness, effectiveness, satisfaction, and productivity/efficiency. Thus, media selection influences CMC competency outcomes (Spitzberg, 2006).

This study sought to understand the relationship of Filipino employees' media selection and competency outcomes based on the context-based CMC competence in communicating and collaborating through online collaborative communication tools.

The current study found that there was a positive and significant causal relationship between Filipino employees' media selection (i.e. choice, interaction, efficacy) and CMC competency outcomes, specifically, between media selection and productivity/efficiency,

media selection and satisfaction, media selection and effectiveness, and media selection and appropriateness.

This means as Filipino employees rate their own CMC competence and media selection more favorably, their perceived notion of appropriateness, effectiveness, satisfaction, and productivity/efficiency in using online collaborative communication tools increases, too.

In addition, a mediating effect occurs when (1) causal relationship between CMC skills & media selection is significant and (2) the causal relationship between media selection (the mediator variable) towards competence outcomes (i.e. appropriateness, effectiveness, satisfaction, and productivity/efficiency) is significant.

The current study found out that media selection mediated the positive relationship between CMC skills attentiveness, composure, and coordination to competency outcomes.

This means that Filipino employees with higher CMC skills in terms of attentiveness, composure and coordination were confident to utilize online collaborative communication tools based on their choice, interaction and efficacy during mediated interactions and consequently perceived better CMC competency outcomes in terms of its effectiveness, productivity, and satisfaction in utilizing online collaborative communication tools.

Above all, the insights that were derived from this study underscored the importance of CMC competence and other factors in evaluating the competency outcomes of online collaborative communication tools that provide criteria for competent interaction. These results proved that Filipino employees were capable and competent to

provide higher value-driven services and insights to foreign businesses that could assist them in their strategic decision-making process, given that the context is computer-mediated.

CHAPTER VI. SUMMARY AND CONCLUSION

This study sought to know relationship between the context-based CMC competence and its competency outcomes towards the usage of online collaborative communication tools in offshore outsourcing organization. Using the CMC competence theory developed by Spitzberg, this research looked at the causal relationships of the contextual factors, CMC competence, and media selection in terms of choice, interaction and efficacy, and the competency outcomes of Filipino employees who use online collaborative communication tools.

A. Summary

Using structural equation modeling (SEM), the study was able to address the six objectives of the study. The results were summarized below.

1. The demographic profile of Filipino employees working in the outsourcing industry

Majority of the respondents were females and who belonged to the millennial workforce aged 26 to 30 years old. The mean age of the respondents was 29 years old. For combined years of work experience, respondents have 5 to 7 years of work experience.

Looking at the respondents' years of experience in using online collaborative communication tools for instant messaging, audio or video conferencing, viewing and editing documents, application sharing, and co-browsing, most of the respondents also have five to seven years of experience in utilizing online collaborative communication

tools in the workplace. In particular, a big majority of the respondents utilized the platforms Skype for Business and Cisco Jabber WebEx in communicating and collaborating with their colleagues abroad. Finally, most of the respondents were business analysts followed by digital marketing analysts who provide data solutions to their clients and customers abroad.

2. The relationship between the demographic profile of Filipino employees and their CMC competence

The results of this study found out that Filipino employees' age, years of online collaborative communication usage, and work experience have no effect on their CMC competence.

However, when the CMC competence was disaggregated among the variables observed for demographic profile of Filipino employees working in offshore outsourcing organization, the results found out that age significantly affected the CMC skills composure of Filipino employees in a computer-mediated context. This result indicated that Filipino employees' age affected their ability to display confidence, mastery, and comfortableness as a CMC interactant when using online collaborative communication tools. This evidence explained by the causal relationship of age and CMC skills composure substantiates the influence of Filipino employees' age to the components of CMC competence, particularly on CMC skills.

3. The relationship of contextual factors analyzing & interpreting data solutions and Filipino employees CMC competence

The SEM result indicated that contextual factors analyzing and interpreting have a significant relationship with Filipino employees' CMC competence. Filipino employees were motivated to make a good impression, knowledgeable about the context of interaction they were involved with when they communicated and collaborated in providing data solutions using online collaborative communication tools. Also, this proved that Filipino employees were skilled at performing their motivation and knowledge in using online collaborative communication tools. Also, it explains that Filipino employees were capable to integrate their competencies online in providing data solutions, as well as, using online collaborative communication tools in communicating and collaborating with their foreign colleagues.

When the component of CMC competence was disaggregated (i.e. motivation, knowledge, skills), SEM result indicated that contextual factors analyzing and interpreting have a significant relationship with Filipino employees' CMC motivation & CMC knowledge. This showed that Filipino employees in the offshore outsourcing displayed willingness and understanding to integrate online collaborative communication tools in their daily work. The ability to integrate non-mediated skills in a mediated setting means that Filipino employees could communicate and collaborate online with their colleagues abroad, as well as, could get motivated to make a good impression and be knowledgeable about the context and interaction.

4. The relationship of CMC competence and media selection

The SEM result indicated that there was a significant relationship between Filipino employees' CMC competence and media selection. This highlighted that Filipino employees' media efficacy, choice, and interaction in online collaborative communication tools were supported in terms of their CMC competence. Their media selection estimated not simply the Filipino employees' technological and procedural knowledge, but also the influence of their skills during mediated interactions. Filipino employees were able to apply their high level CMC competence and proficiently perform higher media efficacy, interaction, and choice in communicating and collaborating online.

When the component of CMC competence, specifically, the CMC skills (i.e. attentiveness, expressiveness, composure, coordination) was disaggregated, the SEM result indicated that there was a significant relationship between Filipino employee's CMC skills attentiveness, composure, expressiveness and coordination to media selection.

This highlighted that Filipino employees' skillful use of online collaborative communication tools mediated in terms of their behaviors and cognition. Media selection estimated not only Filipino employees' technological skills but also the effects of the CMC skills during mediated interactions since individuals' cognitive reactions toward manipulating the functions of an interpersonal medium. Levels of media efficacy, media choice, and media interaction could differ with each individual and according to the communicative situation. While the results proved that Filipino employees tend to express less in a mediated situation, they could achieve better communication results

within a mediated conversation as they exerted communication skills to overcome the interactional circumstances where nonverbal cues as well as the clarity of intended message become reduced and could be taken advantage of them.

5. The relationship of Filipino employees' CMC competence and competency outcomes in using online collaborative communication tools

The SEM result indicated that there was a positive and significant causal relationship between Filipino employees' CMC competence to competency outcomes. This indicated that the Filipino employees have higher CMC competence, having higher motivation to communicate and collaborate online, excellent skills and knowledge to utilize online collaborative communication tools to their full effect and they were translated to excellent competency outcomes in communicating and collaborating online.

Therefore, this research establishes the claim that communication practices are not really altered through the introduction of online collaborative communication tools. While studies found out that computer-mediated communication creates lags in information exchange, a greater occurrence of misunderstandings, reduction in information seeking attempts, and more incoherent messages (Andres, 2012), the result of the study indicated that online collaborative communication tools did not matter at all and the aptitude, proficiency, and self-efficacy of Filipino employees came first because they perceived themselves as CMC competent. Technology through online collaborative communication tools then becomes neutral since the millennial workforce, notwithstanding gender, has a certain level of aptitude, proficiency, and level of competence which now transcends the selection computer-mediated technology.

6. The relationship between media selection and competency outcomes

Finally, SEM result indicated that there was a significant relationship between Filipino employees' media selection and competency outcomes. To be explicit, as Filipino employees rate their own CMC competence and media selection more favorably, their perceived notion of competency outcomes in using online collaborative communication tools increases, too.

In addition, Filipino employees with higher CMC competence were confident to utilize online collaborative communication tools based on their choice, interaction and efficacy during mediated interactions and consequently perceived better CMC competency outcomes in utilizing online collaborative communication tools.

When competency outcomes were disaggregated, the SEM result still indicated a significant relationship between Filipino employees' media selection and CMC competence outcomes, specifically, to their productivity/efficiency, satisfaction, effectiveness, and appropriateness in using online collaborative communication tools. These results explained that the Filipino employees' media selection generated a perception of effectiveness, appropriateness, satisfaction, and productivity/efficiency in providing data solutions using online collaborative communication tools. As Filipino employees rate their own CMC competence and media selection more favorably, the appropriateness, effectiveness, satisfaction, and productivity/efficiency in providing data solutions using online collaborative communication tools increase, too.

B. Conclusion

The findings of the current study offered two models to better understand the relationship of a context-based CMC competence and its outcomes in the use of online collaborative communication tools.

Given the dynamics and complexity of technology today, this study indicated that communication practices were not really altered through the introduction of online collaborative communication tools. While studies argued that computer-mediated communication technologies create lags in information exchange, a greater occurrence of misunderstandings, reduction in information seeking attempts, and more incoherent messages (Andres, 2012), the results of the study indicated that the use of online collaborative communication tools enabled organizations to connect and engage people with information anywhere, anytime, and on any device. When using this online collaborative communication technology, Filipino employees' CMC competence, aptitude, proficiency, and self-efficacy manifest first because they perceived themselves as CMC competent. Technology through online collaborative communication tools then becomes neutral since the millennial workforce, notwithstanding gender, has a certain level of aptitude, proficiency, and level of competence which now transcends the dynamics and complexity computer-mediated technologies.

Moreover, during mediated communication, the competency of Filipino employees to provide data solutions through applying expertise and technology, writing & reporting, and analyzing data explains that they were motivated and knowledgeable in communicating and collaborating using online collaborative communication tools. This explains that Filipino employees were motivated to make a good impression and

knowledgeable about the context of interaction they were involved in when they communicated and collaborated with their foreign colleagues. Also, the results explained that the Filipino employees' were skilled at demonstrating their motivation and knowledge in using online collaborative communication tools.

The utilization of online collaborative communication tools in terms of CMC competence is related to competent conversations in selecting and utilizing of online communication platforms such as Skype for Business, Cisco Jabber Webex, Microsoft Teams, Lync, and others. Also, the positive relationship between media selection (i.e. choice, interaction, and efficacy) and competency outcomes in terms of its appropriateness, effectiveness, satisfaction, and productivity/efficiency in using online collaborative communication tools connote that Filipino employees who proficiently use these tools have a better chance of commanding competent mediated interactions in communicating and collaborating with their foreign colleagues.

The implication of this study in the present work environment indicated that Filipino employees were able to deliver competent results as they perceived their CMC competence favorably in utilizing online collaborative communication tools and thus, increasing the competency outcomes of online collaborative communication tools in providing data solutions, communicating and collaborating with their colleagues abroad.

CHAPTER VII. IMPLICATIONS AND RECOMMENDATIONS

This study gives attention to the role of online collaborative communication tools in the formation and development of Filipino employees' CMC competence based on the interaction medium in the offshore outsourcing organization. The results from the data gathering were further investigated according to the theoretical, methodological, and practical applications. This chapter provides a recommendation to address more in-depth examination of the phenomenon.

A. Theoretical Issues

Across the study of communication competence, several studies position communication competence either as the dependent or criterion variable or as the independent or predictor variable of competency outcomes.

Improving the outcome focus of communication competence research, the current study focused on contextualizing the theoretical concepts of communication competence that applies in the context of offshore outsourcing organization that utilizes online collaborative communication tools.

Given the constraints that are imposed by mediated context, the study makes sense in generating specific contextual operationalization of communication competence. The current study focused on the functions of contextual factors as the independent or predictor variable and how it applies to the user's motivation, knowledge, and skills, media selection and overall competency outcomes in the context is computer-mediated communication. The contextual factor, motivation, knowledge, skills, media selection,

and outcomes served as metaphorical vessels into which the endeavor of this study has been functionally disclosed.

To understand the relationship between context-based CMC competence, media selection, and competency outcomes, structural equation modeling (SEM) was done based on the theoretical assumptions of the theory that supported the design of CMC competence.

The results of this study showed that context-based CMC competence influences competency outcomes. The users' ***"self-rated/self-assessed"*** perception of being competent with the utilization of online collaborative communication tools is positively associated with competent conversation using online collaborative platforms. Also, the result indicated that the mediating effects of media selection occurred in the relationship between CMC competence and competency outcomes. The positive result of competence outcomes connotes that user who proficiently uses online communication tools has a better chance of commanding skillful mediated interactions with other interactants abroad.

The implication of the result of the context-based CMC competence and its outcomes foresees that when using these online communication technologies, the aptitude, the proficiency, and the self-efficacy of the Filipino employees came first because they perceived themselves as CMC competent. Technology through online collaborative communication tools then becomes neutral since the Filipino employees have a certain level of aptitude, proficiency, and level of competence which now exceeds the selection computer-mediated technology.

It is recommended to further look for a best practice range in utilizing online collaborative communication tools. By using the specific context-based CMC competence model applied in the offshore outsourcing organization as a basis and adding outcome-based utilizing updated and innovative online collaborative communication tools, a research design model emerges. Future research may utilize these models (see Appendix I and J) to make comparisons within and across contexts that will enhance CMC competence research.

B. Methodological Issues

In terms of research design, a positivist approach was used to study the relationship of the contextual factors, CMC competence, and media selection in terms of choice, interaction and efficacy towards the competency outcomes of Filipino employees who used online collaborative communication tools. The unit of analysis focuses on specific offshore outsourcing company located in Metro Manila and randomly selected.

The use of structural equation modeling allowed more complex positioning of CMC competence as 1) a predictor of skills, media choice, interaction, and efficacy, 2) a mediating variable between the contextual factors and CMC skills, and 3) predictor of competence outcomes. Widely debated as to its predictive ability, more recent evaluations of SEM view it as a causal-inference model (Pearl, 2012). Therefore, when using CMC competence theory, SEM is an appropriate statistical tool for determining the causal effects of context-based CMC competence towards competency outcomes.

Measuring contextual factors, message selection, and outcomes proved to be a challenge in the operationalization. In order to address the challenges, the research

focused only on a specific context that was necessary and valuable to test the CMC competence of the interactants. While the research recognized that there were other context or functions that could be tested, in this specific exercise, the research focused on the user's non-mediated skills derived from the conceptualized eight great competence model "analyzing and interpreting" by Bartram (2005) as applied in providing data solutions. In terms of conceptualizing the message selection, the measures for this concept encountered issues in the exploratory factor analysis as the scores cross-load to other factor loadings on top of its poor reliability results. While this concept provided insightful result in the descriptive statistics, the proponent decided to exclude it during the CFA and SEM to avoid discrepancies in the results. Future studies may employ sufficient measures for message selection aligned with the context of the study to fully utilize the full CMC competence model.

For future studies, these issues could serve as a guide to improve the context-based CMC competence and its influence on competence outcomes. Future researchers may use the result of the study to explore another context of CMC interaction that utilizes online collaborative communication tools (i.e. government agencies, medical field, non-government organization). Also, the current study focused only on self-evaluation of the users' CMC competence. Other studies may explore in evaluating the peer's CMC competence from the other user's viewpoint and also at the relational level (i.e. group) in the form of relationship strength and capability to work together within the same or another context.

Furthermore, future scholars may consider using qualitative design in outcomes research. Use of qualitative methods is advocated when complex phenomena (i.e. culture

orientation of Filipino, American and others) are difficult to measure when insight is needed for causal mechanism and special populations are the target. In addition, the future researchers might consider doing a discourse analysis to study CMC competence and its outcomes. This methodological approach does not clearly specify outcomes in the research design. However, discourse analysis, as well as interaction analysis, can provide a micro-level methodology to explore what new outcomes could emerge from communicatively competent practices.

C. Practical Issues

The results of this study identified key areas of evaluating the Filipino employees' CMC competence working in the outsourcing industry. These findings were able to evaluate and identify ways in improving communication and collaboration with their colleagues abroad given that the context is mediated.

Also, this proves that Filipino employees are capable of providing excellent solution and service to their clients and customers globally as they show willingness and understanding to integrate online collaborative communication tools in their daily work.

In addition, while Filipino employees tend to express occasionally in a mediated situation, they can achieve better communication results within a mediated conversation as they exert communication skills to overcome the interactional circumstances where nonverbal cues as well as the clarity of intended message become reduced and could be taken advantage of them. In connection to expressiveness in mediated context, training and development in organizations may offer programs or training that will help Filipino employees convey their thoughts or feelings professionally.

For students and researchers in the field of communication, the findings and insights of this study will aid them to further explore the possible context of CMC competence that is applicable in other sectors like manufacturing, hospitals, academe and others that utilize online collaborative communication tools in the future.

For business and organizations, as the International Business Process Association in the Philippines (IBPAP) expects that the contribution of KPO services will continue to grow, the insights of these study showed that Filipinos were prepared and equipped to provide high complexity and judgment based work processes globally using online collaborative communication tools. It is the hope of the proponent to grow the literature of Filipino CMC competence by exploring various contexts and functions such as in the field of information technology, banking, healthcare, media, engineering, and creative services.

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May 28, 2019

EDITOR'S CERTIFICATION

To whom it may concern,

This is to certify that this thesis titled, *"Borderless Workplace: Evaluating Filipino CMC Competence and its Outcomes in the use of Online Collaborative Communication Tools"* prepared and submitted by Darille Dayne Roman Cabrera in partial fulfillment for the Master of Arts in Communication has been reviewed and edited by the undersigned.

Mr. Jerry Donato, MDC
Sub-Editor
The Philippine **STAR**

Appendix A
Factor Structure for Exploratory Factor Analysis
(Aggregated Computation)

Pattern Matrix				
Cronbach's Alpha	**0.904**	**0.862**	**0.941**	**0.963**
Contexual Factors_1		.638		
Contexual Factors_3		.610		
Contexual Factors_4		.718		
Contexual Factors_6		.745		
Contexual Factors_7		.833		
Contexual Factors_8		.623		
CMCC_Q11	.799			
CMCC_Q12	.805			
CMCC_Q17	.583			
CMCC_Q20	.701			
CMCC_Q22	.734			
CMCC_Q24	.619			
CMCC_Q27	.422			
CMCC_Q30	.770			
CMCC_Q32	.708			
MEDIASE_Q33				.823
MEDIASE_Q34				.904
MEDIASE_Q35				.826
CO_Q50			.576	
CO_Q57			.920	
CO_Q58			.902	
CO_Q59			.901	
CO_Q56			.790	

Extraction Method: Maximum Likelihood
Rotation Method: Promax with Kaiser Normalization
Rotation converged in 7 iterations.

Appendix B Factor Structure for EFA **(Disaggregated Computation)**

	Pattern Matrix											
Cronbach's Alpha	**.862**	**.867**	**.918**	**.913**	**.763**	**.887**	**.947**	**.753**	**.894**	**.853**	**.860**	**.955**
AI_Q1	.659											
AI_Q3	.630											
AI_Q4	.707											
AI_Q6	.730											
AI_Q7	.795											
AI_Q8	.584											
MO_Q9				.773								
MO_Q11				.954								
MO_Q12				.952								
KN_Q14											.608	
KN_Q16											.897	
KN_Q17											.613	
COO_Q19										.462		
COO_Q20										1.003		
ATT_Q22									.447			
ATT_Q23									1.003			
ATT_Q24									.711			
EXP_Q26								.664				
EXP_Q27								.936				
COM_Q29		1.114										
COM_Q30		.576										
COM_Q32		.620										
MEDIASE_Q33			.843									
MEDIASE_Q34			.916									
MEDIASE_Q35			.798									
MEDIASE_Q37			.500									
OUT_APP_Q43						.702						
OUT_APP_Q44						.813						
OUT_APP_Q45						.988						
OUT_EFF_Q50					.779							
OUT_EFF_Q51					.850							
OUT_EFF_Q52					.741							
OUT_STF_Q54												.540
OUT_STF_Q55												.758
OUT_PRO_Q57							.784					
OUT_PRO_Q58							.861					
OUT_PRO_Q59							.762					

Extraction Method: Maximum Likelihood
Rotation Method: Promax with Kaiser Normalization
Rotation converged in 13 iterations.

Appendix C
Factor Correlation Matrix for Exploratory Factor Analysis
(Aggregated Computation)

Factor Correlation Matrix

Factor	Contextual Factors	CMC Competence	Media Selection	Competency Outcomes
Contextual Factors	1.000	.693	.745	.681
CMC Competence	.693	1.000	.648	.691
Media Selection	.745	.648	1.000	.629
Competency Outcomes	.681	.691	.629	1.000

Extraction Method: Maximum Likelihood
Rotation Method: Promax with Kaiser Normalization

Note: Correlations between factors should not exceed 0.7. A correlation greater than 0.7 indicated a majority of shared variance.

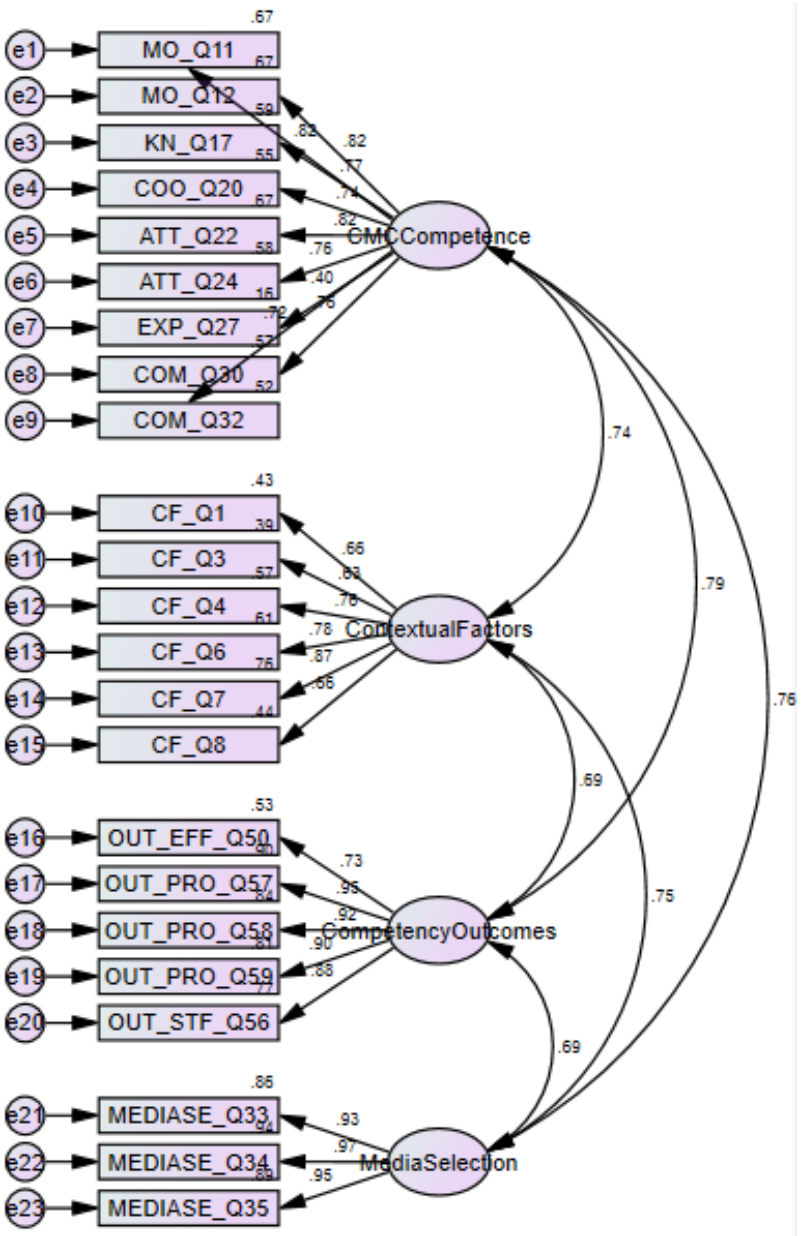
Appendix D
Factor Correlation Matrix for Exploratory Factor Analysis
(Disaggregated Computation)

Factor	**A&I**	**MOT**	**KNO**	**COO**	**ATT**	**EXP**	**COM**	**MDS**	**APP**	**EFF**	**STF**	**PRO**
A&I	1.000	.552	.699	.666	.603	.649	.613	.366	.627	.506	.663	.482
MOT	.552	1.000	.608	.719	.699	.576	.627	.413	.713	.708	.756	.486
KNO	.699	.608	1.000	.638	.560	.688	.629	.393	.694	.503	.721	.513
COO	.666	.719	.638	1.000	.662	.644	.647	.427	.755	.661	.709	.642
ATT	.603	.699	.560	.662	1.000	.647	.749	.331	.645	.645	.645	.596
EXP	.649	.576	.688	.644	.647	1.000	.702	.348	.685	.498	.672	.615
COM	.613	.627	.629	.647	.749	.702	1.000	.372	.609	.550	.669	.658
MDS	.366	.413	.393	.427	.331	.348	.372	1.000	.491	.330	.385	.376
APP	.627	.713	.694	.755	.645	.685	.609	.491	1.000	.665	.737	.578
EFF	.506	.708	.503	.661	.645	.498	.550	.330	.665	1.000	.652	.460
STF	.663	.756	.721	.709	.645	.672	.669	.385	.737	.652	1.000	.451
PRO	.482	.486	.513	.642	.596	.615	.658	.376	.578	.460	.451	1.000

Extraction Method: Maximum Likelihood
Rotation Method: Promax with Kaiser Normalization

Note: Correlations between factors should not exceed 0.7. A correlation greater than 0.7 indicated a majority of shared variance. In this table, it was observed that the motivation factor was highly correlated with all factors.

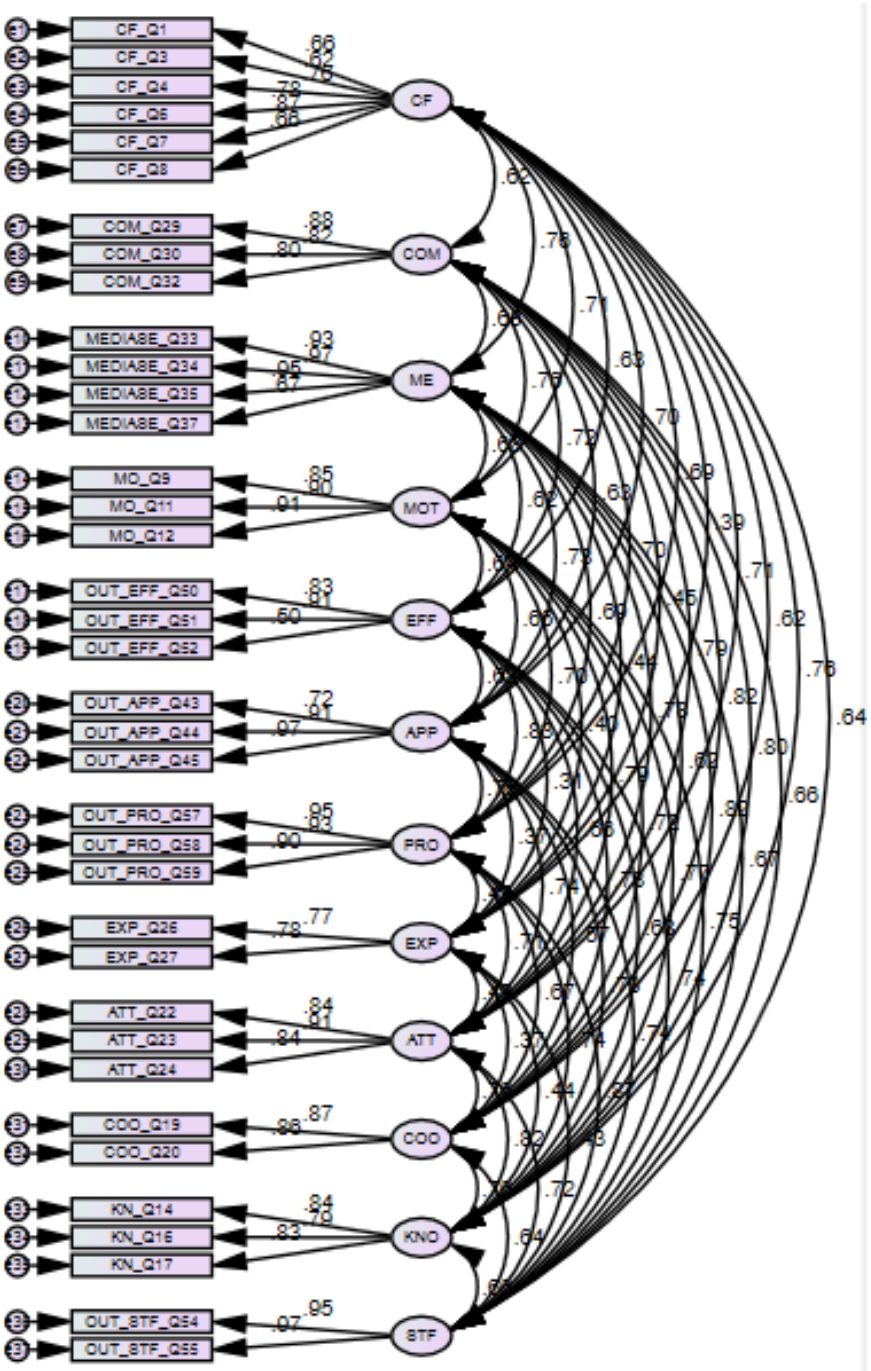
Appendix E
Confirmatory Factor Analysis
(Aggregated Computation)



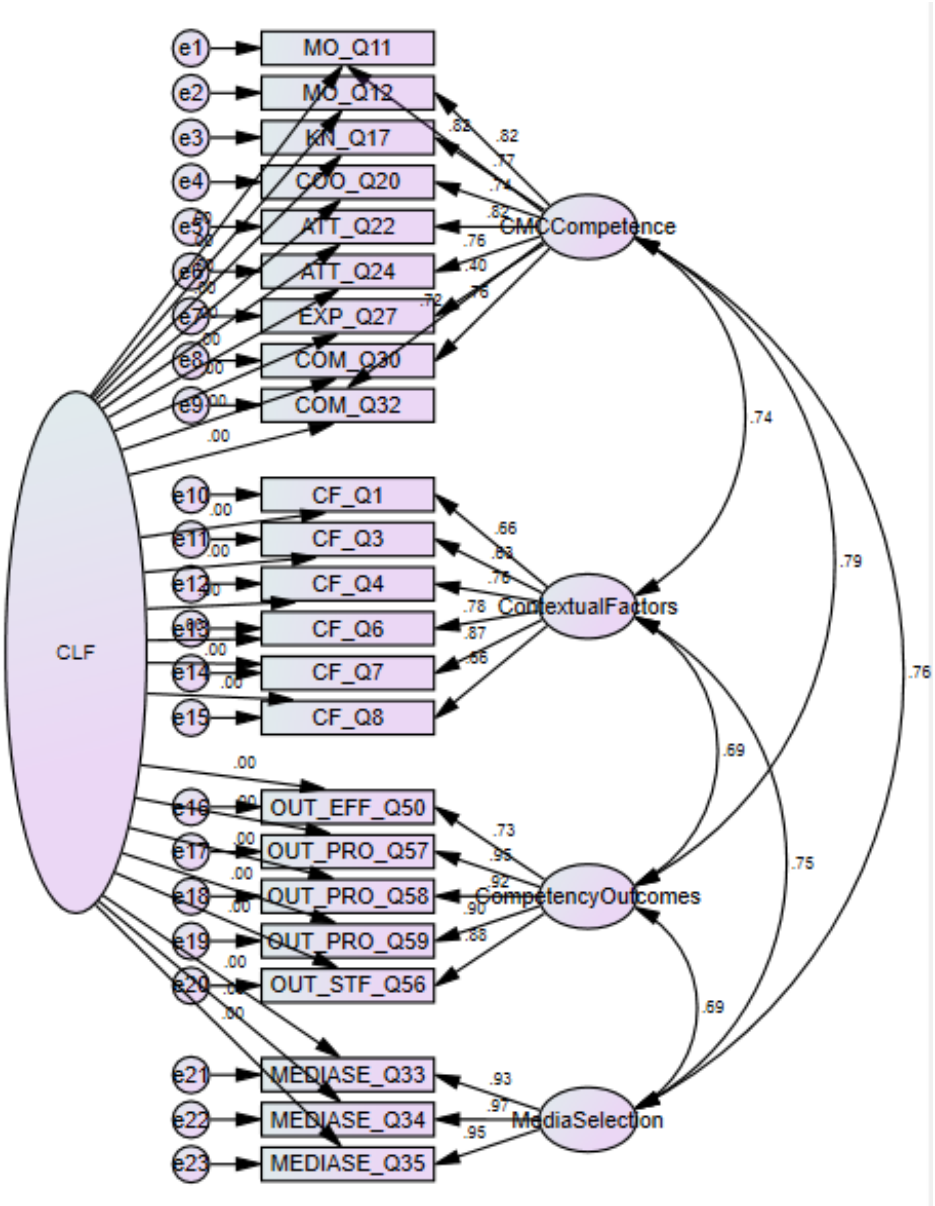
Appendix F

Confirmatory Factor Analysis

(Disaggregated Computation)

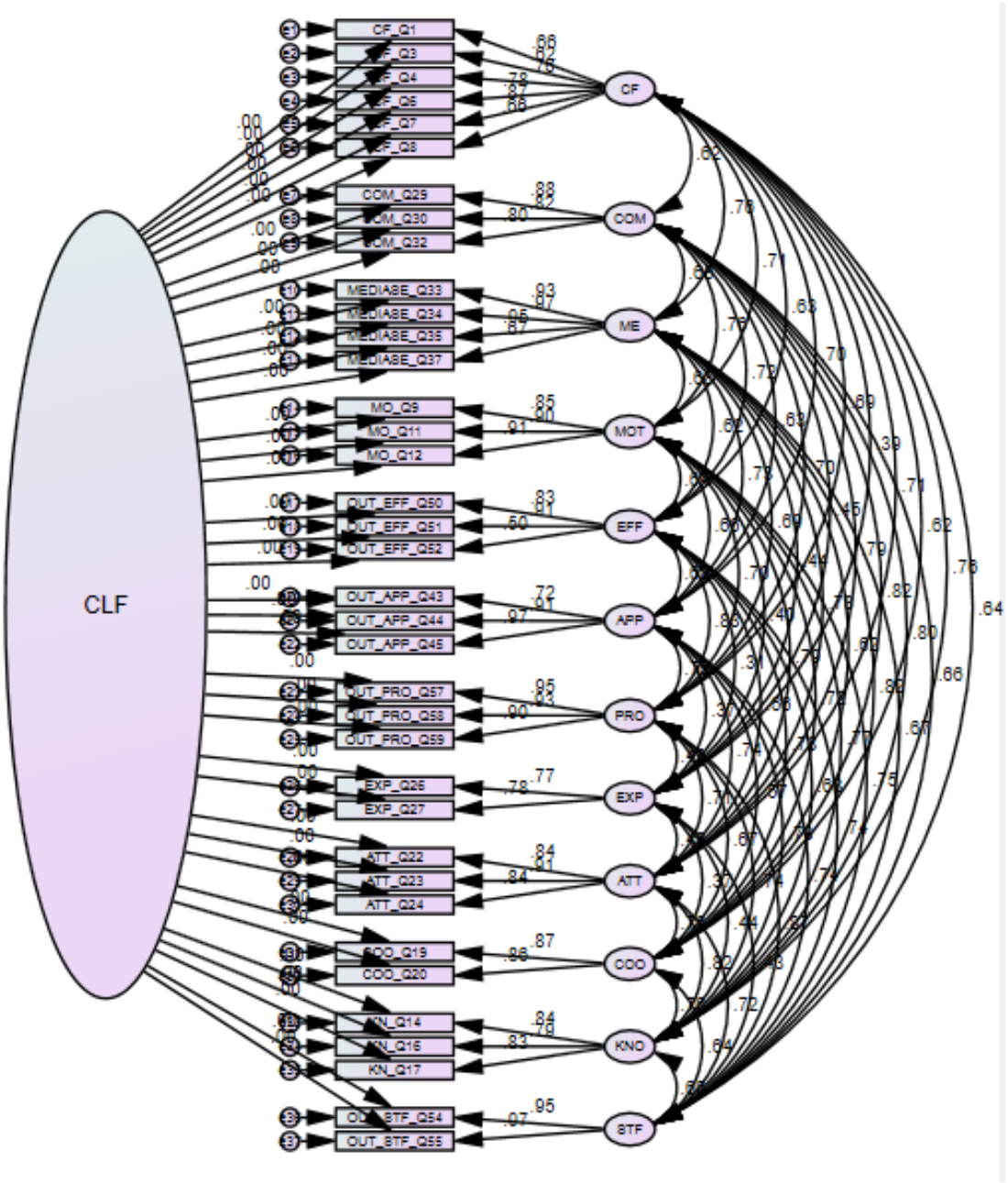


Appendix G
Common Method Bias (Specific Bias)
(Aggregated Computation)



Note: This model is called common method bias corrected so when the researcher impute factor scores with this by creating new single variable to represent latent factors in the model, these new variables will account for the shared variance explained by the common latent factors.
Plug-in tool for common method bias – specific bias test: Gaskin, J. & Lim, J. (2017), "CFA Tool", AMOS Plugin. Gaskination's StatWiki.

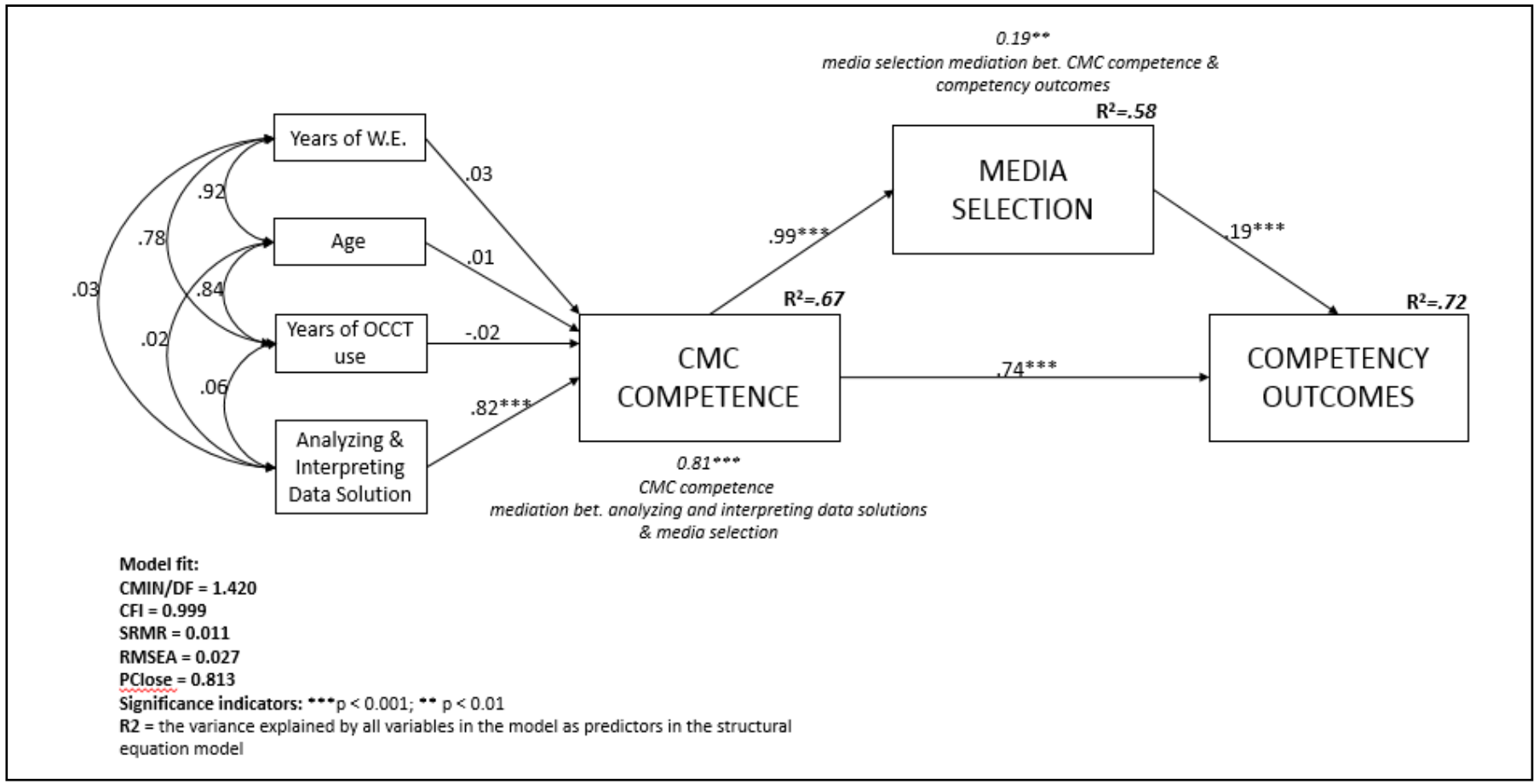
Appendix H
Common Method Bias (Specific Bias)
(Disaggregated Computation)



Note: This model is called common method bias corrected so when the researcher impute factor scores with this by creating new single variable to represent latent factors in the model, these new variables will account for the shared variance explained by the common latent factors.

Plug-in tool for common method bias – specific bias test: Gaskin, J. & Lim, J. (2017), "CFA Tool", AMOS Plugin. Gaskination's StatWiki.

Appendix I
Structural Equation Modelling of the context-based CMC competence
(Aggregated Computation)

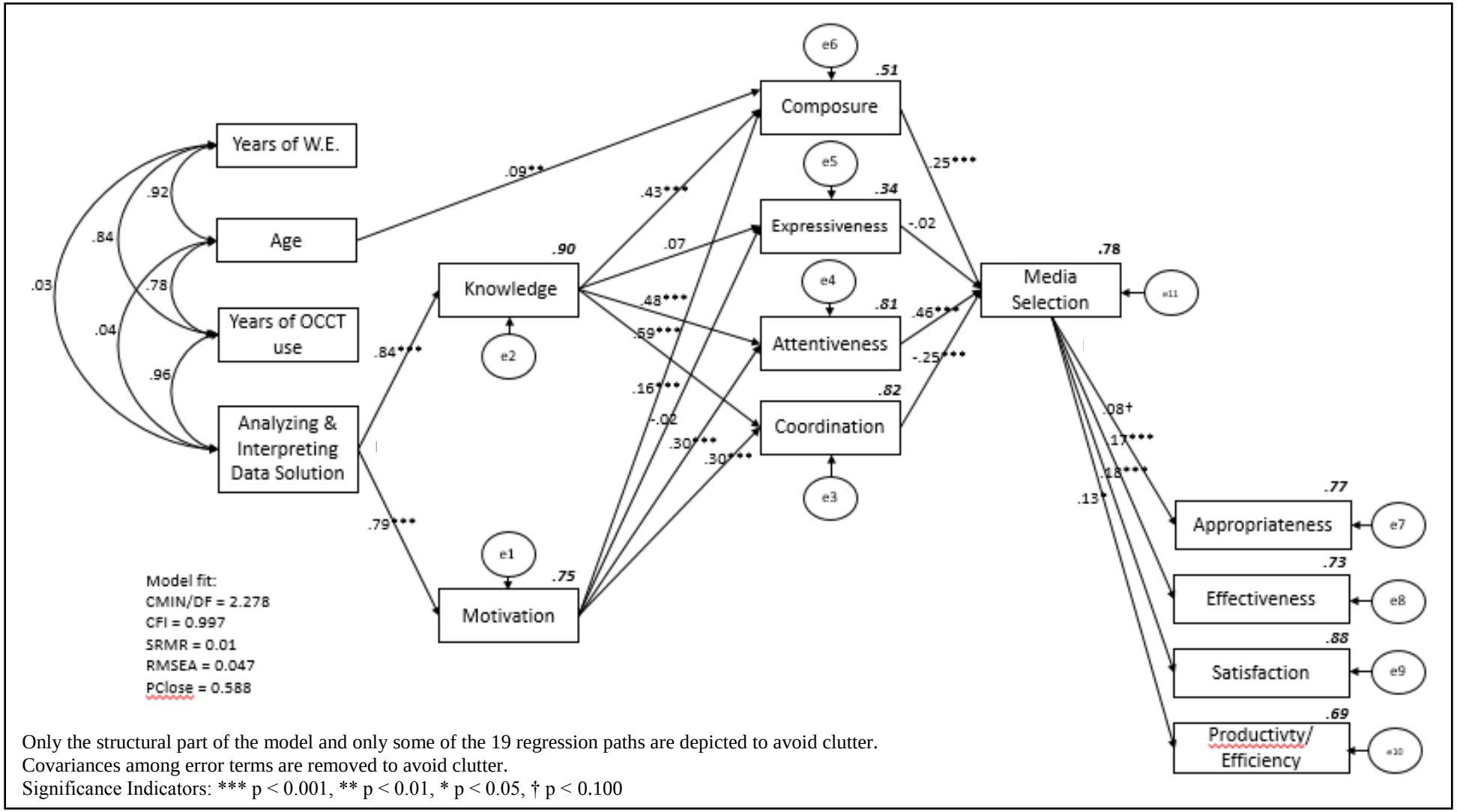


Only the structural part of the model and only some of the 7 regression paths are depicted to avoid clutter.
Covariances among error terms are removed to avoid clutter

Appendix J

Structural Equation Modelling of the context-based CMC competence

(Disaggregated Computation)



Only the structural part of the model and only some of the 19 regression paths are depicted to avoid clutter.
Covariances among error terms are removed to avoid clutter.
Significance Indicators: *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.100

Appendix K
Instrument

Good day respondents!

I'm Darille Dayne Cabrera, a graduate student of the MA Communication program at the University of the Philippines Diliman. I am currently doing a thesis titled "Borderless Workplace: Evaluating Filipino CMC competence in the use of online collaborative communication tool." This research aims to determine how Filipino employees use online collaborative communication tools in an offshore outsourcing seeting when communicating with their colleagues abroad.

In the context of this study, online collaborative communication tools may include Jabber/WebEx, Microsoft Teams, Office 365, Skype for Business which support video, audio, screen sharing, group calling, document sharing, recording, and instant messaging (email and phones not included).

You have been randomly selected to answer this survey based on your use of online communication tools in your daily work. Please fill in required fields such as your age, gender, occupation, and years of work experience. This information shall be kept with utmost confidentiality and will only be used solely for the purpose of this academic research.

This survey will take 7 - 10 minutes to complete.

For inquiries or clarifications, please contact me at darillecabrera@gmail.com.

Thank you very much for your participation!

Part 1. Demographic Profile of Respondent

Gender: [1] Male ___ [2] Female ___ **Age:** ___
Years of work experience: ___ **Years of experience in using online tools:** ___
Occupation: _____

I. Please check any collaboration tool/s you are using in your organization:

☐ Adobe Connect	☐ Google Hangouts	☐ Go to Meeting	☐ Mural
☐ Circuit	☐ Help Scout	☐ Microsoft Teams	☐ Slack
☐ Cisco Jabber/WebEx	☐ IBM Sametime	☐ ScrumGenius	☐ Yo
☐ Convo	☐ Lync	☐ Skype for Business	
☐ Google chat	☐ Microsoft Stream	☐ Others: _____	

Part II. Please encircle your answers in the degree to which each statement regarding your use of various online collaborative communication tools using the following scale:

7 - Strongly Agree (SA), **6** - Agree (A), **5** - Slightly Agree (SLA), **4** - Undecided (U), **3** - Slightly Disagree (SDA), **2** - Disagree (D), **1** - Strongly Disagree (SDA)

CONTEXTUAL FACTORS (Analyzing and interpreting)	SA	A	SA	U	SDA	DA	SDA
In providing data solutions to our clients and customers abroad:							
1. I use online collaborative communication tools in my daily work to accomplish my tasks.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
2. I rarely go without communicating via online collaborative communication tools in collaborating with my colleagues.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
3. I analyze data effectively.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
4. I use online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
5. I communicate more effectively through writing.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
6. I focus on solving problems based on their need.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
7. I have learned to coordinate tasks with others.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
8. I finish tasks with the help of my colleagues.	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Part III. CMC Competence

Motivation	SA	A	SA	U	SDA	DA	SDA
9. I enjoy communicating and collaborating while using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
10. I am nervous about communicating with others via online collaborative communication tools. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
11. I am very motivated to communicate with others via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
12. I look forward to communicating and collaborating with my colleagues using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
13. Communicating via online collaborative communication tools makes me anxious. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Knowledge	SA	A	SA	U	SDA	DA	SDA
14. I am knowledgeable on using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
15. I tend to lose ideas when communicating via online collaborative communication tools. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
16. I am familiar with how to communicate via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**

17. I know how to phrase ideas in communicating via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Skills	**SA**	**A**	**SA**	**U**	**SDA**	**DA**	**SDA**
Coordination							
18. I find it difficult to know when and how to end a topic during online dialogues. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
19. I manage the discussion between me and my colleagues in online interaction skillfully.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
20. I'm skilled at the timing my responses to my colleagues inquiries when via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
21. I'm skilled at prioritizing my messages via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Attentiveness							
22. I always ask question related to the topic when communicating via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
23. I show concern and interest for the person I'm conversing with via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
24. I can show compassion and empathy through the way I communicate via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Expressiveness							
25. I'm not articulate in presenting my ideas when using online collaborative communication tools. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
26. I use expressive symbols in my messages (e.g. smiles) via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
27. I tend to be humorous in my messages via online collaborative communication messages.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
28. I am not expressive in my conversation via online collaborative communication messages. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Composure							
29. I'm confident with the way I write/speak when using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
30. I'm proactive in my messages via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
31. I struggle at expressing my opinions or suggestions when using online collaborative communication tools. **[R]**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
32. I'm calm and composed during discussions when using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Part IV. Media and Message Selection

Media Selection	SA	A	SA	U	SDA	DA	SDA
33. I am confident I will learn how to use any new online collaborative communication tools.	7	6	5	4	3	2	1
34. I feel capable in using online collaborative communication tools.	7	6	5	4	3	2	1
35. I can quickly learn how to use new online collaborative communication tools.	7	6	5	4	3	2	1
36. If it's not user-friendly, I will not use it. **[R]**	7	6	5	4	3	2	1
37. I'm excited when I have to learn how to use updated online collaborative communication tools.	7	6	5	4	3	2	1

I choose online collaborative communication tools to communicate with my colleagues based on:	SA	A	SA	U	SDA	DA	SDA
38. how open the interaction needs to be.	7	6	5	4	3	2	1
39. how important the information are.	7	6	5	4	3	2	1
40. how fast I can setup discussion.	7	6	5	4	3	2	1
41. the volume of information that need to be communicated.	7	6	5	4	3	2	1
42. the sensitivity of issues I need to express.	7	6	5	4	3	2	1

Part V. Communication Outcomes

Competency Outcomes	SA	A	SA	U	SDA	DA	SDA
Appropriateness							
43. I avoid saying offensive things that might offend my colleague when using online collaborative communication tools.	7	6	5	4	3	2	1
44. I pay attention to the way I say things when using online collaborative communication tools.	7	6	5	4	3	2	1
45. I am mindful of my comments and behaviors when using online collaborative communication tools.	7	6	5	4	3	2	1
Clarity							
46. I generally get what I want out of interactions via online collaborative communication tools.	7	6	5	4	3	2	1
47. I get ideas clearly from my colleagues when using online collaborative communication tools.	7	6	5	4	3	2	1
48. My ideas are accurate and clear.	7	6	5	4	3	2	1
49. My ideas are rarely misunderstood.	7	6	5	4	3	2	1

Competency Outcomes	SA	A	SA	U	SDA	DA	SDA
Effectiveness							
50. I consistently achieve my goals in interactions via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
51. Interactions through online tools are effective in completing objectives that I set out to accomplish.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
52. I am effective in my conversation with others when using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Satisfaction							
53. I am satisfied to communicate via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
54. I enjoy interactions with others when online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
55. I feel good conversing via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
56. I am pleased with my interactions via online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Productivity							
57. I effectively accomplished my objectives when using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
58. My online interactions are productive.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
59. I am more efficient when using online collaborative communication tools.	**7**	**6**	**5**	**4**	**3**	**2**	**1**
60. Online collaborative communication tools saves my time.	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Thank you very much!

Appendix L
Letter of Approval

To: Ms. Vida Corsiga
Director, RSO, Reed Elsevier Philippines Inc.

Cc: Mr. Paul Christian Fabro
Operations Supervisor, Reed Elsevier Philippines Inc.

Mr. Joseph Peren
Manager II, Reed Elsevier Philippines Inc.

Ms. Corsiga,

Good day!

I am Darille Cabrera from the Manila Business Analyst – Product Delivery and Consultancy Department, currently taking Masters of Arts in Communication at the University of the Philippines Diliman. I am presently doing a research study titled ***"BORDERLESS WORKPLACE: EVALUATING FILIPINO CMC COMPETENCE AND ITS OUTCOMES IN THE USE OF ONLINE COLLABORATIVE COMMUNICATION TOOLS"***. The purpose of this study is to evaluate the user/individual communication competence in using collaboration tools such as Skype for Business, Microsoft Teams, WebEx/Jabber.

In line with this, I would like to ask your permission for me to conduct a survey at Reed Elsevier. I can assure you that no ethical rules or business operations will be compromised. I will be using an online survey tool (google form online survey) to disseminate the survey randomly via email or Linkedin.

Moreso, I could guarantee the management that:

1. I will uphold the **Republic Act 10173 or the Data Privacy Act of 2012**. Sensitive personal information will not be collected such as ***complete name, individual's race, ethnic origin, marital status, religious affiliation, political affiliation, health, education, social security number, tax identification number, home address, contact number and email address and any information or data pertaining to the person and/or business operation of RELX Corporation, Lexis Nexis and Reed Elsevier Philippines.***

However, the researcher will ask consent from the respondents to provide the following: 1) **age** 2) **gender** and 3) **years of working experience** since these information are important in the endeavor of the research.

2. I will make sure that there is proper informed consent where every respondent knowingly, voluntarily and intelligently gives his or her consent to answer the questions aligned with the research problem and objectives of this study.

3. I will keep the privacy, anonymity and confidentiality of the respondents who will participate in this study.

Once the research study has been finalized, I am willing to share the result with you in case you may find it useful.

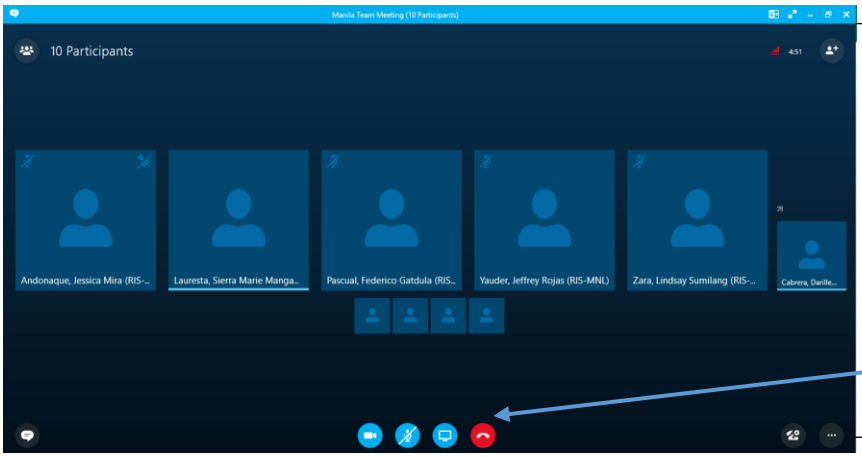
Attached herewith is the survey questionnaire for your reference. Thank you very much!

Sincerely yours,

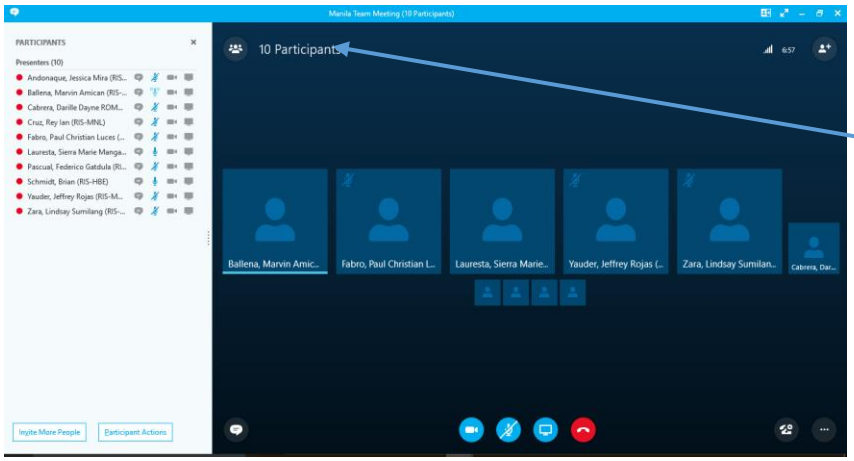
Darille Dayne Roman Cabrera
Business Analyst 1 / Batch Specialist
Product Delivery & Consultancy - Lexis Nexis Risk Solutions (US)
Darille.Cabrera@lexisnexisrisk.com

Appendix M
ONLINE COLLABORATIVE COMMUNICATION TOOLS

Skype for Business

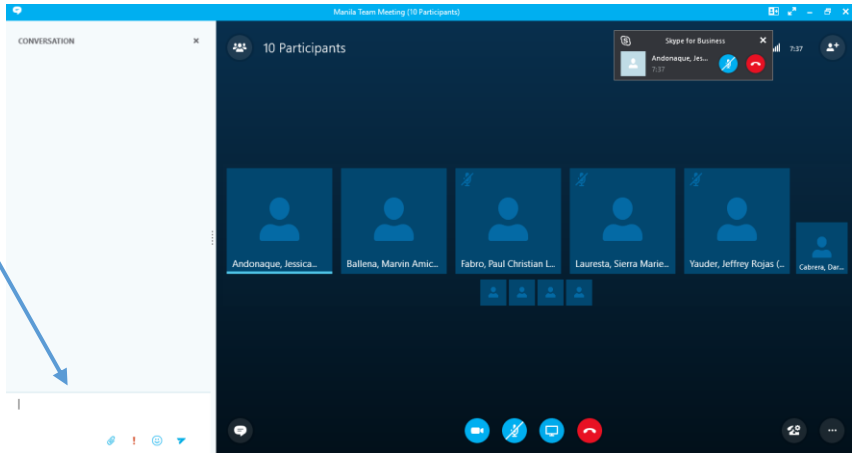


This image presents the user interface of Skype for Business. The platform can accommodate two or more participants. The group have the choice to use either audio or video setting. The participant can also present documents/slide decks

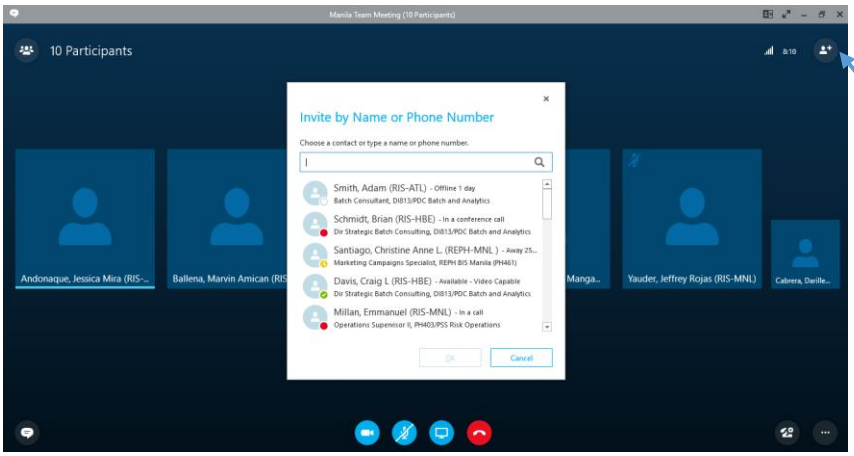


The user can see who are the participants included in the meeting.

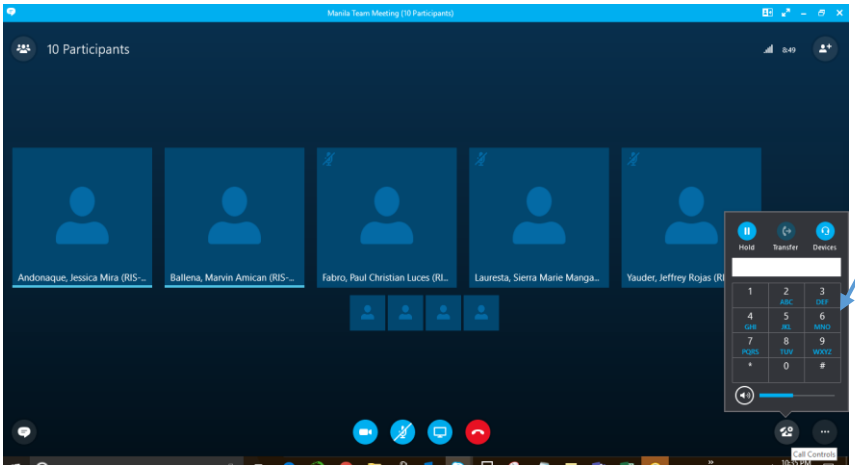
The participant can send instant message, file document, emoticons in the meeting



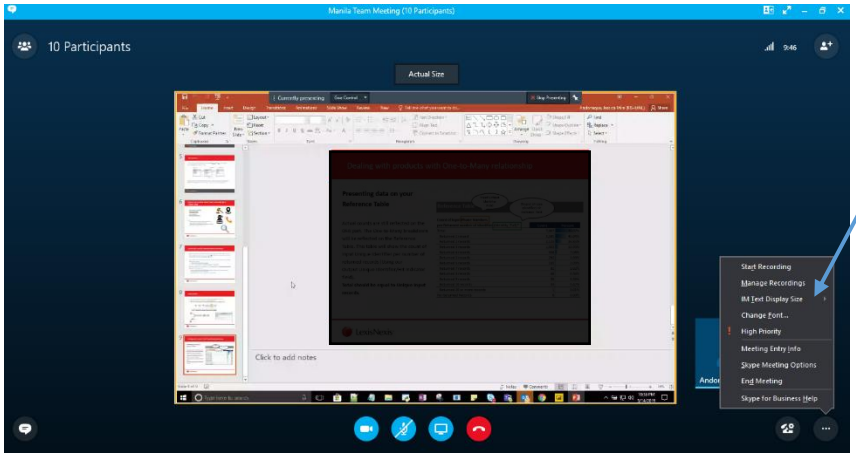
Skype for Business



The host or the participant can add invite to other participant/s who want to join the meeting



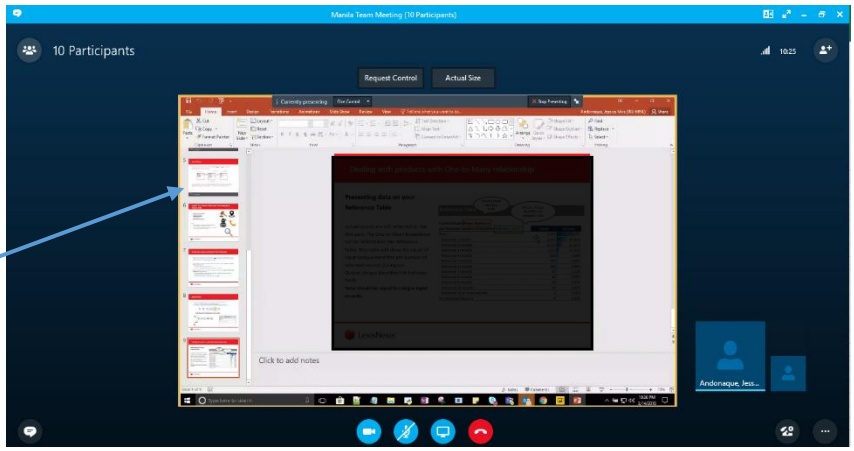
Skype for Business have a capability to connect other devices in the call

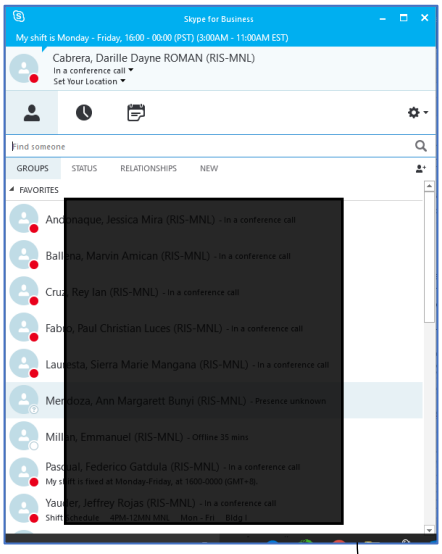


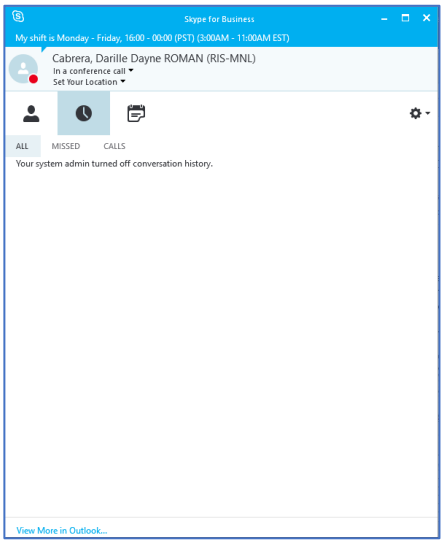
Meetings either audio or video can be recorded

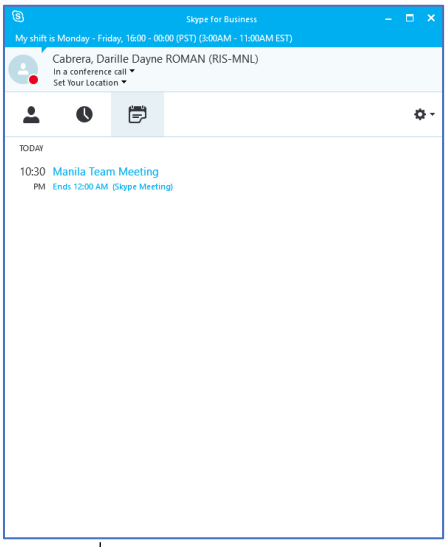
Skype for Business

Participants can share their monitor/screen. Other participants can request control in the screen as well to collaborate in any topics.



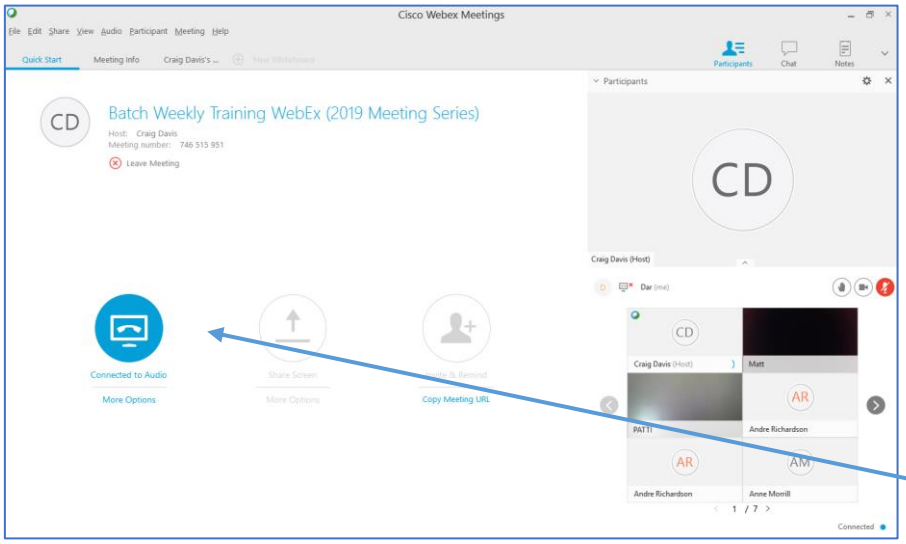




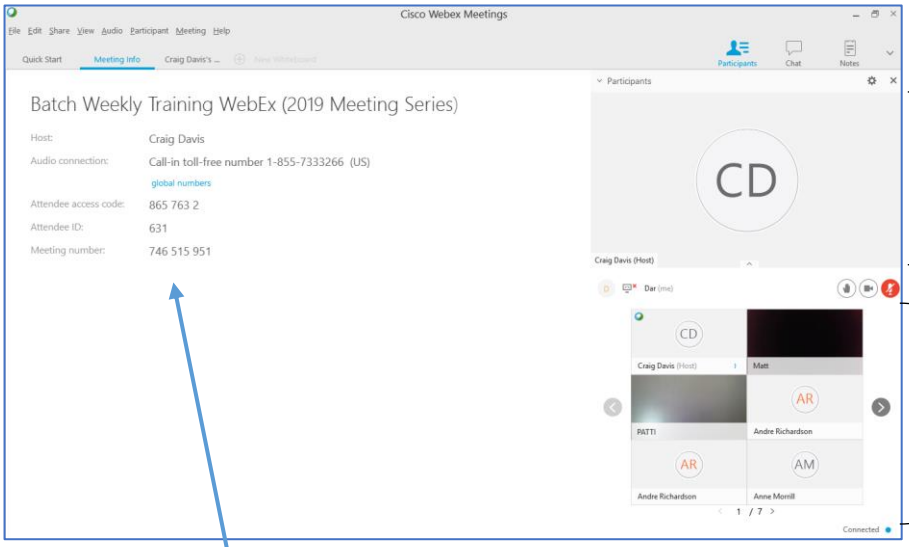


This is Skype/Lync “instant messaging” platform wherein you can send message to your colleagues immediately. It also have the functions where you can send file document, emoticons, immediately

Cisco Jabber WebEx



This image presents the user interface of Cisco WebEx. The platform can accommodate to two or more participants. The group have the choice to use either audio or video setting. The participant can also present documents



The user have the option to use video that will show in this section. Also below it is the raise hand, mute, and camera option

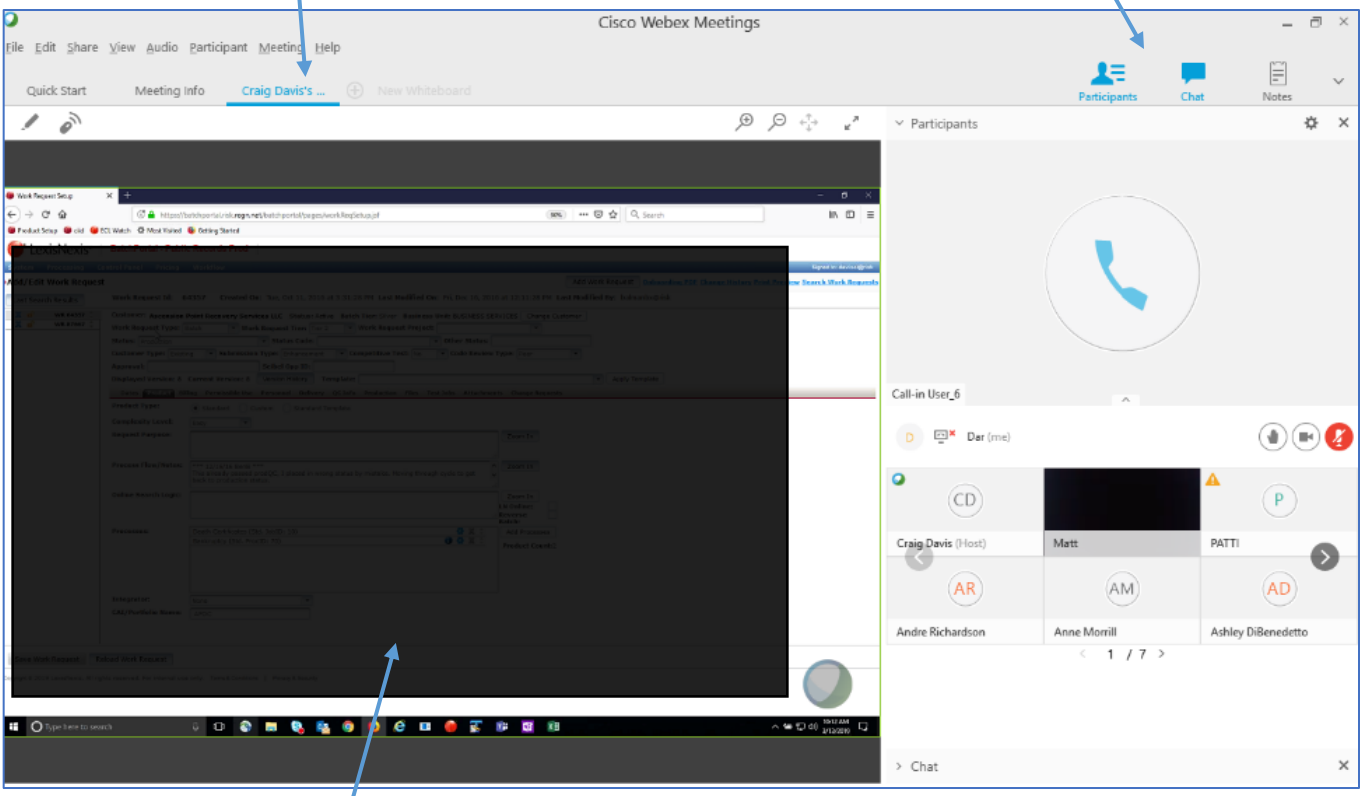
Participants in the meeting (2 or more participants can join the meeting. Max of 50-60) either in audio or video

Presents the meeting information

Cisco Jabber WebEx

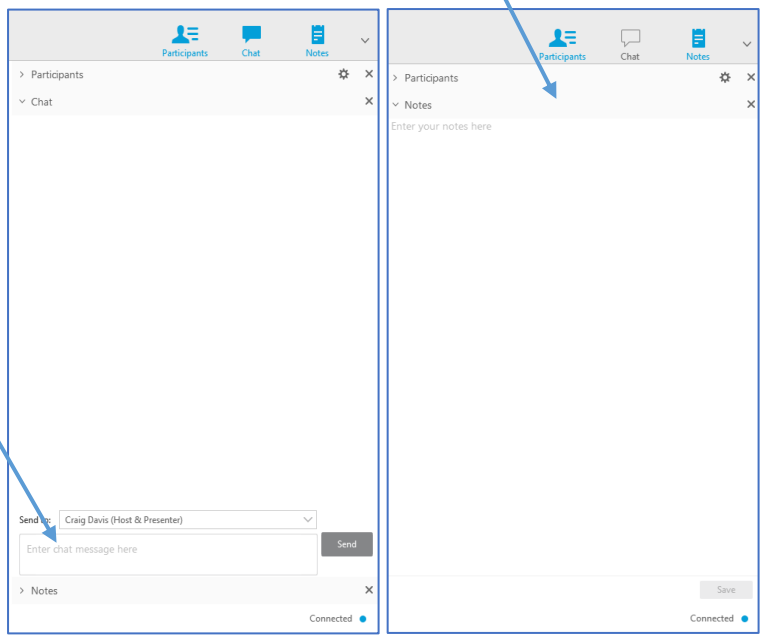
The presenter's tab option

List of tabs where you can see the list of participants in the meeting, a chat device to send a message and notes for meeting



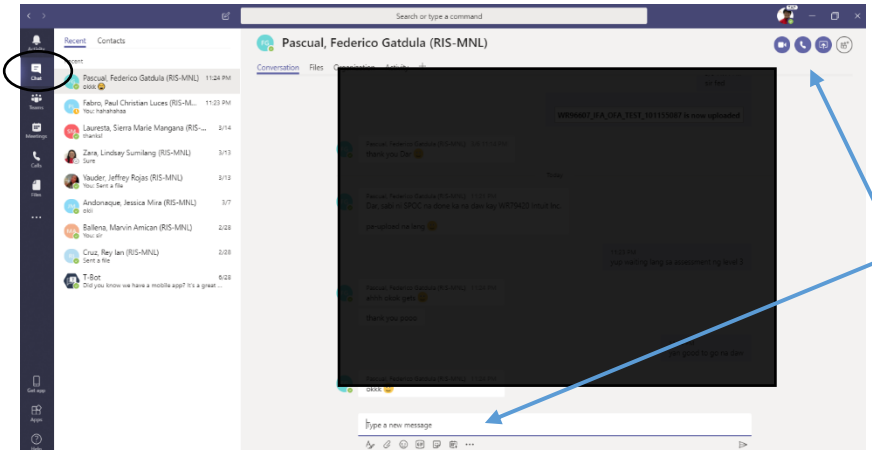
Participants can share their monitor/screen.

Participants tab to see the list who joined the meeting

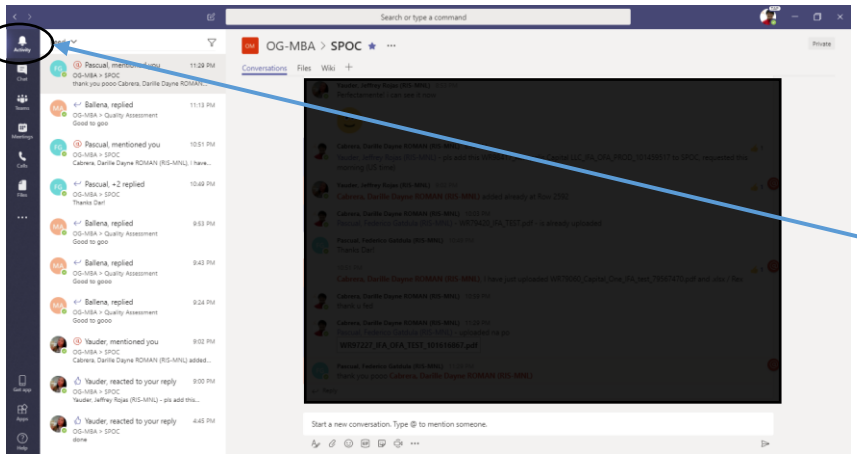


This is Jabber "instant messaging" platform wherein you can send message to your colleagues immediately. It also have the functions where you can send file document, emoticons, immediately

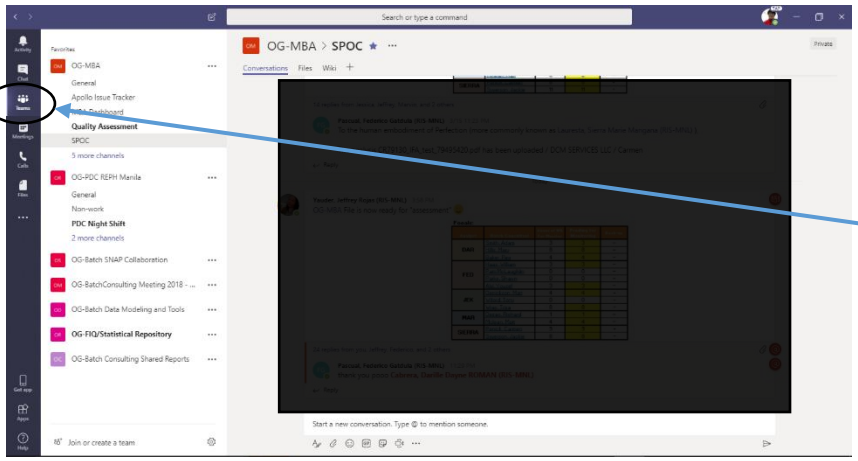
Microsoft Teams



This function features personal chat to other users where you can send instant message, send files, gif, and application. Users can also call via audio and video if necessary.



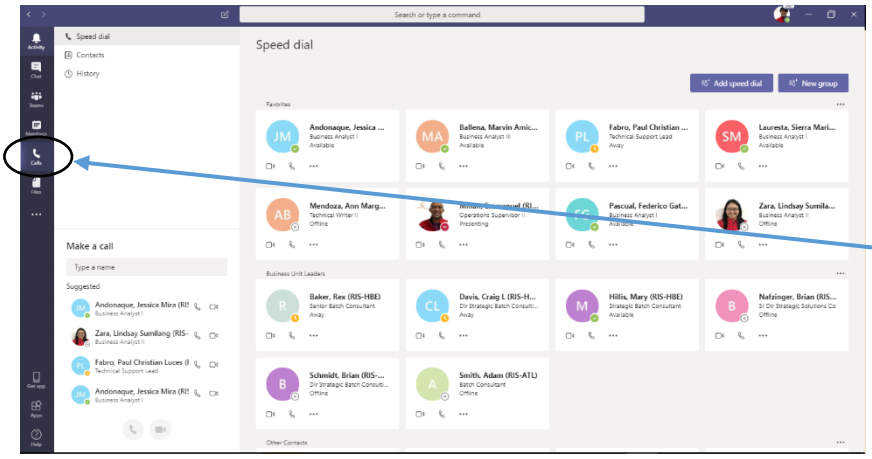
The platform has the capability to notify the users in all the activities they are involve from personal message to group concerns. (i.e. like tagging, mentions, replies)



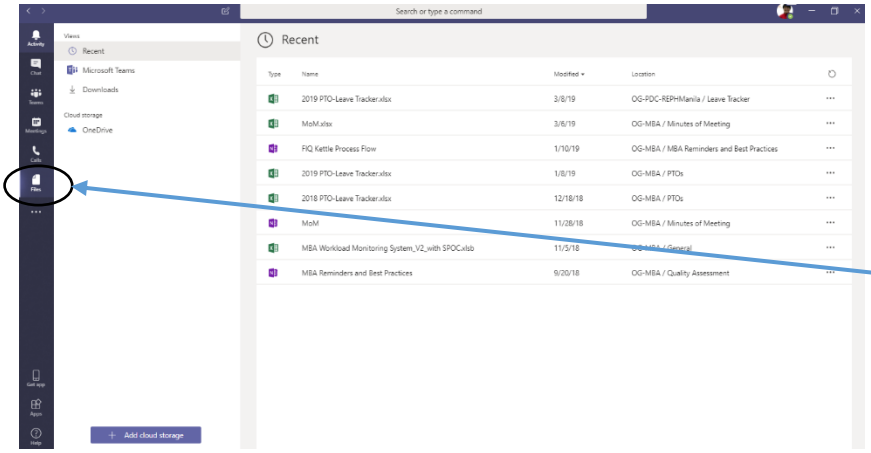
The highlight feature of MS Teams platform wherein users or groups can create an exclusive section where they can discuss specific or focus topics/discussion. This is highly used for users who want keep track of the group's activity. They send group message, send files, gif, and application. Users can also have group calls via audio and video if necessary.

Microsoft Teams

Users can sync their mailbox in MS Team for visibility if they still use emails, as well as, outlook calendars for schedule meetings and appointments.

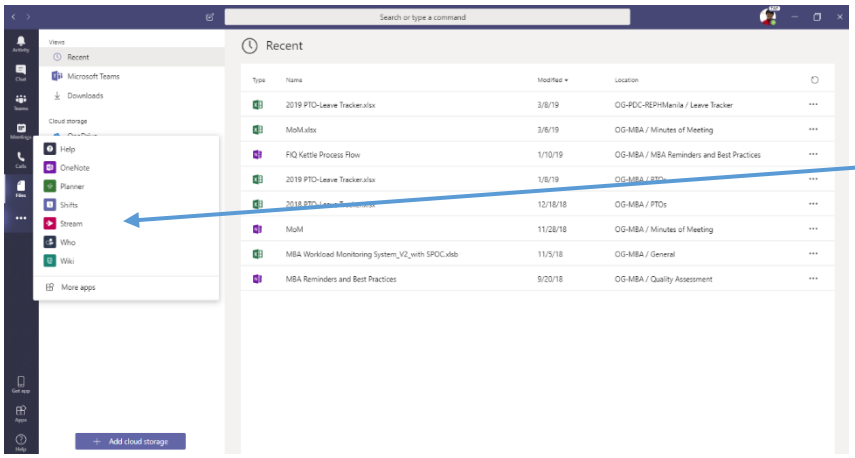


Users can call their colleagues in this tab showing the directory of the list of contacts and their succeeding positions.

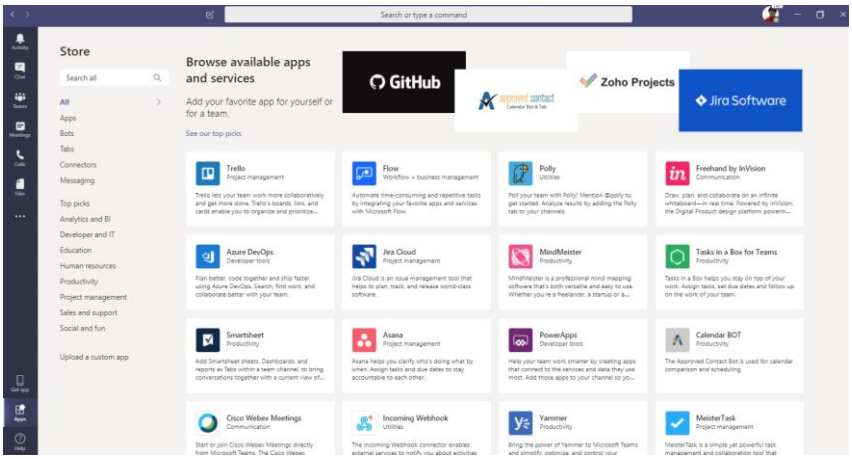


This tab shows the files in the user archives. It also shows the type of file, the date when it is submitted to the users and on what group the file is related or the source of the file.

Microsoft Teams



Users can also integrate applications in MS teams.



There are hundreds of applications available in this platform that can be integrated depending on the user/s needs.