EMPLOYEES SATISFACTION IN GROUP DECISION MAKING USING COMPUTER MEDIATED SYNCHRONOUS COMMUNICATION (CMSC) IN INFORMATION TECHNOLOGY ORGANISATIONS

MURALI SANDIRAN

MASTER OF COMMUNICATION

FACULTY OF CREATIVE INDUSTRIES
UNIVERSITI TUNKU ABDUL RAHMAN
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ABSTRACT

Many companies have begun to treat new communication technologies as an essential investment in creating a new paradigm for workplace communication. This paper examines the use of computer-mediated synchronous communication (CMSC) as a communication platform in group decision-making at IT organisations. The objective of this research to explore the significant relationship between CMSC competence components (Knowledge of CMSC, Motivation to use CMSC and CMSC Skills) and member's satisfaction in using the CMSC in Group Decision Making in IT organisations. A quantitative research method was adopted using 390 respondents for this research based on non-probability sampling method. Questionnaires were distributed to IT employees from IT organisations in Cyberjaya, Malaysia. The participation of the respondents was voluntary. Statistical Package for Social Sciences (SPSS) software was used to analyse the data. The results indicate that there are significant positive relationships between all the variables and indicate that CMSC Skills has a strong and significant positive relationship with Satisfaction using CMSC in Group Decision Making. This research found that the majority of respondents agreed that CMSC competence components have a positive impact on their communication satisfaction in group decision making. Therefore, all research hypotheses in this research were supported. This research focused on IT organisations in Cyberjaya. Hence similar studies could be conducted with various type of organisations in Malaysia.

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APPROVAL SHEET

This dissertation entitled "**EMPLOYEES SATISFACTION IN GROUP DECISION MAKING USING COMPUTER MEDIATED SYNCHRONOUS COMMUNICATION (CMSC) IN INFORMATION TECHNOLOGY ORGANISATIONS**" was prepared by MURALI A/L SANDIRAN and submitted as partial fulfilment of the requirements for the degree of Master of Communication at Universiti Tunku Abdul Rahman.

Approved by:

_____ Date: _____

Mr. Raduan bin Sharif
Supervisor
Department of Mass Communication
Faculty of Creative Industries
Universiti Tunku Abdul Rahman

Approved by:

_____ Date: _____

Ms. Kumutham Krishnan
Co-Supervisor
Department of Mass Communication
Faculty of Creative Industries
Universiti Tunku Abdul Rahman

FACULTY OF CREATIVE INDUSTRIES

UNIVERSITI TUNKU ABDUL RAHMAN

Date: 13 January 2019

SUBMISSION OF THESIS

It is hereby certified that ***Murali Sandiran*** (ID No:***12UJM01328***) has completed this final year thesis entitled "*EMPLOYEES SATISFACTION IN GROUP DECISION MAKING USING COMPUTER MEDIATED SYNCHRONOUS COMMUNICATION (CMSC) IN INFORMATION TECHNOLOGY ORGANISATIONS"* under the supervision of Mr. Raduan (Supervisor) from the Department of Mass Communication, Faculty of Creative Industries, and Ms. Kumutham (Co-Supervisor) from the Department of Mass Communication, Faculty of Creative Industries.

I understand that University will upload softcopy of my thesis in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

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DECLARATION

With this, I declare that the dissertation is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

Name: Murali Sandiran

Date: 13th January 2019

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LIST OF ABBREVIATIONS

1	CMAC	Computer Mediated Asynchronous Communication
2	CMC	Computer Mediated Communication
3	CMCC	Computer Mediated Communication Competency
4	CMSC	Computer Mediated Synchronous Communication
5	DV	Dependent Variable
6	GVT	Global Virtual Team
7	ICT	Information and Communications Technology
8	IT	Information Technology
9	IV	Independent Variable
10	MDEC	Malaysia Digital Economy Corporation
11	MSC	Multimedia Super Corridor
12	SIPT	Social Information Processing Theory

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

In today's scenario, employees of an organisation work interdependently with their counterparts, which are situated geographically. The locations are not only far from each other and across the country but also sometimes all around the globe. That implies a difference in languages and cultural norm within the team members. It is difficult to have an active collaboration when members of work teams were situated at geographically distributed areas. Colleagues who are separated by time, location and culture regularly battle with issues of trust, conflict, and possibly divisive subgroups. Separation makes a face to face communication uncommon among such colleagues, so colleagues depend on communication innovations, for example, email, phone, texting, wikis, and video conferencing for connection (Dekker et al., 2008; Kiesler and Cummings, 2002). The evolution of new communication technologies since the 21st century has dramatically changed organisational communication processes. Many companies have begun to treat new communication technologies as an essential investment in creating a new paradigm for workplace communication. Eventually, powerful and effective communication will motivate a workforce in decision making to contribute to the company’s

financial success.

Cyberjaya regarded to be the core of Multimedia Super Corridor (MSC) of Malaysia, whereby it is designated zone where technology entrepreneurs and global multinationals could enjoy attractive tax breaks, access to world-class human capital and infrastructure, at developing nation costs. In 1996, Nippon Telephone and Telegraph (NTT) agreed to develop a research and development (R&D) facility in Cyberjaya, which proved to be the project's catalyst. Soon, other giants like Dell, HP, DHL and Shell began to follow suit. With the global icons establishing their presence in Cyberjaya, the entire ecosystem began to form naturally, The Story of a Global Tech Hub. (n.d.). Therefore, the researcher had chosen Cyberjaya as a venue for research and data collection since IT employees are mostly attached to the multinational companies globally. Moreover, the IT employees from Cyberjaya is actively using computer mediated communication tools in their workplace. They would also keen to keep updated with the ever-changing communication technologies from time to time as part of the daily job routines in the IT workplace. The IT organisations referred in this study is mainly representing the entity of multiple IT employees from several IT companies who accomplish an overall and common goal in IT business unit. Besides, the researcher's background in IT organisation and working experience in Cyberjaya IT company has motivated the researcher to carry out the study at the Cyberjaya.

1.2 Problem Statement

Computer Mediated Synchronous Communication (CMSC) defined as sender and recipient working together through a computer in real time. Therefore, it enables faster information exchange between the two parties or more and quicker decision-making process (George and Sleeth.G, 2000) compared with asynchronous communication. As the use of CMSC, for an example video conferencing system become prevalent in society, more and more organisations are conducting their teamwork via Computer Mediated Communication (CMC). With the increased use of CMC group decision making in corporate management, many studies have been led to examine the issue as to whether CMC increases or decreases group performance and the effectiveness of CMC groups when compared with that of face to face groups (Adams, Roch, & Ayman, 2005; Baltes et al., 2002; Becker-Beck, Wintermantel, & Borg, 2005; Flanagin, Park, & Seibold, 2004). However, these studies are mostly focused in the western countries like the United States of America. On the other hand, the studies that conducted in Malaysia on the usage of CMC and face to face communication are commonly in the education area and student's perception (Lee, 2010). Lee (2010) claimed that CMC is yet to replace traditional communication channels such as face-to-face and print media as effective organisational communication channels in the Malaysian context.

Although there are various communication media choices are available

mainly in IT organisation which foster an excellent decision-making process, the researcher was driven to present insight on the satisfaction of the employees from Cyberjaya IT organisations in the group decision making using the new communication technologies in the workplace. Hence, there's a need for a conclusion to confirm that CMSC does help and satisfy the Cyberjaya IT employees in group decision making with the knowledge of CMSC, motivation to use CMSC and skills in CMSC.

1.3 Research Objectives

The main objectives are to gauge the members' satisfaction in group decision making using CMSC taking into consideration of Knowledge, Motivation and Skills factor in IT organisation. Based on this study, we will be able to explore the corporate management perspectives in the uses of CMSC for group decision-making activities. The research objectives developed are as below.

a) To analyse the significant relationship between the Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making

b) To analyse the significant relationship between the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making

c) To analyse the significant relationship between the CMSC Skills and Satisfaction using CMSC in Group Decision Making

1.4 Hypotheses

H1: There is a significant positive relationship between the Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making

H2: There is a significant positive relationship between the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making

H3: There is a significant positive relationship between CMSC Skills and Satisfaction using CMSC in Group Decision Making

1.5 The significance of the Study

New communication technologies have changed the communication media use in organisations. Companies are being dependent on the computer mediated communication tool in particular (CMSC) to achieve problem-solving and decision making in an organisation. In this research, it clarifies whether motivation, knowledge and skills in CMSC would influence users satisfaction towards using computers tools as part of the decision making the process. The data that gathered in this study may provide evidence relating to how decision making using CMSC may improve the business environment and communication. The finding will also

allow an organisation to be aware of the decision maker's perspective on the right communication tools to be used in their group decision-making process.

1.6 Summary

This chapter discusses the background of the study, problem statement and research objective. Also, this chapter explains the Hypotheses considered for this study for further testing. Lastly, this chapter ends with the clarification on the significance of the study, which described the benefits to the IT companies and embraced the use of CMSC technologies in group decision-making activities.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter delivers the content of an interpretation drawn from past studies by local and abroad researchers' findings on the satisfaction of using CMSC in group decision making. This chapter reviews the literature on CMC both synchronous and asynchronous and also mainly on the communication competence model and group decision making.

2.2 Computer Mediated Communication (CMC)

Communication Computer Mediated (CMC) is any communication between two distinct individuals who connect and additionally impact each other using different computers through the Internet or a system association utilising social software. CMC is not about the way by which two computers communicate but instead on how individual communicate through a computer. (Definition from the Wikipedia: Computer-mediated communication, Sep 2018)

Computer Mediated Synchronous Communication (CMSC) happens when communication occurs between two actively communicating members. Video conferencing, audio conferencing and instant messages are the types of synchronous communication. At times circumstances could disrupt the connection, but most of the time, it is reliable.

On the other hand, Computer Mediated Asynchronous Communication (CMAC) talks about those cases where a discussion does not rely upon a prompt answer. Email, video messages, and text messages are models of asynchronous communication. As such, a person could also reply, as individuals inclined to do the writings; however, the structure is not reliant on prompt feedback.

The evolution of Computer Mediated Communication grows by being design its computerised system and software to be able as a very usual method for group members to use in communication and conducting meetings. It typically focuses on the time and dollar savings of a "computer mediated meeting" versus a "face-to-face meeting," that would incur expenses such as travelling cost and accommodation cost. Thus, it becomes more common for organisations of various sizes to conduct business across national boundaries, meeting face to face may be neither economically reasonable nor the best method of communication. It can be likewise be testing strategically to arrange meeting times and locations when members of organisations were scattered all through geological locations. In this way, numerous companies have actualised different types of computer

conferencing system as a method for expending or substituting face to face meetings among geographically dispersed groups of people (Baltes et al. 2002).

2.3 Importance of CMC

Geographically scattered groups are so usual in organisations that a few researchers refer to them as "the norm for business and governments around the world" (Laht, 2015). Increasing globalisation has made virtual teamwork very regular in business organisations, government agencies and educational institutions. Most virtual collaboration, in any case, is still led through email, visit, or teleconferencing (Quan-Haase et al., 2015). Such groups can exist because technological advances enable team members to communicate and work together. A global virtual team (GVTs) is becoming a widespread practice in every organisation (Daim et al., 2012), with expansion in the complexities and difficulties of work team interactions. At the point when colleagues are at a separate location, time, and culture, they frequently encounter troubles in creating a trusting relationship and negotiating conflict (Stahl et al., 2010). The benefit of GVTs includes having the capacity to put the right individuals on the team no matter wherever they located. Another favourable position of having colleagues situated far and wide is that it gives organisations the capacity to be nearer to nearby markets and to be better ready to comprehend and react locally inside of a general worldwide business sector (Pinjani & Palvia, 2013). With global virtual groups turning out to

be progressively necessary for associations, it is essential to see how to minimise such interactional challenge (Scott, 2013).

Research on computer-mediated communication (CMC) has set forth the thought of "transparency," proposing that communication in mediated environments at first not have the fundamental structure of face to face collaboration (e.g., nonverbal signs, turn to take, and so on.). Be that as it may, with time, the underlying constraints get to be transparent to the user, bringing about a communication experience like face to face communication (Glińska-Neweś 2013).

(Noroozi et al., 2013) Concentrated on components of arguments on CMC and found that individuals appeared to make up for the absence of physical and perceptual cues available in Face to face contact by using the text-based nature of the medium to influence others through highly developed arguments. Both the conveyance of member support and development of argument proved significant predictors of decision achievement.

With the appearance of personal computing advancements and the Internet in the mid-1980s, CMC regarded as a technological solution for many issues that related to traditional face to face groups. CMC allows the individual to interact with greater numbers over different locations and at quicker rates than face to face communication. Secrecy connected with CMC may decrease to reduce the influence of social setting that conveys a message in regards to power and status

and may limit information exchange in face to face communication (Campbell & Stasser, 2006). The absence of argument for improvement and individuals' hesitance to mainly assess the validity of the cases might be related to politeness in face to face decision-making groups. One reason behind why groups usually depended on to decisions is that collectively, team members have access to more information than does any one individual member. If group individuals adequately share the more significant part of their task-relevant information, then the collective decision would be more informed than one made by any single member.

2.4 Face to Face Communication

Communication defined as a social and psychological interaction process that allows two or more persons to exchange current attitudes, information, and emotions for creating better mutual understanding (Chen and Tseng, 2016). Face to face communication is a popular way of human interaction that stays unsurpassed in many respects (Chen and Tseng, 2016). Face to face discussion also facilitates immediate feedback, contains visual and audio cues, act as a personal source and uses natural body languages. This effective method of communication has the advantage of enhancing socio-emotional conversation through discussion and commitment among employees (Böhlke et al., 2003). Lee (2010) claimed that face to face communication is an efficient method of communicating in organisations as face to face manner resulted in better overall performance. It uses verbal communication, enriched by facial cues to convey

information and relay quick feedback to other parties. In support with that, Begley (2004) claimed that face to face remains the most potent human interaction and never replace intimacy and immediacy of people conversing in the same room.

Lee (2010) research reported that face to face communication is faster, easier and more convenient than computer-mediated communication in the educational context. Face to face communication represents a high social presence, for example, the quality of a medium to convey the presence of a sender (Wadhah A., Hafadh I. & Zainab A., 2017). Lee (2010) further claimed that face to face communication is the best to use for communicating ambiguous tasks, decision making and completing complex tasks.

2.5 Group Decision Making

The decision is a determination arrived at after consideration, it happens when one option chosen, to the prohibition of others, it is rendering of judgment. The basis of any decision is undoubtedly a reasonable explanation of goals, initiative qualities, capacity to light up the significance for the objectives and ability to measure the expense and advantage of various options and the measure. A typical decision measurement helps organisations setting targets and then providing the essential feedback to supervisors on the advancement made towards the targeted objectives (Nura and Osman, 2012).

Many tasks and decisions in business, including management consulting, are performed in group settings. In numerous decision-making settings in industry, experts often interface in groups to produce thoughts and find solutions (Lu et al. 2012). The extensive research on multi-person decision making has, by and large, reasoned that group decision making results in better results than an individual decision making (Alvarado-Valencia et al. 2017). CMC instruments give an organised situation that permits members in a shared group to collaborate at the same time and anonymously to produce ideas, make decisions, and solve problems (Faraj et al. 2011). A researcher has found that groups brainstorming electronically commonly produce a higher number of ideas than do groups brainstorming in face to face settings (Wang, Schneider, & Valacich, 2015).

2.6 CMSC in Group Decision Making

The company's decision-making procedure consists of active communication in the workplace. Team members are welcomed to raise their views and gives ideas and be in the circle of a decision-making process. There is freedom in voicing their opinion where everyone has the accessibility in providing ideas and suggestion (Rajhans, 2012).

Computer-mediated tools design to assist on team assignment involving interaction, computer, and resolution technologies to gain solutions for ad hoc issues that arise. Chat tools accessible in for all intents and resolves all CMSC

frameworks overcome the core issue that obstructing input generation in face to face communication groups, generation hindering by permitting concurrent information to the meeting to generate new ideas, likewise alluded to as "two-way communication." Besides, CMSC users also typed comments recorded within the system's "group memory". A user could also check on the earlier sent information and messages. This will give a chance for the smooth communication flow without the risk of losing any vital information to be delivered (Gilson et al., 2015).

2.7 CMSC Satisfaction

There are many advantages of CMSC in group decision making compared to traditional face to face communication. CMSC permits group members to communicate their opinion continuously without interruption and anonymously. This process will focus on the participant with more views than personalities, and it may lead to a greater diversity of ideas expressed. Thus, it will lead to greater acceptance of those decisions and satisfaction by group members.

On the other hand, a scholar argues that CMSC is considered comparatively low in richness since it uses the one medium of a channel, eliminates non-verbal cues, formal, and does not give an instant response (Walther, Van Der Heide, Ramirez, Burgoon & Peńa, 2015). Various researcher resulting that CMC users spend more time to conclude, make a wrong decision, and higher points of normative behaviour leaving CMSC users to have lesser

satisfaction compare to face to face user (Gilson et al., 2015). Besides that, known CMSC groups that have more time spend interacting with each other has the level of satisfaction similar to face to face groups, whereby unknown CMSC members stated is not as satisfied compared to face to face members (Li, 2007; Adams et al., 2005).

Nevertheless, the working environment today still broadly utilises email, chat logs and other text-based forms of CMC that are thought to be "weaker" channels of communication (Baralou and McInnes, 2013). More studies conducted on the ways to express feeling through text-based CMC mediums and in its field of research on CMC technology to continue to develop (Katz, 2012).

2.8 CMC Competence Scale

According to Spitzberrg (1983), communication competence should be viewed as a function of knowledge, skill, and motivation. The Model of Intercultural Competence by (Spitzberg & Cupach, 1989) shows that the process of dyadic interaction as a way of two persons' motivation to communicate, knowledge of communication within the perspective, and skills in executing their motivation and knowledge. When they satisfied with the outcome of their discussion, then both party likely feel competent in their objectives and relatively satisfy with the results. However, they can also feel incompetent when they find their counterpart has some undeliverable expectancies from their discussion.

2.9 Motivation using CMSC

There is more research conducted that resulting in online communication are doing well in companies. The same researcher highlighted that the online teams are fronting with numerous obstacles, like a problem in interacting and organising deeds, misinterpretations, separation anxiety and weak team governance. Nevertheless, the team capable of overcoming and of building refined and desirable products (Purvanova, 2014).

The researcher proposes that the lower level members' openness is lesser in face-to-face groups, constraining belief in diversify members and making imbalanced involvement within the group (Heller, 2010; Krebs, Hobman, and Bordia, 2006). In contrast, CMSC takes out the non-verbal cues and position hierarchy positions that hinder equality in partaking in communication, increasing the involvement rate in diversified teams (Dietz-Uhler and Clark, 2001; Hertel et al., 2005; Lind, 1999). CMSC features allow the employee in the organisation can express their view further than where they are currently situated. It also simplifies the effort of group members with the same concern create a group to discuss further together. Computer network enhances the capability of team members of the same interest who were located in different areas to reach among them, communicate findings, form a structure and backing up one another (Bishop and Levine, 1999). Communication develops to enhance further and reduces dependency to have a

leadership power. Dietz-Uhler and Clark (2001) contend that this difference was attributable to the fact that CMSC empowers more freedom of thought, like this enhancing the dialogue. In a way, it helps employees to step in when they feel that having the relevant information or solution in certain circumstances.

2.10 Knowledge in CMSC

The fast-moving development of modern technologies increases the usage and need for CMC in organisations (Serban et al., 2015). Technology is being used in both media, be it online or face to face in daily life. This scenario, "comfort with technology is key to whether collaboration takes place" (Boettcher & Conrad, 1999, p. 90). Comfort with technology means that the level of a person feels comfortable with any particular advance technologies at the workplace (DeSanctis, Poole, & Dickson, 2000). Kayworth and Leidner's (2002) research indicated that comfort with technology could effect on the leadership control mainly in the online venue when members sometimes are carried away by the individual that well equipped with skills using latest technologies.

Consequently, for those with lack of training in handling and using the technology are more likely functions less efficiently. Therefore, there is a need to practice to function at their best to get the job done successfully by discovering the revolution in the online venue (Bergiel et al., 2008; Powell et al., 2004). This outcome called the generational gap with those happy with the change and others

that less happy and disliked the change (Bergiel et al., 2008). In this scenario, face to face contributes better group satisfaction than CMSC on most team measures.

On the other hand, the advanced technologies in using the computer have tremendous benefit in having group meetings from time to time and increase group performance and mainly in the quality of decision making, increase in the effectiveness of the process and team (Scott, 1999). Modern technologies give more prominent promptness and adaptability in group discussion. Flanagin et al. (2004) stated that either increase in group members or knowledge in using the new technologies both bring more satisfaction in the group decision-making process. Then again, those who are not in favour of using this new technology will eventually soon be less satisfied.

2.11 CMSC Skills

Advance in online communication such as audio and video conferencing usage is ever increasing since it has become the convenient online communication. Lewin and McNicol (2015) describe that the advance technology assists globalisation and contribute to the knowledge society, which raises dispute whether the 21stcentury skills are necessary to meet the goal in the workplace. On the other hand, being well equipped with knowledge handling specific software alone is not sufficient to accomplish the assignment goal, but skills in thinking and solving the

problem need to hand in hand with the knowledge (e.g. Ahmad et al., 2013; Claro et al., 2012; Eshet-Alkalai, 2004).

Ross (1996) stated that if a person is not well equipped with computer communication skills, it will hinder the person capability to handle group discussion and hold back to perform equally with their team members. Further, it will impact the decision-making process and bring dissatisfaction using this method of communication.

2.12 Theoretical Framework

2.12.1 Media Richness Theory

This theory was the oldest and thoroughly describes the media capacity theories that connect between task ambiguity and the level of richness in communication medium which is essential in the higher-level authorities in a company to able to reach effective communication at the workplace (Li,2007). Communication medium in an organisation is different from one to another concerning their ability to channel the information using rich media with an exceptional level of information-carrying capacity and low degree of lean media. Therefore, the media richness theory recommends that during job vagueness is in height, different analyses and resolutions are potential, and along these lines, a moderate with a significant level of information carrying capacity is vital for the job taken care of viable. However, during the assignment, vagueness is lesser; a lean medium is adequate due to the assignment is natural and expected. This theory utilizes the accompanying four criteria to group organisational media as far as information carrying capacity: (a) the speed of feedback; (b) the size to take multiple cues, such as verbal and nonverbal cues; (c) the ability to use natural language; and (d) the degree of personal focus (Li, 2007).

Alternatively, social information processing theory takes a comparative perspective with the media richness theory. However, it includes social influence in organisations as an additional variable. According to this theory, some lean media, for example, email, might be seen to be moderately rich if many people in organisation support in utilising and also well skilled in using them (Fulk et al. 1990; Li, 2007).

As indicated by media richness theory, face to face has a broader communication medium when compare to CMSC as shown in Appendix D - p.75. However, CMSC groups or face to face groups are more compelling depends on an incredible arrangement on the tasks. If the job is complicated, face to face groups ought to deliver vastly improved than CMSC groups due to their individuals require rich media to take part in some implementation, influence, and giving our view in their group communications. Interestingly, if the assignment is straightforward, CMSC ought to be an adequate channel for groups to fulfil their functions, and along these lines, CMSC groups eventually deliver task equally good comparing with face to face groups.

2.12.2 Social Information Processing Theory

Social Information Processing Theory is more focus on the linguistic content of computer-mediated communication (CMC); individuals able to grow their connection as much as how they meet face to face if we give adequate time.

Because online senders select, receivers magnify, channels promote, and feedback enhances favourable impressions, CMSC may create hyper-personal relationships. Social Information Processing theory need for social bonding is the same in CMSC as it is in Face to Face communication. The Social Information Processing Theory (SIPT) of CMSC (Walther, 1992) contends that without nonverbal cues, communicators adjust their social practices to the remaining cues accessible in CMSC, for example, content and linguistic strategies, and additionally chronemic (Walther and Tidwell, 1995) and typographic cues (Walther and D'Addario, 2001).

Social Information Processing Theory (SIPT; Walther, 1992) clarifies a portion of the different attributes that describe online communication and how individuals are liable to react to them. As a rule, SIPT recommends that CMSC characterised by a few restricting elements not present in traditional face-to-face communication. However, it likewise recommends that users of CMSC will work to discover ways to overcome these limitations and, that sufficiently given time, they can achieve their objectives as in Face to face communication.

Social Information Processing theory much used in this research as it clarifies on decision-making process's efficiency in the online medium and how they connect to the satisfaction of employee in group decision making. This theory explains that communicators attempt to accomplish communication objectives in online settings as much as in offline environments. At the point when the lack of

cues accessible in an internet setting presents difficulties in achieving their goals, users adjust their practices to the available signals. Sufficiently given time, individuals can use these circumventions to achieve objectives online similar to Face to face.

2.13 Conceptual Framework

The Conceptual framework provides a visual representation that helps to demonstrate the relationship between the variables in this study. The independent variables such as Knowledge, Motivation Skills were adopted from Spitzberg CMC competence model, and for this study, the questionnaires were narrowed down to Computer Mediated Synchronous Communication. These three independent variables are the interactant factors as the primary components of the Spitzberg model of CMC competence. The Knowledge of CMSC is related to the participant's awareness, familiarity and understanding of the CMSC and similar technology. The Motivation to use CMSC is referring to the participant's inspiration and encouragement towards CMSC technology and use. Skills to measure the participant's expertise & ability that are relevant to CMSC technology. Finally, the Satisfaction in Group Decision Making as a dependent variable to measure the members' satisfaction in group decision-making process using a CMSC technology and the instruments were adopted from a previous study (Li, 2007).

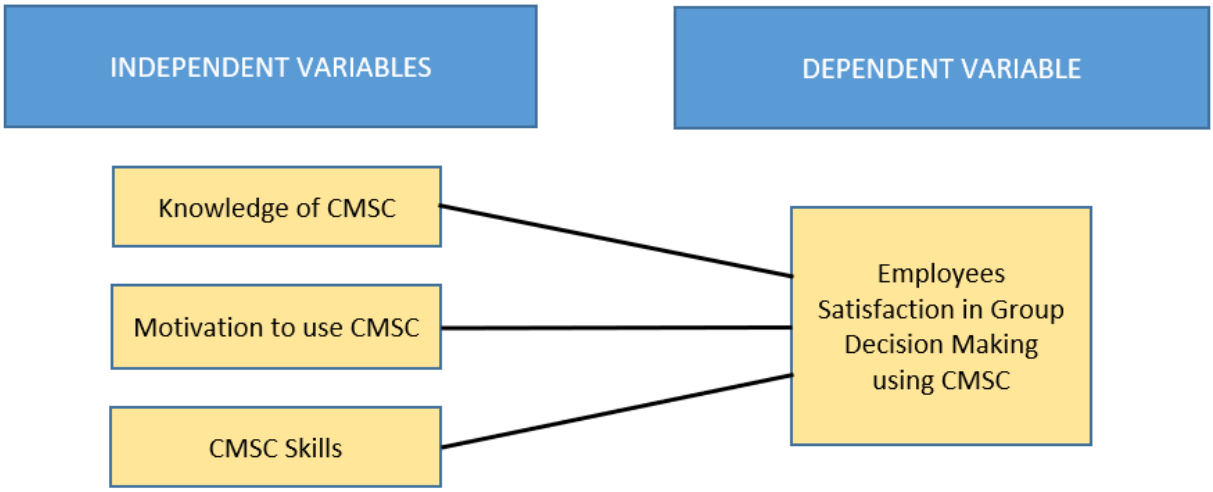

Figure 1.1: Conceptual Framework of the Research

2.14 Summary

This chapter covers the literature review for computer mediated synchronous and asynchronous communication. Also, this chapter explains the importance of the dependent and independent variables with supported sources and articles. Lastly, the section describes the theoretical framework and conceptual framework used for this study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will explain in detail about the research design, population and sampling design, data collection procedures, instrumentation and data analysis techniques. This chapter will provide a clear view of the research process and data collection.

3.2 Methodology

In this study, the quantitative approach was used to explore the relationship between the Knowledge in Computer Mediated Synchronous Communication (CMSC), the Motivation towards the CMSC, the Skills in CMSC and the satisfaction in group decision making using a CMSC. Also, with quantitative research methodology, the phenomena explained by accumulating the digital data and evaluated with statistical approaches (Sekaran & Bougie, 2009).

A survey carried out to gauge the IT employee perception towards the computer mediated synchronous communication in group decision making. The researcher had selected the survey questionnaire as the research instrument for this study be a more convenient way to yield a response from the participant. Survey questionnaire method would also produce a more consistent range of reaction from its participant, thus making it easier to accumulate and analyse the data.

3.3 Measurement Procedure & Instrumentation

In total, there were 29 items used for the questionnaires, which represent the demographic variables, independent variables (IV) and dependent variables (DV). For the demographic variable's surveys are consist of IT worker criteria, gender, age and working experience. For the independent variables, there were 15 items adopted from computer mediated communication competency (CMCC) model, which was developed by Spitzberg in 2006. The first independent variable had five questions, all of which were concerned about the motivation factor in CMSC hence referred to as Motivation in CMSC. The motivation items to gauge the attitudes, willingness and comfort towards the use of CMSC. Figure 1.2 shows the survey questions used for Motivation variable.

1. I enjoy communicating using computer media.
2. I am nervous about using the computer to communicate with others.
3. I am very motivated to use computer to communicate with others.
4. I look forward to sitting down at my computer to write to others.
5. Communicating through a computer never makes me anxious.

Figure 1.2: Survey Instruments for Motivation

The second independent variable in this study is referring to the Knowledge in CMSC, and five items were used to measure the Knowledge in CMSC. The Knowledge variable in this study can be related to the familiarity of the computer mediated synchronous communication (CMSC), experience in CMSC and

awareness of the CMSC technology. The below figure 1.3 shows the questionnaire items used in the survey for Knowledge.

1. I am very knowledgeable about how to communicate through computers
2. I am never at a loss for something to say in CMSC.
3. I am very familiar with how to communicate through video conferencing, audio conferencing, instant messaging and the internet.
4. I always seem to know how to say things the way I mean them using CMSC.
5. When communicating with someone through a computer, I know how to adapt my message to the medium.

Figure 1.3: Survey Instruments for Knowledge

The last independent variable consists of five items that show the skills that are relevant to CMSC and referred to as Skills in CMSC. Figure 1.4 shows the survey instruments used to gauge the skills in CMSC which are related to the ability and expertise in the use of CMSC.

1. I manage the give and take of CMSC interactions skillfully.
2. I can show compassion and empathy through the way that I write messages (e.g. instant messaging)
3. I am very articulate and vivid in my CMSC messages. (e.g. video conferencing , audio conferencing, instant messaging)
4. I am skillful at revealing composure and self-confidence in my CMSC interactions.
5. I have no trouble choosing which medium (i.e., computer, phone, face-to-face) to use to communicate, given a particular situation.

Figure 1.4: Survey Instruments for Skills

Lastly, for the dependent variable, the researcher has developed ten items that were related to perceived satisfaction in group decision making using CMSC was referred to as Satisfaction in using CMSC. The original questionnaire items for Satisfaction were adopted from the previous study (Li, 2007) was designed to

gauge the satisfaction level of CMC tool in group decision making, and the researcher has modified them to fit into this research context which merely for CMSC. The questionnaire items mainly used to capture and measure the experience and gratification gained in CMSC while using it for group decision making. Figure 1.5 shows the selected questionnaire items to measure the satisfaction of the CMSC users in Group Decision Making.

1. The CMSC is efficient and employing the best way in helping me & my colleagues to work on the decision making task.
2. The other participant shows that they have a good understanding of what I say during the decision making activities using CMSC.
3. I am able to identify the outcome of the decision making task with others using the CMSC mode.
4. I am satisfied with the identified outcomes of group decision making using CMSC.
5. The CMSC helps to communicate better in a group for a decision making task.
6. I feel that that I have an equal contribution in group decision making with others using CMSC.
7. The CMSC enable to being cohesive in decision making task in a group.
8. I am satisfy with the decision making process by using CMSC at my workplace.
9. There's a smooth communication by using the CMSC in group decision making process.
10. I feel that the CMSC is necessary in group decision making activities.

Figure 1.5: Survey Instruments for Satisfaction

All the survey instruments for the independent variables and the dependent variable employed in this study consistently uses a 5- point Likert scale. The following five-point scale indicate the degree to which each statement of true or untrue in use of various CMSC media, (1) not at all true of me, (2) mostly not true

of me, (3) neither true nor untrue of me, (4) mostly true of me and (5) very true of me.

The researcher has carried out a pilot test to test the reliability of the survey questionnaire items and to measure the Cronbach's alpha value for all of the instruments. There were forty IT employees from MSC status companies participated in the pilot study and these forty IT employees were not included in the actual research study. As stated by Bruin (2006), a reliability coefficient results of 0.70 and higher is widely accepted in behavioural and social research. As shown in Table 3.1, all independent variables and the dependent variable have recorded Cronbach's alpha value more than 0.70. Therefore, the researcher has decided to use the same instruments for the actual research study.

Also, according to the previous study (Chua, Y. P., & Chua, Y. P.,2017), the independent variables for CMC competence components recorded Cronbach's alpha value (CMC skill=0.87; CMC knowledge=0.86; CMC motivation=0.90) more than 0.70. For the dependent variable, the original ten instruments for Satisfaction from the previous study (Li, 2007) has recorded greater than 0.80.

Table 3.1: Reliability Test for Pilot Test on Independent Variables and Dependent Variable

Variables	Cronbach's Alpha	N of items
Knowledge (IV)	0.857	5
Skills (IV)	0.833	5
Motivation (IV)	0.913	5
Satisfaction (DV)	0.949	10

*Note: The sample size (n) is 40

3.4 Populations

According to report from Malaysia Digital Economy Corporation (MDEC), (2014) on MSC Malaysia talent supply-demand study 2013 to 2017 have stated that total population for MSC status companies in Cyberjaya population expected to grow from 15,300 in 2014 to 21,400 in 2017. MSC Malaysia status is an acknowledgement by the Government of Malaysia through the Malaysia Digital Economy Corporation (MDEC), for ICT and ICT-encouraged organisations that create or use multimedia technologies to deliver and upgrade their products and services. It is additionally a characteristic of world-class service and accomplishment and regarded as a passport and gateway to host of privileges conceded by the Government of Malaysia to the business entities.

(http://www.mscmalaysia.my/what_is_msc_malaysia_status)

3.5 Sampling

The total respondent required for this research is 384 IT employees from IT companies in Cyberjaya. The total respondent's calculation adopted from sample size determination table, which was developed by Krejcie and Morgan (1970) which provide comprehensive scientific guidelines sample size decisions (see Appendix C - p.74). According to the table when the population size is N= 50,000 the sample size is n = 381, when N= 75,000 the sample size is n= 382 and when N= 100,000 and above the sample size is n=384.

Due to the unavailability of the IT employee statistics in Cyberjaya, the researcher has selected the maximum sample size of 384 IT employees in Cyberjaya. On the other hand, Abdul Ghaffar (1999) has mentioned that sample size is crucial because it impacts the strength of the research's findings and that a larger sample may influence the accuracy of the information obtained. Consequently, the researcher has selected 384 as the sample size for this research on the precision level of ±5% and with a 95 per cent level of confidence, as shown in Appendix C – p.74.

This research uses non-probability sampling to select the research respondents as the sample; hence, the sample in this study was gathered without using the method of mathematical probability. As the total population of IT

employees in Cyberjaya as of 2018 is yet to be determined and not well defined, the most appropriate sampling to be used is non-probability sampling (Etikan et al.,2016).

As cited by Crisp (1957, p. 176), one of the approaches to determining the sample size for non-probability sampling is to observe and consider it as if it was a probability sampling. Even though the non-probability sampling does not follow any systematic probability or guarantee the actual representation of the population (Wimmer & Dominick, 2006), McDaniel and Gates (1998, p. 310) have stated that it is still possible to get the reasonable representation of the population if the determination sampling carried out correctly. In non-probability sampling, although we could not generalise the research results statistically, however, we could generalise the research results and conclusions theoretically ("Non-probability sampling," n.d.). Furthermore, the researcher is aware that it's appropriate to use a non-probability sampling method since there was not enough information about the population and the sampling frame to conduct probability sampling.

From the various types of non-probability sampling techniques, this research used a convenience sampling technique. Convenience sampling is a type of nonprobability or non-random sampling where members of the target population that meet specific practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate for the study (Etikan et al.,2016). Therefore, the researcher ensured that the respondents were

meeting the criteria of this research, which is the IT employee from Cyberjaya and the respondent's willingness to spend some time for the survey session. On the other hand, the researcher approached the respondents based on their ease of availability and accessibility. With this in mind, the researcher given out the questionnaires to the respondents at public amenities such as restaurants and bus stations at Cyberjaya as the environment would be more comfortable for filling up the questionnaires without any constraints. The convenience sampling can be used in both qualitative and quantitative study, but frequently used in the quantitative study; hence, the researcher decided to use the convenience sampling for this research.

3.6 Research procedure

The researcher explained, the quantitative methods previously have been used in this research using questionnaires as a survey instrument. In the initial stage, a pilot study conducted with a total of 40 IT employees in Cyberjaya. The pilot test was performed to ensure the questionnaire instruments is reliable enough to be used in the actual study. The results obtained from the actual research on the reliability test were discussed in chapter four.

An actual survey with the total number of 390 employees from IT organisations in Cyberjaya conducted without combining with those already participated in the pilot study. Furthermore, the total respondent in the actual survey

is more than a sample size selected for this study which gives more representative of the IT employee population.

3.7 Data Collection and Analysis

There are multiple methods of collecting research primary data such as questionnaires, interviews, and observations (Cheah, 2009). Among these methods, questionnaires are the appropriate way of collecting data because they can accommodate a large number of sample or organisation and are relatively inexpensive (de Vaues, 2002; Zikmund, 2000). In this case, the questionnaire used as the primary source of getting data.

The survey questionnaire was distributed to the respondents at Cyberjaya public amenities such as restaurants and bus stations. According to the survey distribution and collection plan, the researcher targeted average of seven respondents per day, and it takes approximately three months to complete the actual survey distribution and collection. In some circumstances, the researcher has assigned voluntary facilitators to coordinate the survey to reach out to the eligible respondents from their IT workplace to complete the questionnaires with the presence of the researcher. With the help of the facilitator, the researcher manages to save some time & cost by conducting a small group survey in the restaurants. The survey carried out during lunch break and after office hours so that it would not affect their working hours and the total time taken to answer the entire 25 Likert-scale questionnaires is within 10 minutes or less. Besides, this will provide an equal chance for every employee to participate regardless of age, gender and positions held in the company. The researcher also has opportunities to eliminate

those who are not from the IT companies in Cyberjaya as per the primary criteria to be part of this research.

Statistical Package for the Social Sciences (SPSS) (Version 21) was used to analyse the data. Pearson Correlation analysis was used to interpret the data from the survey completed by the respondents. Pearson Correlation analysis was carried out to test hypotheses 1, 2 and 3. Pearson Correlation analysis is one of the most frequently used procedures in statistics and will allow testing the strength of the relationship between the independent and dependent variables (Wahid, 2011).

3.8 Summary

This chapter discusses the population of IT employee in Cyberjaya, sampling method and questionnaire that develops to rationalise and study further on the feedback by the respondents and to reconnect with the literature review for this study. This chapter also explains the data distribution procedures and the overall duration to complete the survey collection. On the other hand, there is an explanation about the pilot test, which was conducted to ensure the questionnaire instruments were reliable to use in the actual study — the results obtained from the reliability test discussed in chapter four.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter summarises the results obtained from the data analysis. The primary objective of this chapter is to analyse and presents the findings regarding the relationship between Knowledge, Skill, Motivation and Satisfaction using CMSC in group decision making. Mean, and the standard deviation was used in the analysis as the most common descriptive statistics for interval scaled data (Sekaran, 2009). Inferential statistics included Pearson correlation used to identify the direction and the strength of the relationships, and to test the hypotheses developed in this study.

4.2 Overview of Data Collected

4.2.1 Response Rate

A total of 395 questionnaires were distributed to the respondents, which was more than needed to get the 384-sample size. As predicted the subtotal of 390 questionnaires has been received back. This shows 99 per cent of the response rate

from the respondents. According to Sekaran (2003), a high response rate is useful for statistical analysis.

4.2.2 Profile of Respondents

The questions about respondents' demographic characteristics were used to create a profile. Descriptive statistics were used to summarise the sets of data gathered from the distribution of the questionnaires. According to Kendrick (2005), descriptive statistics will be useful to the researcher to describe the frequency of characteristics such as sex, age, and race. Demographic questions, including gender, age group, and working experience were asked in this study.

The results obtained from the descriptive statistics are shown in Table 4.1 below. Of those who responded, 57.4 per cent (224) is the male respondents, and 42.6 per cent (166) is the female respondents. While, the age of respondents was categorised into three levels, which were 18 to 29, 30 to 40, and 41 & above. Most respondents fell into the range of age 30 to 40, which had 59.2 per cent (231 respondents) of the respondents followed by the respondents with the range of age 18 to 29 with 34.6 per cent (135 respondents) and the range of age 41 and above with of 6.2 per cent (24 respondents).

The third factor is the working experience section of the respondents. There were three sections to be chosen, which were working experience of 1 to 5 years, 6

to 10 years and 11 years and above. Eleven years and above recorded the highest percentage with 44.9 per cent (175 respondents) followed by 6 to 10 years with 36.2 per cent (141 respondents), and about 19.0 per cent (74 respondents) were with 1 to 5 years working experience. Table 4.1 below also shows the occurrence and proportion of the respondents.

Table 4.1: Respondents – Demographic

Sex	Frequency (N)	Per cent (%)
Male	224	57.4
Female	166	42.6
Total	390	100.0

Age	Frequency (N)	Per cent (%)
18-29 years old	135	34.6
30-40 years old	231	59.2
41- above	24	6.2
Total	390	100.0

Working Experience Year(s)	Frequency (N)	Per cent (%)
1 to 5 year(s)	74	19.0
6 to 10 years	141	36.2
11 years and above	175	44.9
Total	390	100.0

4.3 Reliability Test

A Cronbach's alpha reliability test was conducted on the variables in this study, which included Knowledge, Skill and Motivation in using CMSC as independent variables while Satisfaction in group decision making was the dependent variable. Cronbach's alpha was used as a reliability coefficient to testing the goodness of data. The items recorded had acceptable, reliable values, in which

the overall Cronbach's alpha value was 0.941, while the dependent and independent variables recorded results ranging from 0.771 to 0.841. These results fulfilled the rule that correlations between the items are reliable at a value of 0.65 or higher. Table 4.2 below shows the results obtained from the reliability test.

Table 4.2: Reliability Test Results

Variables	Cronbach's Alpha	N of items
Knowledge (IV)	0.783	5
Skills (IV)	0.841	5
Motivation (IV)	0.771	5
Satisfaction (DV)	0.823	10

4.4 Descriptive Analysis Mean and Standard Deviation

Table 4.3 to Table 4.6 below provides the mean and standard deviation scores obtained for the independent and dependent variables used in this study. Overall, the mean scores have shown positive high mean values.

4.4.1 Knowledge

Table 4.3 below shows the means and standard deviations for Knowledge, which is the first independent variable in the study. All the items in this section recorded means 4.17 to 4.53. The item two "I am never at a loss for something to say in CMSC (e.g. video conferencing and teleconferencing)" recorded the highest mean and thus can be seen as a leading factor in measuring the Knowledge.

Table 4.3: Means and Standard Deviation for Knowledge of CMSC

Items	Mean	Standard Deviation
1.I am very knowledgeable about how to communicate through computers	4.26	0.678
2. I am never at a loss for something to say in CMSC.	4.53	0.640
3. I am very familiar with how to communicate through video conferencing, audio conferencing, instant messaging and the internet.	4.34	0.629
4. I always seem to know how to say things the way I mean them using CMSC.	4.18	0.639

5. When communicating with someone through a computer, I know how to adapt my message to the medium.	4.17	0.661
Average	4.30	0.65

4.4.2 Skill

For Skill, we have recorded the means and standard deviations, and the mean results are shown in Table 4.4 below. From this table, we can see that the second item "I can show compassion and empathy through the way that I write messages. (E.g. Instant Messages)" recorded the highest mean compared to other items in this section. The fourth item scored the lowest mean "I am skillful at revealing composure and self-confidence in my CMSC interactions." with mean scores of 4.47.

Table 4.4: Means and Standard Deviation for Skills in the CMSC

Items	Mean	Standard Deviation
1. I manage the give and take of CMSC interactions skilfully.	4.61	0.652

2. I can show compassion and empathy through the way that I write messages (e.g. instant messaging)	4.74	0.602
3. I am very articulate and vivid in my CMSC messages. (e.g. video conferencing , audio conferencing, instant messaging)	4.52	0.705
4. I am skilful at revealing composure and self-confidence in my CMSC interactions.	4.47	0.708
5. I have no trouble choosing which medium (i.e., computer, phone, face-to-face) to use to communicate, given a particular situation.	4.55	0.651
Average	4.58	0.663

4.4.3 Motivation

Table 4.5 below shows mean scores and standard deviations for Motivation variables. This independent variable recorded an average mean score of 4.39. The third item "I am very motivated to use computer to communicate with others." recorded the highest mean compared to the other items. The second item "I am nervous about using the computer to communicate with others" recorded a mean value of 4.24, which was the lowest of the items in this section.

Table 4.5: Means and Standard Deviation for Motivation to use CMSC

Items	Mean	Standard Deviation
1. I enjoy communicating using computer media.	4.43	0.698
2. I am nervous about using the computer to communicate with others.	4.24	0.757
3. I am very motivated to use computer to communicate with others.	4.65	0.658
4. I look forward to sitting down at my computer to write to others.	4.36	0.810
5. Communicating through a computer never makes me anxious.	4.28	0.725
Average	4.39	0.730

4.4.4 Satisfaction in group decision making

Table 4.6 below shows the mean scores for Satisfaction variables. This dependent variable recorded the lowest mean values with an average of 4.24

compared to other independent variables on the whole. The first item "The CMSC is efficient and employing the best way in helping me & my colleagues to work on the decision making task" scored the highest mean value of 4.80 in this section. While the ninth item "There's a smooth communication by using the CMSC in group decision-making process" and the tenth item "I feel that the CMSC is necessary for group decision-making activities" scored the lowest mean value of 4.14 compared to other items in this section.

Table 4.6: Means and Standard Deviation for Satisfaction

Items	Mean	Standard Deviation
1. The CMSC is efficient and employing the best way in helping me & my colleagues to work on the decision making task.	4.80	0.582
2. The other participant shows that they have a good understanding of what I say during the decision making activities using CMSC.	4.21	0.712
3. I am able to identify the outcome of the decision making task with others using the CMSC mode.	4.10	0.794

4. I am satisfied with the identified outcomes of group decision making using CMSC.	4.19	0.716
5. The CMSC helps to communicate better in a group for a decision making task.	4.20	0.708
6. I feel that that I have an equal contribution in group decision making with others using CMSC.	4.21	0.740
7. The CMSC enable to being cohesive in decision making task in a group.	4.19	0.693
8. I am satisfy with the decision making process by using CMSC at my workplace.	4.18	0.717
9. There's a smooth communication by using the CMSC in group decision making process.	4.14	0.684
10. I feel that the CMSC is necessary in group decision making activities.	4.14	0.718
Average	4.24	0.71

4.5 Hypotheses Test

The objective of the hypothesis test used for this research was to conclude and define the connection and type of the relationships between the Computer-mediated Communication Competence variables and member's satisfaction in group decision making using CMSC.

Hence the method was used to analyse the relationship between Knowledge of CMSC, Motivation to use CMSC, Skills that are relevant to CMSC and member's satisfaction using CMSC tool in group decision making. Also, the hypothesis testing was adopted to see if the results of this research corresponding to the recommended or suggested hypotheses. Further to observe the hypotheses and validate the relationships among the variables, this study has adopted Pearson correlation to demonstrate the direction and strength of the relationships among the variables that measured using interval scale (Sekaran, 2003).

4.5.1 Pearson Correlation

This study used the Pearson correlation analysis. This study adopted guidelines from Cohen (1988) in determining the strength of the relationship, which is shown in Table 4.7 below. According to Cohen (1988), the negative or positive sign in front of correlation (r) value refers to the path of the relationship.

Table 4.7: Strength of the Relationship

Correlation (r)	Strength
r= 0.10 to 0.29 or r= -0.10 to -0.29	Small
r= 0.30 to 0.49 or r= -0.30 to -0.49	Medium
r= 0.50 to 1.0 or r= -0.50 to -1.0	Large

4.5.2 Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making

H1: Research Hypothesis One

There is a significant positive relationship between the Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making

With the SPSS output resulted from Pearson correlation analysis method, the results were shown in Table 4.8 for the Pearson correlation between the variables of Knowledge of CMSC (independent variable) and Satisfaction using CMSC in group decision making (dependent variable). The results indicate the significant value (2-tailed) is ρ =.000, and the value is smaller from alpha value = 0.05. Hence this shows a positive and significant relationship among Knowledge of CMSC and Satisfaction in group decision making using the CMSC.

The correlation coefficient (r) of r = .796 also support and confirm the positive relationship between the Knowledge of CMSC and Satisfaction using CMSC in group decision making. As refer by Cohen (1988), correlation coefficient (r) value in a range within 0.50 to 1.0 indicate a substantial, significant relationship. Thus, it can be established that there is a significant positive and strong relationship between the Knowledge of CMSC and Satisfaction using CMSC in group decision making: $r = .796$, ρ (2-tailed) $< .05$ (Table 4.8). Consequently, the Research Hypothesis One is well supported.

Table 4.8: Correlations within Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making

	Pearson Correlation (r)	Significance
Values	0.796**	0.000

*Note:*** Correlation is significant at p = .01 (2-tailed)

4.5.3 Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making

H2: Research Hypothesis Two

There is a significant positive relationship between the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making

The below Table 4.9 shows that researcher used the Pearson correlation analysis method to analyse on the output and to test the research hypothesis within the independent variable which is Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making. The Pearson correlation analysis outcome indicates a positive relationship within the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making since the significant value (2-tailed) was ρ=.000, and it is lower from the

value of alpha= 0.05.

Moreover, the correlation coefficient, r value = .779. Since the value of r is not negative, it shows that Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making shows a positive relationship. As quoted by Cohen (1988), the value of the correlation coefficient (r) equals to .779 explains that the variables Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making has a strong positive relationship. With these results, Hypothesis Two is accepted.

Table 4.9: Correlations within Motivation to use CMSC and Satisfaction using CMSC in Group Decision

	Pearson Correlation (r)	Significance
Values	0.779**	0.000

Note:** Correlation is significant at p = .01 (2-tailed)

4.5.4 Skills are relevant to CMSCand Satisfaction using CMSC in Group Decision Making

H3: Research Hypothesis Three

There is a significant positive relationship between CMSC Skills and Satisfaction using CMSC in Group Decision Making

For the research hypothesis three, the Pearson correlation was used to identify the level, and the type of the relationship within the Skills are relevant to CMSC and Satisfaction using CMSC in Group Decision Making. As the results were shown in Table 4.10, it indicates that there is a significant relationship between CMSC Skills and Satisfaction using CMSC in Group Decision Making when the significant value is smaller from the alpha value of 0.05. The significant value (2-tailed) between both variables was ρ =.000.

For CMSC Skills and Satisfaction using CMSC in Group Decision Making the correlation coefficient (r) value r = .818 and the r-value is not negative. Thus it is supported since the variables have a positive relationship. On the other hand with the (r) value r = .818, it can be concluded that Skills are relevant to CMSC and Satisfaction using CMSC in Group Decision Making have a strong positive relationship since the correlation coefficient (r) value is more than 0.50 and this has been suggested by Cohen (1988; cited by Pallant, 2007).

It is concluded that there is a significant relationship within CMSC Skills and Satisfaction using CMSC in Group Decision Making: r = .818, ρ (2-tailed) < .05 (Table 4.10). Hence, Hypothesis Three is supported.

Table 4.10: Correlations within CMSC Skills and Satisfaction using CMSC in Group Decision Making

	Pearson Correlation (r)	Significance
Values	0.818**	0.000

*Note:** Correlation is significant at p = .01 (2-tailed)*

4.6 Summary

This chapter revealed the results obtained from the statistical analysis. Based on the results from the Pearson correlation test as shown in Table 4.1, there is a significant strong positive relationship between all the variables and also showed that CMSC Skills has a strong and, significant positive relationship with Satisfaction using CMSC in Group Decision Making. Therefore, H1, H2, and H3 hypotheses were accepted with a significance level of the p-value is less than .001.

Table 4.11: Pearson Correlations among Knowledge, Motivation, Skill and Satisfaction

Item		1	2	3	4
1	Knowledge of CMSC	-	.772**	.846**	.796**
2	Motivation to use CMSC	.772**	-	.833**	.779**
3	CMSC Skills	.846**	.833**	-	.818**
4	CMSC Satisfaction	.796**	.779**	.818**	-

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

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the overall outcomes of the study. The section has been divided into three parts, which are the discussion, conclusion and recommendations. The three objectives developed earlier in the study will be discussed further based on the results obtained in chapter four. The second part will cover the conclusion of the study. Meanwhile, recommendations have been included in the last part of this section.

5.2 Summary of Findings

The demographic information of the target respondents was classified as gender, age group and working experience group in years. To further determine the Satisfaction of the CMSC in Group Decision Making among IT organisation's employees in Cyberjaya by assessing the Computer Mediated Synchronous Communication (CMSC) competence scale which was grouped to three variables as Knowledge of the CMSC, Skills in CMSC and Motivation to use CMSC. There were 390 respondents chosen through purposive sampling and convenience sampling at Cyberjaya public amenities such as bus stations and restaurants.

Consecutively, the respondent also validated if they are from IT organisations working in Cyberjaya before distributing the survey paper as this was the main to criteria for participation in the survey.

The demographic variable shows that the total male participants are 224 respondents, while the female participant is 166 respondents. Among the respondents, most of them fall under the age category of 30 to 40 years old, which is 59.2.7 per cent while the least was the 41 and above age group, which is 6.2 per cent. For the working experience in years, it is divided into three categories, which 1 to 5 years, 6 to 10 years and 11 years and above. The majority of the respondents' working experience is 11years and above is 44.9 per cent followed by 6 to 10 years, which is 36.2 per cent and lastly 1 to 5 years, which are 19.0 per cent.

5.3 Explanation of Hypotheses Results

H1. There is a significant relationship between the Knowledge of CMSC and Satisfaction using CMSC in Group Decision Making. The hypothesis was tested using the Pearson correlation test. This Hypothesis is relevant to the first objective of this study to explore the significant relationship between CMSC Knowledge and Satisfaction using CMSC in Group Decision Making. This allows us to investigate the satisfaction of employees from the IT organisation on the use of CMSC technology in the workplace for Group Decision Making. The research result shows that there was a significant positive correlation between Knowledge and Satisfaction

of the employees in the use of CMSC at the value (2-tailed) was ρ =0.000. Pearson r = 0.796. This confirms that the Knowledge can be applied to practice to better structure the features in CMSC technology (e.g. video conferencing, audio conferencing and instant messaging) to fit the Group Decision Making process and needs of the organisations. As been stated by Scott (1999), the advancement in technology brings advantages to group performance and the quality in decision making. Therefore, knowledge of using new technologies brings more satisfaction in the group decision-making process.

H2: There is a significant relationship between the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making. This hypothesis is tested using the Pearson correlation test and derived from the second research objective, which was analysed the significant relationship between the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making. The result shows as predicted that the Motivation to use CMSC and Satisfaction using CMSC in Group Decision Making has a significant positive correlation at the value (2-tailed) was ρ =0.000. Pearson r = 0.779. This confirms that the Motivation factor to use the CMSC has played an essential role to increase the satisfaction level of the members in group decision making by using CMSC technology. Employees are motivated when there is plenty of time and flexibility given when using computer mediated communication compared to the usual face to face communication. According to Campell (2006), higher satisfaction obtained through computer mediated

communication, which eliminates the power and status barrier in group discussion and decision-making process.

H3: There is a significant relationship between CMSC Skills and Satisfaction using CMSC in Group Decision Making. This Hypothesis resulted from the third research objective to analyse the significant relationship between the Skills are relevant to CMSC and the IT employees Satisfaction using CMSC in Group Decision Making. The Pearson correlation test was to conclude this hypothesis, as well. This study results found that the Skills are relevant to CMSC is the primary facilitator for positive outcomes in member satisfaction among all other variables were discussed in the study with the strong significant positive correlation at the value (2-tailed) was $\rho = 0.000$. Pearson $r = 0.818$. As been argued by (e.g. Ahmad et al., 2013;

Claro et al., 2012; Eshet-Alkalai, 2004), to perform better in an organisation, the way a person thinks, solving problems, and absorb is the most important factor than the knowledge on any specific software. This shows that the organisation could focus on developing the skills of CMSC by offering various courses in IT workplace to increase the employee's satisfaction in the group decision-making process in use of CMSC.

5.4 Limitations and Recommendations

The primary scope of this research is narrowed down to only on IT organisations in Cyberjaya. Thus, looking at a broader perspective, this could be obtained if taken in the count of participants are from different areas such as population from other MSC Malaysia status IT organisations in Klang Valley. Besides that, the objective of the study focused on the CMSC satisfaction measures in Group Decision Making process in the IT workplace, and this is minimally useful to IT organisations. Hence, it is insufficient to conclude for other organisations in Malaysia (Lee, 2010). Therefore future researcher may look into other area organisation besides IT organisation for better insight on the role of CMSC in group decision making. Besides, the researcher interested in the question of whether the IT organisation employee still prefers to use computer-mediated synchronous communication for group decision making. It would be interesting to find out on the group decision-making process effectiveness between the Computer Mediated Synchronous communication and the traditional Face to Face communication using a functional perspective approach.

Finally, referring to the age group recorded in this study, the age group 41 and above is the minority in the sampling with non-probability sampling. Therefore, the future researcher may look into the age factor to determine the satisfaction level using Computer Mediated Synchronous Communication (CMSC) in group decision making at the workplace.

5.5 Implication and Conclusion

This study revealed that CMSC had been pervasively used in the IT workplace as a communication platform for group decision making and play an important role in IT workplace communication for Group Decision Making with higher employee satisfaction. As a result, this research supports the main objectives and bring the outcomes that members' satisfaction in group decision making using CMSC has a significant strong positive relationship between the computer mediated synchronous communication competence factors in IT organisation. The communication competence measured into three factors which are Knowledge of CMSC, Motivation to use CMSC and Skills that are relevant to CMSC play a vital role in cultivating the members' satisfaction in group decision making using CMSC. Therefore, it is essential for IT organisation management focus on conducting training and workshops for employees on CMSC technology to achieve desirable group decision making in their workplace.

Besides, companies would benefit more using CMSC in the workplace because it is not only a powerful communication tool but also helps in cost and time saving apart from connecting people from dispersing geographical area in almost real time.

This study also assists the Malaysian IT organisation in enhancing their employee's knowledge, motivation and skill in the use of CMSC technologies in group decision making. As such, the IT organisation in Malaysia should find this research extremely useful in improving the quality of the group decision making

the process by looking into the CMC competence factors. In conclusion, the IT organisation and the management should always keep up with rapidly changing communication technology trends to achieve the organisation goals and successful business.

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APPENDIX A

Survey Questionnaire (Sample)

Dear Valued Participant,

My name is **Murali Sandiran** and I am a postgraduate student at Universiti Tunku Abdul Rahman (UTAR) and currently pursuing the Master of Communication program. I am conducting a survey for my dissertation on the title "A Study on Satisfaction in Group Decision Making using Computer Mediated Synchronous Communication (CMSC) at Information Technology (IT) Organisation".

I am inviting you to participate in this research study by completing this surveys. I would be most grateful if you could take some time to complete the enclosed questionnaire and indicate the most appropriate response for each question. The estimated time needed to complete this questionnaire would take about 5 – 10 minutes, kindly answer the questions after reading the instructions carefully. There is no definite right or wrong answer. There is no compensation for responding nor is there any known risk. The validity of this study highly depends on your honesty and trustful response. Please be assured that this is a confidential survey and all information gathered from this survey would be used strictly for academic purpose only. In order to ensure that all information will remain confidential, please do not include your name. Your time and cooperation is highly appreciated. It is important to have your participation.

Thank you.

This survey/questionnaire is designed to solicit your review and analysis of the "**A Study on Satisfaction in Group Decision Making using Computer Mediated Synchronous Communication (CMSC) at Information Technology (IT) Organisation**"

In order to successfully complete the questionnaire you must rate your values using 5 - point scale/binary scale. Kindly choose only **one** option unless otherwise stated.

1. I work at IT organization as an IT employee in Cyberjaya.

   Yes (start the survey now) ☐ No (decline participation in the survey) ☐

   (Note: This survey is only intended for IT employees working full time at an IT organization in Cyberjaya.)

2. Gender Male ☐ Female ☐
3. Age Groups 18 to 29 ☐ 30 to 40 ☐ 41 & above ☐
4. Working Experience (Years) 1 to 5 ☐ 6 to 10 ☐ 11 & above ☐

Participant is required to rate on a scale of 1 to 5 for the following questions.
(**1**.Not at all true of me, **2**.Mostly not true of me, **3**.Neither true nor untrue of me; Undecided, **4**.Mostly true of me, **5**. Very true of me)

Motivation to use CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to explain your Motivation to use the computer mediated synchronous communication (CMSC).	**Not at all true of me**	**Mostly not true of me**	**Neither true nor untrue of me; Undecided**	**Mostly true of me**	**Very true of me**
1. I enjoy communicating using computer media.	1	2	3	4	5
2. I am nervous about using the computer to communicate with others.	1	2	3	4	5
3. I am very motivated to use computer to communicate with others.	1	2	3	4	5
4. I look forward to sitting down at my computer to write to others.	1	2	3	4	5
5. Communicating through a computer never makes me anxious.	1	2	3	4	5

Knowledge of CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to estimate your Knowledge of Computer Mediated Synchronous Communication (CMSC).	**Not at all true of me**	**Mostly not true of me**	**Neither true nor untrue of me; Undecided**	**Mostly true of me**	**Very true of me**
1.I am very knowledgeable about how to communicate through computers	1	2	3	4	5
2. I am never at a loss for something to say in CMSC.	1	2	3	4	5
3. I am very familiar with how to communicate through video conferencing, audio conferencing, instant messaging and the internet.	1	2	3	4	5
4. I always seem to know how to say things the way I mean them using CMSC.	1	2	3	4	5
5. When communicating with someone through a computer, I know how to adapt my message to the medium.	1	2	3	4	5

Skills that are relevant to CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to rate your Skills that are relevant to Computer Mediated Synchronous Communication (CMSC).	**Not at all true of me**	**Mostly not true of me**	**Neither true nor untrue of me; Undecided**	**Mostly true of me**	**Very true of me**
1. I manage the give and take of CMSC interactions skillfully.	1	2	3	4	5
2. I can show compassion and empathy through the way that I write messages (e.g. instant messaging)	1	2	3	4	5
3. I am very articulate and vivid in my CMSC messages (e.g. video conferencing , audio conferencing, instant messaging)	1	2	3	4	5
4. I am skillful at revealing composure and self-confidence in my CMSC interactions.	1	2	3	4	5
5. I have no trouble choosing which medium (i.e., computer, phone, face-to-face) to use to communicate, given a particular situation.	1	2	3	4	5

Satisfaction in using CMSC *(e.g. video conferencing, audio conferencing & instant messaging)* **for Group Decision Making**

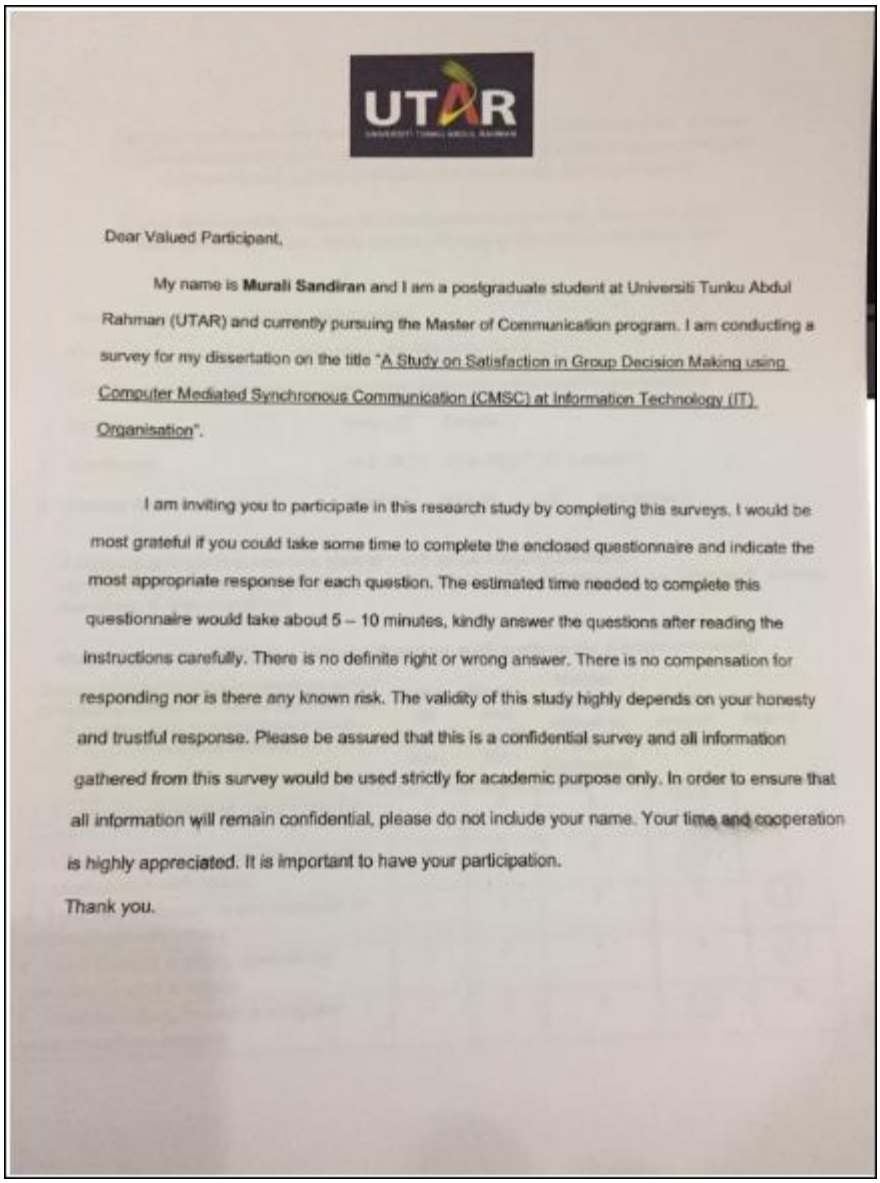
Kindly encircle the most relevant option for each of the following statements to explain your satisfaction in using Computer Mediated Synchronous Communication (CMSC) for Group Decision Making.	**Not at all true of me**	**Mostly not true of me**	**Neither true nor untrue of me; Undecided**	**Mostly true of me**	**Very true of me**
1. The CMSC is efficient and employing the best way in helping me & my colleagues to work on the decision making task.	1	2	3	4	5
2. The other participant shows that they have a good understanding of what I say during the decision making activities using CMSC.	1	2	3	4	5
3. I am able to identify the outcome of the decision making task with others using the CMSC mode.	1	2	3	4	5
4. I am satisfied with the identified outcomes of group decision making using CMSC.	1	2	3	4	5
5. The CMSC helps to communicate better in a group for a decision making task.	1	2	3	4	5
6. I feel that that I have an equal contribution in group decision making with others using CMSC.	1	2	3	4	5
7. The CMSC enable to being cohesive in decision making task in a group.	1	2	3	4	5
8. I am satisfy with the decision making process by using CMSC at my workplace.	1	2	3	4	5
9. There's a smooth communication by using the CMSC in group decision making process.	1	2	3	4	5
10. I feel that the CMSC is necessary in group decision making activities.	1	2	3	4	5

/

Thank you for your most valuable participation.

APPENDIX B

Respondent's Feedback (Sample)

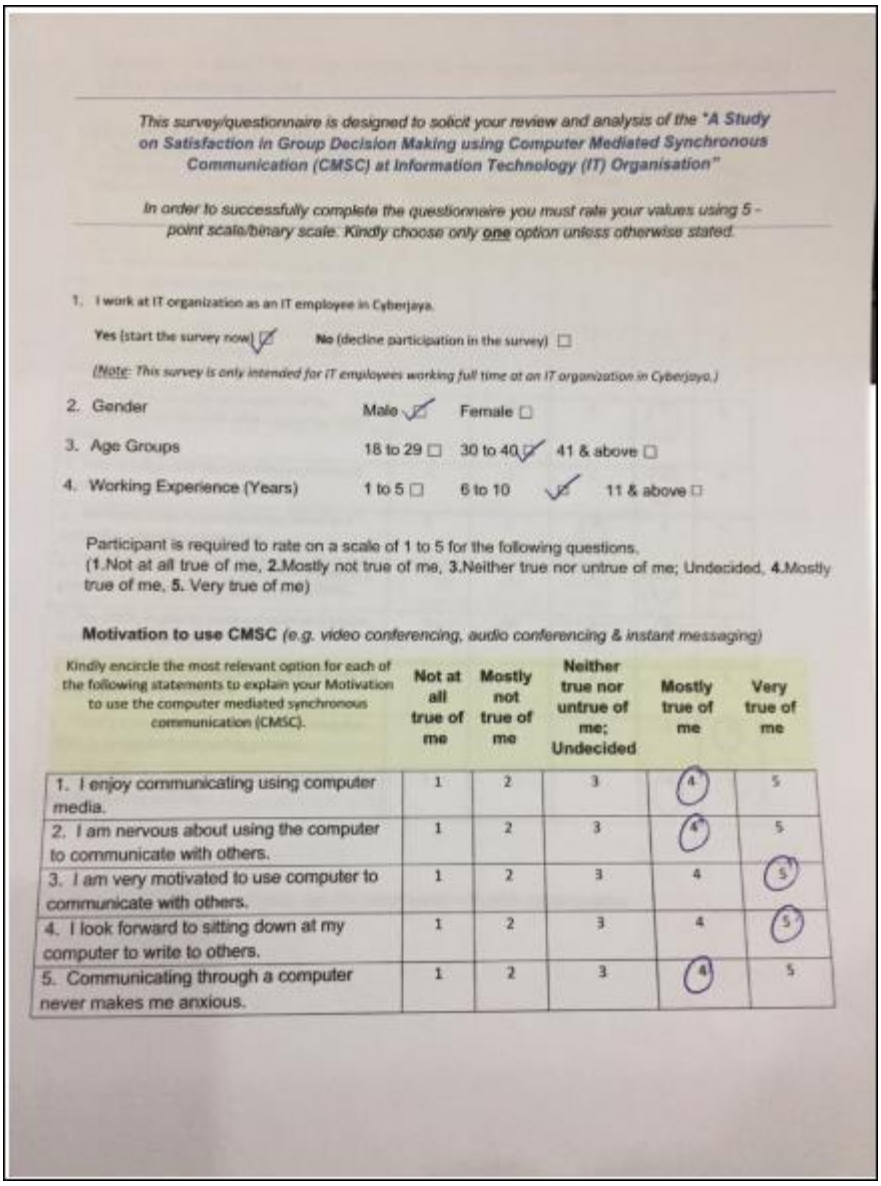


Dear Valued Participant,

My name is **Murali Sandiran** and I am a postgraduate student at Universiti Tunku Abdul Rahman (UTAR) and currently pursuing the Master of Communication program. I am conducting a survey for my dissertation on the title "A Study on Satisfaction in Group Decision Making using Computer Mediated Synchronous Communication (CMSC) at Information Technology (IT) Organisation".

I am inviting you to participate in this research study by completing this surveys. I would be most grateful if you could take some time to complete the enclosed questionnaire and indicate the most appropriate response for each question. The estimated time needed to complete this questionnaire would take about 5 – 10 minutes, kindly answer the questions after reading the instructions carefully. There is no definite right or wrong answer. There is no compensation for responding nor is there any known risk. The validity of this study highly depends on your honesty and trustful response. Please be assured that this is a confidential survey and all information gathered from this survey would be used strictly for academic purpose only. In order to ensure that all information will remain confidential, please do not include your name. Your time and cooperation is highly appreciated. It is important to have your participation.

Thank you.



*This survey/questionnaire is designed to solicit your review and analysis of the "**A Study on Satisfaction in Group Decision Making using Computer Mediated Synchronous Communication (CMSC) at Information Technology (IT) Organisation**"*

*In order to successfully complete the questionnaire you must rate your values using 5 - point scale/binary scale. Kindly choose only **one** option unless otherwise stated.*

1. I work at IT organization as an IT employee in Cyberjaya.

   Yes (start the survey now) ☑ **No** (decline participation in the survey) ☐

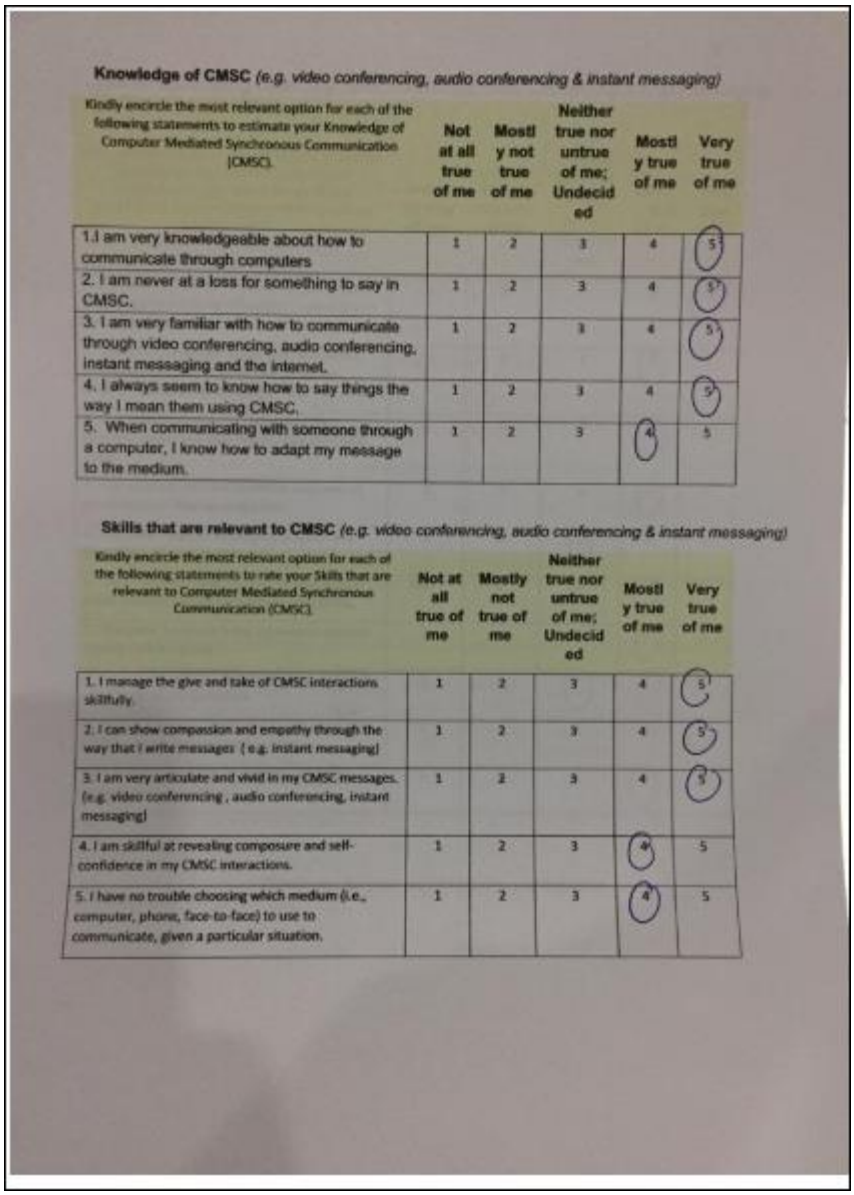
   (Note: This survey is only intended for IT employees working full time at an IT organization in Cyberjaya.)

2. Gender — Male ☑ Female ☐
3. Age Groups — 18 to 29 ☐ 30 to 40 ☑ 41 & above ☐
4. Working Experience (Years) — 1 to 5 ☐ 6 to 10 ☑ 11 & above ☐

Participant is required to rate on a scale of 1 to 5 for the following questions.
(**1.**Not at all true of me, **2.**Mostly not true of me, **3.**Neither true nor untrue of me; Undecided, **4.**Mostly true of me, **5.** Very true of me)

Motivation to use CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to explain your Motivation to use the computer mediated synchronous communication (CMSC).	**Not at all true of me**	**Mostly not true of me**	**Neither true nor untrue of me; Undecided**	**Mostly true of me**	**Very true of me**
1. I enjoy communicating using computer media.	1	2	3	(4)	5
2. I am nervous about using the computer to communicate with others.	1	2	3	(4)	5
3. I am very motivated to use computer to communicate with others.	1	2	3	4	(5)
4. I look forward to sitting down at my computer to write to others.	1	2	3	4	(5)
5. Communicating through a computer never makes me anxious.	1	2	3	(4)	5



Knowledge of CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to estimate your Knowledge of Computer Mediated Synchronous Communication (CMSC).	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; Undecided	Mostly true of me	Very true of me
1.I am very knowledgeable about how to communicate through computers	1	2	3	4	5
2. I am never at a loss for something to say in CMSC.	1	2	3	4	5
3. I am very familiar with how to communicate through video conferencing, audio conferencing, instant messaging and the internet.	1	2	3	4	5
4. I always seem to know how to say things the way I mean them using CMSC.	1	2	3	4	5
5. When communicating with someone through a computer, I know how to adapt my message to the medium.	1	2	3	4	5

Skills that are relevant to CMSC *(e.g. video conferencing, audio conferencing & instant messaging)*

Kindly encircle the most relevant option for each of the following statements to rate your Skills that are relevant to Computer Mediated Synchronous Communication (CMSC).	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; Undecided	Mostly true of me	Very true of me
1. I manage the give and take of CMSC interactions skillfully.	1	2	3	4	5
2. I can show compassion and empathy through the way that I write messages (e.g. instant messaging)	1	2	3	4	5
3. I am very articulate and vivid in my CMSC messages. (e.g. video conferencing , audio conferencing, instant messaging)	1	2	3	4	5
4. I am skillful at revealing composure and self-confidence in my CMSC interactions.	1	2	3	4	5
5. I have no trouble choosing which medium (i.e., computer, phone, face-to-face) to use to communicate, given a particular situation.	1	2	3	4	5

Satisfaction in using CMSC *(e.g. video conferencing, audio conferencing & instant messaging)* **for Group Decision Making**

Kindly encircle the most relevant option for each of the following statements to explain your satisfaction in using Computer Mediated Synchronous Communication (CMSC) for Group Decision Making.	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; Undecided	Mostly true of me	Very true of me
1. The CMSC is efficient and employing the best way in helping me & my colleagues to work on the decision making task.	1	2	3	4	5
2. The other participant shows that they have a good understanding of what I say during the decision making activities using CMSC.	1	2	3	4	5
3. I am able to identify the outcome of the decision making task with others using the CMSC mode.	1	2	3	4	5
4. I am satisfied with the identified outcomes of group decision making using CMSC.	1	2	3	4	5
5. The CMSC helps to communicate better in a group for a decision making task.	1	2	3	4	5
6. I feel that that I have an equal contribution in group decision making with others using CMSC.	1	2	3	4	5
7. The CMSC enable to being cohesive in decision making task in a group.	1	2	3	4	5
8. I am satisfy with the decision making process by using CMSC at my workplace.	1	2	3	4	5
9. There's a smooth communication by using the CMSC in group decision making process.	1	2	3	4	5
10. I feel that the CMSC is necessary in group decision making activities.	1	2	3	4	5

Thank you for your most valuable participation.

APPENDIX C

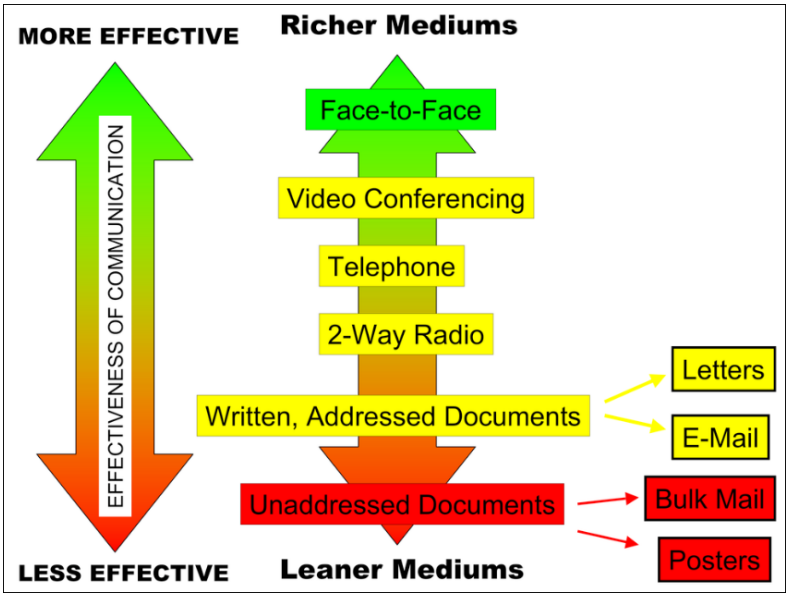
Sample size determination table

Table for determining needed size S of a randomly chosen sample from a given finite population of N cases such that the sample proportion p will be within ± .05 of the population proportion P with a 95 percent level of confidence.[1]

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note : *N* is population size and *S* is sample size.

[1] Source: Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30, 607-610.

APPENDIX D

Explanatory diagram for Media Richness Theory