Critical Success Determinants of Client-Server Hardware System Adoption: Malaysian SME Businesses Context

Mohd Amy Azhar Mohd Harif
Universiti Utara Malaysia

Markoz Koay Aik Hoe*
Universiti Utara Malaysia

ABSTRACT

Client-server hardware system (C-SHS) is a key enabler for business performance and competitive advantage for small and medium enterprises (SMEs). However, there is no specific research conducted on the critical success determinants (CSD) of C-SHS adoption in SMEs, particularly in Malaysia. This research filled this gap. A preliminary theoretical framework based on literature and integration of the Technology Acceptance Model, the Diffusion of Innovation theory, and the Technology, Organization, and Environment framework, was developed. This research employs qualitative methodology using convergent interview, snowballing sampling and thematic data analysis techniques, to explore and confirm these determinants. This research confirms 16 CSD of C-SHS adoption in SMEs, that are: relative advantage, compatibility system, complexity system, existing IT infrastructure, trialability, cost of purchase, top management support, end user IT skill, owner characteristics, resources availability/constraint, perceived usefulness, perceived ease of use, competitive pressure, government support, customer pressure, vendor competency & support. In addition, five new CSD, scalability system, security system, new initiative, brand loyalty, and green IT environment have been discovered, which contributions to the body of knowledge. A revised theoretical framework is derived to capture these new discoveries.

Keywords: client-server hardware system (C-SHS), critical success determinants (CSD), small and medium enterprises (SMEs), convergent interview.

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1. INTRODUCTION

1.1 Background of the Research

Technology is transforming every aspect of the business sector and changing the way how businesses are conducted. In essence, information and communication technology (ICT) is the lifeblood of this change, (Modimogale & Kroeze, 2011). ICT is a powerful tool that allows us to do amazing things and be incredibly productive. The usage of ICT has been widespread in economy activities (Torrent-Sellens & Díaz-Chao, 2010). To

survive in the highly intense business environment, every business or organization is constantly finding ways and means to enhance the operation process and efficiency. More and more businesses are leveraging on the advance of technology developments to improve the business performance and to gain some competitive advantages (Fisher & Kenny, 2000; Porter, 1980). Besides, organization also capitalizes on the technologies for the survival and success for their company (Lester & Tran, 2008). In short, organization that do not accept new technologies and do not adjust themselves to accept new technologies will fall behind (Davidoff & Kliener, 1991 cited in Murad &Thomson, 2011).

Today, the term ICT is so powerful and important in every business and aspect of our life in viewed of the wide range of benefits it offers (OECD, 2004). The Minister of Communication in Botswana described ICT as the "world's most important facility in the 21st century" in his speech in the World Communication day (Magang, 2001). Similarly, Saleh and Burgess (2009) have called out that ICT is a crucial tool in the increasingly competitive global economy. Indeed, ICT can do wonderful magic and surprises to the world, be it in business context and also in personal daily life. In the last few decades, ICT has changed the world and also the way how people think, how people act and react, and how people communicate in their daily lives.

One of the key technologies within ICT industry is the client-server hardware system (C-SHS). C-SHS is a computing architecture where it represents a form of distributed processing in which the system distributes information and computing task among computers that are linked by a network (Chengalur-Smith & Duchessi, 1999). According to Subramanian and Lacity (1997), client-server computing is a phenomenon that is transforming the information system (IS) industry. One of the primary reason is C-SHS allow organization to respond more rapidly because it is able to create and disseminate information which is then distributed to the desktop of individuals (Kavan, O'Hara, Patterson & Bostrom, 1999). In recent years, with the continuing development and advancement of the technologies, the client-server computing system is gaining popularity and has been very critical in the world of IT and also in the world of business. C-SHS is an appropriate technology in today's rapidly changing environment (Kavan et al., 1999) and is an indispensable tool for SMEs to compete and survive in the playing field. In the context of SME's business and at least for now, client-server computing is still a valid and feasible technology over the emerging cloud computing which is still in the infancy stages. C-SHS for SME's business still relatively important to develop the business and to gain the competitive edge in the marketplace.

The global statistic has shown that SME's business contributes substantially to the nation's income, output and employment. In the context of SME's business in Malaysia, there are three (3) key challenges and barriers with respect to the continuous growth and competitiveness sustainability. These challenges are as follows;

i. Low ICT adoption rate in Malaysia SME's business.
From the past researches and surveys, the ICT adoption rate in the Malaysia SME's business is relatively low (Alam & Ahsan, 2007; Kogilah, Santhapparaj, Eze, 2008; Salleh & Burgess, 2009). It is only 30% whereas it is 80% in Europe and America

(Saleh & Burgess, 2009). Another statistics based on the SMEICT Survey has demonstrated that 70% of the SME's business in Malaysia do not have a website. Another survey conducted by ACCM, shows that 72% of SMEs in Malaysia are not ready for e-commerce and that implied majority of Malaysian SMEs have not embrace ICT, in particular the C-SHS. The ability of SMEs to survive in an increasingly competitive global environment is largely predicated on their capability to leverage information as a resource (Mutula & Van Brakel, 2006). However, the underutilization of ICT applications in Malaysia SME's business results in a shortage of adequate and reliable information. Therefore, low ICT adoption rate remains a significant problem and challenge to SME's business in Malaysia.

ii. Low Labor Productivity in Malaysia SME's business.
The Malaysia SMEs labor productivity, as measured by real GDP per worker, is far below other countries such as Singapore, Japan, Korea and those countries in Europe and America. It is also noticed that US firms are among the highest in labor productivity. One of the explanations for this is linked to a high usage of ICT (Lucchetti & Sterlacchini, 2004; Sadun & Reenen, 2005). Extensive studies have been carried out to determine and discuss the relationship between ICT and productivity. The findings from these studies have shown a strong positive relationship between high labor productivity and the usage of IT (Doo & Sohn, 2008; Esselaar, Stork, Ndiwalana & Deen-Swarray, 2007; Ianmmarino, Jona-Lasinio & Mantegazza, 2004; Onu, Olabode & Fakunmojo, 2014).

Low productivity in Malaysia SME's business brings negative impacts in regards to their competitiveness in the global business environment and ultimately this will have negative implications to the growth of the economy in the country. As such, low labor productivity is a critical problem and challenge faced by SME's business in Malaysia.

iii. Shortcoming of Malaysia SME's contribution to the country economy.
In Malaysia, SME's business account for the large proportion of businesses where it represents 97.3% of establishments. Therefore, performance of SME' business greatly makes a significant difference in the Malaysia economy. The SME's business contributions to the country economy can be assessed based on three (3) key parameters that are, their share of contribution to gross domestic product (GDP), employment, and export activities. The performance of these three (3) parameters is summarized in Table 1.1.

These gaps have been acknowledged by the Malaysian government and therefore the Malaysian government has come out with the SME Masterplan from the year 2012 until 2020. The aim of this master plan is to create a business ecosystem for SMEs which will support towards achieving the high-income economy by 2020. Under this master plan, the contribution of SME's business towards nation GDP, employments and export are expected to be 41%, 62%, and 25% respectively by 2020. To achieve these targets, obviously there is a need for SME's business to take a drastic change to improve their business operational process and efficiency and be more competitive in the international marketplace. Leveraging on the use of ICT is one of the promising solutions.

Table 1.1

Gaps of performance in SME's business in Malaysia

Gaps of Performance in SMEs Malaysia	
1. Contribution to GDP	● Approximately 33% compared to 39% (middle-income countries) and 51% (high-incoming countries).
2. Contribution to employment	● Approximately 57% compared to 97.2% (Indonesia), 90% (Korea), 70% (Singapore), 82% (Thailand and China).
3. Contribution to export activities	● Approximately 15%, the lowest in the region.

Source: developed for this research

1.2 Research Problem

Also, as discussed in previous sections, ICT particularly the C-SHS plays a vital role to SME's business. A lot of studies have documented and reported the significance of the contribution and importance of C-SHS to SME's business especially in improving the efficiency of operation process and in enhancing business competitiveness. In that context, C-SHS is deemed as one of the key components in the success of SME's business in Malaysia. However, despite the importance of C-SHS to SME's business, there is only handful of studies, if not none, had been conducted specifically on the C-SHS itself and also in relation to Malaysia SME's business per se. Very little is understood about CSD of adoption of C-SHS in SME's business in Malaysia (Hashim, 2007). Moreover, what and how these CSD influence the Malaysia SME's business owner in adoption of C-SHS also remains a big gap to be filled. All in all, more works still need to be done, to be researched, explored, discovered and understood in this research topic. Therefore, this is the research issue that to be the main focus in this research.

By identifying the CSD of the adoption of C-SHS, the owners or top management of SME's business in Malaysia will be better supported and better prepared to adopt and leverage the technology rapidly to enhance the competitiveness and compete in the global arena. In alignment to these thoughts, this research is guided by the research problem statement as follows: How and why to establish the CSD of the adoption of C-SHS in Malaysia SME's business?

2. LITERATURE REVIEW

2.1 Underpinning Theory

This research is underpinned by three (3) prominent theories and models considered to be the most relevant to the research of technology adoption topics are, i) Technology

Acceptance Model (TAM), ii) Diffusion of Innovation Theory (DOI), and iii) Technology, Organization, and Environment framework (TOE). TAM explains and predicts systems use based on six (6) key constructs or characteristics of innovation, notably perceived usefulness, perceived ease of use, external variables, attitude towards using the system, behavioral intention to use, and actual system uses. Second underpinning theory, DOI which developed by Everett E. Rogers in 1960s, is another popular and widely used theory for ICT research in the investigation of the behavior of users in adopting new technological innovation (Karahanna, Straub & Chervany, 1999; Tan, Chong, Lin & Eze, 2009). Literatures have provided sufficient evidence that DOI is a valid model towards investigating new technological adoption and diffusion in different sectors of economy, including SME's business (Tan et al, 2009). Rogers (1983) proposed five (5) important perceived characteristics of innovation used to explain the users' adoption and decision-making process. These five (5) characteristics are relative advantage, compatibility, complexity, trialability and observability. In the context of C-SHS in this research, these five (5) characteristics are very much relevant. Therefore, the full DOI theory is used in building a preliminary theoretical framework for this research. The third underpinning theory, which is TOE framework, provides a useful analytical framework that can be used for studying the adoption and assimilation of different types of IT innovation (Oliveira & Martins, 2011). TOE identifies three (3) important and inter-related aspects of an enterprise's context that influence the technological adoption: technology context, organization context, and environment context.

2.2 Synthesization of Literature Review

Based on the 34 selected articles from the literatures around the globe, and after the synthesization, a total of 17 CSD of C-SHS adoption in SME's business have been identified as shown in Table 2.1.

For the purpose of this research, all the 17 CSD of C-SHS adoption in SME's business as displayed in Table 2.1 are categorized into three (3) main aspects according to the TOE framework. As a consequent of this categorization, a preliminary theoretical framework for this research is developed as shown in Figure 2.2.

Table 2.1
Synthesization of literature on the CSD of C-SHS adoption in SME businesses

CSD of C-SHS Adoption in SMEs Businesses	1 Poorani et al (2013).	2 Abdullah, Shamsuddin, Wahab & Hamid (2012).	3 Ghobakhloo, Sabouri, Tang, & Zulkifli (2011).	4 Chee, Phua, Adeline, Siti & Cheng (2011).	5 Murad & Thomson (2011).	6 Chong, Ooi, Lin & Tang (2009)	7 Tan, Chong, Lin & Eze (2009).	8 Saleh & Burgess (2009).	9 Alam & Mohammad Noor (2009).	10 Hashim (2007).	11 Ramayah, Lim & Sulaiman (2006).	12 Hussein & Noor (2005).	13 Ezer & Kofi (2014).	14 Mohammed, Almsafir & Alnaser (2013).	15 Ramdani, Chevers & Williams (2013).	16 Irefin, Abdul-Azeez & Tijani (2012).	17 Kenneth, Rebecca & Ayodo (2012).	18 Hani & Maha (2012).	19 Hameed & Counsell (2012).	20 Lee & Wu (2012).	21 Fong (2011).	22 Chinyao, Yahsueh & Mingchang (2011).	23 Knowledge & Lorraine (2011).	24 Tran & Hoang (2011).	25 Ratanapoophun & Lee (2011).	26 Azam & Quaddus (2009).	27 Mpofu, Milne & Watkins-Mathys (2009).	28 Nguyen (2009).	29 Iyanda & Ojo (2008).	30 Chong (2006).	31 Roberts, Steel & Toleman (2006).	32 Chen (2004).	33 Windrum & Berranger (2002).	34 Kendall et al (2001).
1 Top Management Support			✔								✔	✔	✔	✔	✔	✔	✔	✔				✔	✔		✔		✔	✔					✔	
2 Relative Advantage	✔		✔			✔		✔	✔		✔		✔	✔					✔			✔			✔					✔	✔	✔		✔
3 Resources Availability/Constraint			✔				✔									✔	✔				✔		✔	✔	✔		✔						✔	
4 Owner Characteristics		✔	✔	✔														✔					✔	✔	✔		✔	✔			✔			
5 Competitive Pressure			✔		✔									✔		✔		✔				✔		✔	✔				✔	✔				
6 End User IT Skill		✔	✔				✔	✔	✔											✔				✔	✔			✔					✔	
7 IT System Compatibility			✔				✔			✔			✔			✔								✔	✔						✔			✔
8 Government Support		✔	✔						✔							✔			✔					✔									✔	
9 System Complexity			✔				✔			✔		✔				✔									✔								✔	
10 Observability	✔						✔			✔		✔				✔									✔				✔					
11 Vendors Competency & Support			✔										✔							✔				✔				✔					✔	
12 Existing IT Infrastructure			✔								✔		✔			✔	✔											✔						
13 Customer Pressure			✔		✔														✔					✔	✔				✔					
14 Trialability	✔												✔		✔															✔		✔		✔
15 Cost of purchase			✔					✔								✔		✔		✔														
16 Perceived Usefulness			✔	✔																														
17 Perceived Ease of Use			✔	✔																														

Source: developed for this research

Figure 2.2
Preliminary theoretical framework developed for this research
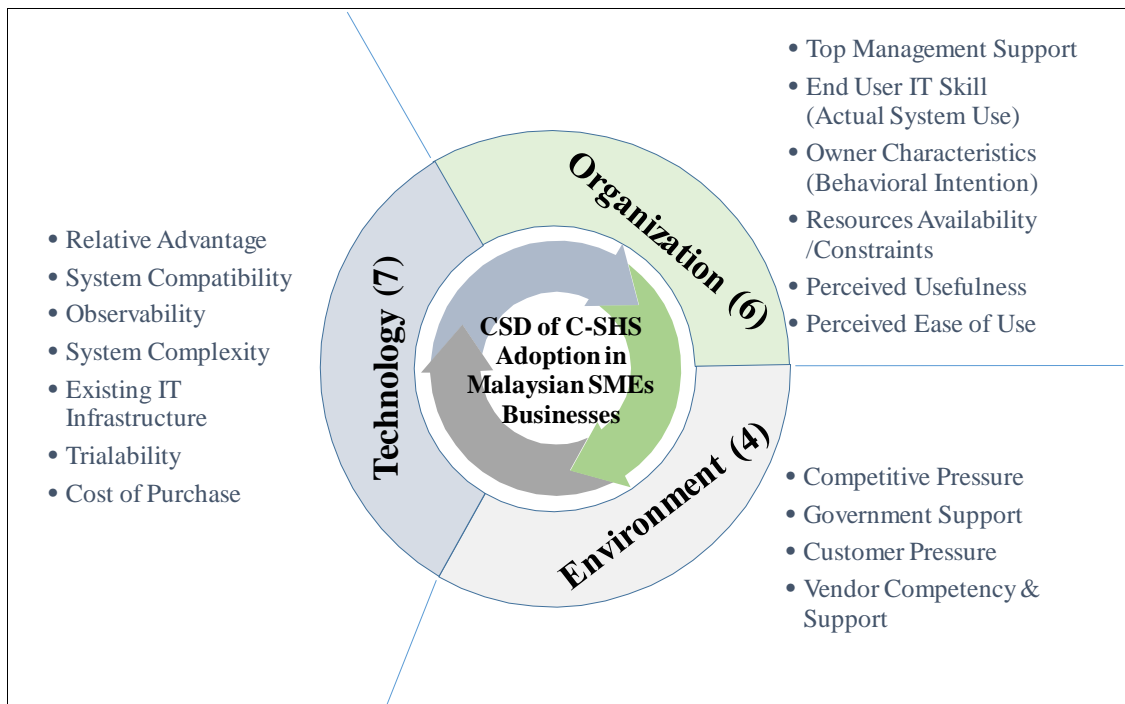
Source: developed for this research

With reference to Figure 2.2 above, three (3) primary research issues for this research are derived as below;

What are the technological CSD of C-SHS adoption in Malaysian SME's businesses?

What are the organizational CSD of C-SHS adoption in Malaysian SME's businesses?

What are the environmental CSD of C-SHS adoption in Malaysian SME's businesses?

3. METHODOLOGY

3.1 Qualitative Approach

There are two (2) reasons why qualitative research is appropriate for this research. The first reason is associated to the objective of this research.   The objective of this research is to explore and provide a deeper insight and understanding into a very little-researched area of what determine the adoption of C-SHS in SME's business in Malaysia and how. According to Robson (2002), an exploratory research employs an open and flexible approach in order to find out "what is happening; to seek new insights; to ask questions and to access phenomena in a new light".   In aligning to this research objective, qualitative approach is a more suitable type of research against quantitative research (Mohd Harif, 2002). In the same note, Hair, Bush and Ortinau

(2009), also suggested that qualitative approach is best for gathering as much information as possible in this very limited research topic.

The second reason is the type of information needed by this research. The depth and detail of qualitative data is required to understand complex phenomena by immersing into the subject matter (Denzin & Lincoln, 2005; Horn, 2009; Silverman, 2005). This view is also supported by Tran & Hoang (2011) as saying qualitative method enables researcher to study individual or organizational behaviors, the phenomena within their environments and in revealing rich and complex processes. Therefore, to fully understand the complex process of adoption of C-SHS in SME's business, qualitative method was deployed in this research.

## 3.2 Convergent Interview Technique for Data Collection

This research employed convergent interview technique for data collection. Convergent interview is a type of in-depth interview procedure characterized by a structured process and unstructured content (Dick, 2012). Convergent interview has the ability to refine the contents and the process of the interview and zoom in on a broad research issue (Rao & Perry, 2003). As such, convergent interview is considered a more suitable data collection technique for this research, and thus it was chosen. Convergent interview technique is defined as a tool used to enrich the information in the research area, that is as 'an interactive interviewing technique for collecting, analyzing, and interpreting relatively large amounts of interview data in less researched and established areas of study' (Riege & Nair, 2004). Convergent interview has emerged as a qualitative technique that attempts to address research topics that lack theoretical underpinning (Dick, 1990). Likewise, also commented by Attwater (2005), convergent interview is becoming popular in qualitative research as it provides a valid, reliable and rigorous process of data collection. Convergent interview has been described as "A way of collecting qualitative information about people's attitudes and beliefs through the use of interviews" (Dick, 1990).

Convergent interview adopts a method of using semi-structured interview questions. In other words, convergent interview combines some of the key advantages of both unstructured and structured interviews approach (Dick, 1998). The interviewer develops some interpretation of the data, which will then be used to refine and focus the content and process of subsequent interview. This process is undertaken after each interview as illustrated in Figure 3.1 (Mohd Harif, 2002).

The process of data collection and data analysis is iterative and on-going until all identified participants are interviewed. As a consequence of this iterative and on-going process, convergent interview technique allows the refinement of both questions and responses over a series of interviews or "successive approximants" (Dick 1990; Woodward, 1997, cited in Mohd Harif, 2002). These approximants occur because each interview is regarded as a complete research process of design, data collection, data analysis and data interpretation, and back to redesign (Dick, 1990).   At the end of the interview process, the result is the research findings.

Figure 3.1
The convergent interview approach
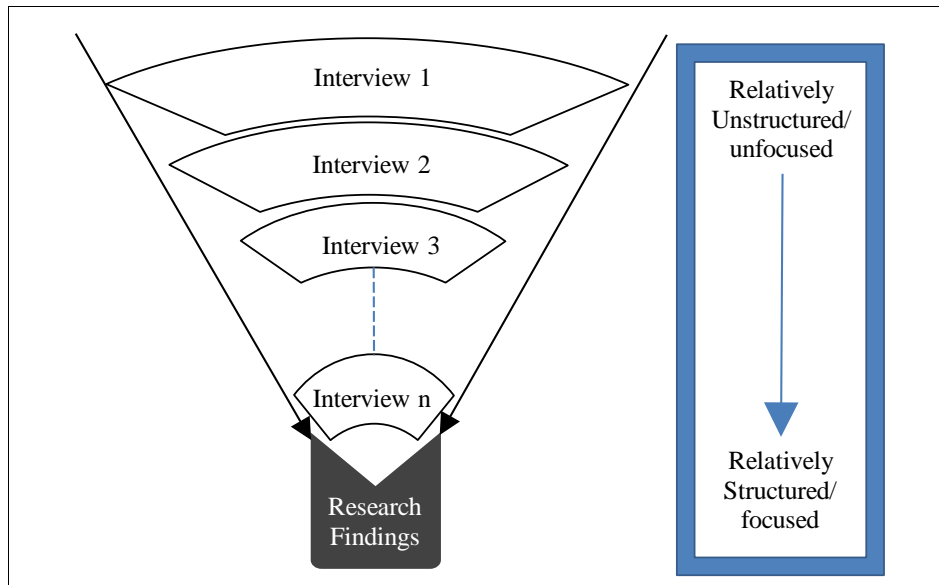
Source: modified based on Woodward (1997) for this research

3.3 Research Design

Sampling technique
There are multiple techniques available for sampling. Palinkas, Horwitz, Hoagwood, Green, Wisdom and Duan (2013) commented that purposive sampling is one of the sampling strategies that is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest. On the same thought, according to Patton (1990), information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research, thus the term purposeful sampling.

In this qualitative research, the goal is to explore, discover and gain a greater depth of understanding of the purchase decision of C-SHS in Malaysia SME's business. To achieve this goal, the information was obtained from the subject matter expert of ICT-related industry and the SME's business owners. This implied that the first sample in this research was carefully selected with purpose. Therefore, purposive sampling strategy was deployed in this research. In addition to the purposive sampling, this research also used the snowballing sampling technique which is also known as "chain sampling". Combining these two (2) sampling techniques, resulted in a technique known as purposive-snowballing technique which is the technique deployed in this research.

The advantage of snowball sampling is that one informant refers the researcher to another, so that the researcher has a good introduction for the next interview. A disadvantage is that the variation in the sample may be limited because it consists of respondents who belong to the networks of the index cases. To overcome this

disadvantage, it is important to have at least two different additional entrances in the community. In this research, the addition of more subsequent respondents were based on the referrals from the first and the previous respondents whom thinks that these referrals have the relevant knowledge and are potentially able to participate or contribute in this research. Most of the referrals were the SME's business owners based in Malaysia.

Sampling size

Unlike quantitative research, there are no specific rules for sample size in qualitative research (Patton, 1990). The determination of sample size in qualitative is based on what you want to know, the purpose of the research, what is at stake, what will be useful, what will have credibility, and what can be done with available time and resources (Patton, 1990). Nevertheless, there are at least two (2) aspects to be considered – *saturation* or redundancy (Lincoln & Guba, 1985, cited in Patton, 1990) and *variation representation within the target population* (Nastasi, 2004). Representative aspect has already been discussed in the paragraph just before this. In qualitative research, the emphasis is on saturation or obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired (Miles & Huberman, 1994). Dick (1990) argues that sample size is "data-driven" whereby sample size must be sufficiently large from which to derive a conclusion and usually it should contain at least twelve (12) interviewees before saturation occurs. However, on the other hand, Riege and Nair (1995) suggest that it is possible for stability to occur with less than twelve (12) interviews.

The sampling size for this research was built on the principle of saturation. In other words, obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired (Miles & Huberman, 1994). Adopting the principle of snowballing, this research continued to add more respondents until a saturation or a stable pattern of agreement or disagreement on the determinants was achieved.

Research instrument

The research instrument for this research is the convergent interview with a set of pre-designed semi-structured interview questions. It contains seven (7) open-ended questions. Question 1 to 2 were the opening questions where the questions were broad and general in nature. Question 3 to 5 were the probing questions. These probing questions were specific to generate a convergence view on the determinant of purchase decision of C-SHS in Malaysia SME's business. Question 6 which was to ask the interviewer any questions should be asked in regards to this research. Lastly, Question 7 was requesting for referral from the respondent to participate in this research.

4. DATA ANALYSIS

4.1 Results & Findings

This research adopted the thematic approach for data analysis. According to Boyatzis (1998) and Roulston (2001), thematic approach is one of the widely-used techniques in qualitative data analysis. Thematic analysis is a technique in identifying, analyzing and

reporting patterns (themes) within the data collected from the interview (Braun & Clarke, 2006). It minimally organizes and describes your data set in (rich) detail.

Based on the 17 interviews conducted, all the respondents have given their views and inputs with regards to the CSD of C-SHS *adoption* in Malaysia SME's business. From the thematic analysis process, all the consolidated initials codes can be grouped into eight (8) *main themes.* Table 4.1 below summarized each of the CSD results with respect to the preliminary theoretical framework of this research.

Table 4.1
Summary of data analysis on each of the CSD of C-SHS adoption with respect to the preliminary theoretical framework

#		CSD of C-SHS Adoption	1 EXP01	2 SVC01	3 SVC02	4 SVC03	5 MFG01	6 MFG02	7 MFG03	8 MFG04	9 MFG05	10 MFG06	11 SVC04	12 SVC05	13 MFG07	14 MFG08	15 SVC06	16 SVC07	17 SVC08	Frequency
1	Technological	Relative Advantage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	16
2		System Compatibility		✓					✓	✓	✓	✓	✓			✓	✓	✓	✓	10
3		System Complexity	✓	✓			✓		✓		✓	✓					✓	✓	✓	9
4		Existing IT Infrastructure	✓	✓		✓			✓			✓	✓	✓			✓	✓	✓	10
5		Trialability										✓	✓	✓	✓		✓	✓	✓	7
6		Cost of purchase	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
7		System Scalability*			✓					✓				✓			✓	✓	✓	6
8		System Security*			✓				✓					✓	✓	✓	✓	✓	✓	8
9	Organizational	Top Management Support			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	14
10		End User IT Skill	✓	✓	✓	✓				✓		✓		✓		✓	✓	✓	✓	10
11		Owner Characteristics	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓	✓	✓	✓	14
12		Resources Availability/Constraint	✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	14
13		Perceived Usefulness	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓		✓	✓	✓	14
14		Perceived Ease of Use			✓		✓			✓	✓	✓		✓	✓		✓	✓	✓	10
15	Environmental	Competitive Pressure	✓				✓			✓		✓	✓	✓			✓	✓	✓	9
16		Government Support	✓							✓		✓	✓	✓	✓	✓	✓	✓	✓	10
17		Customer Pressure	✓				✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	12
18		Vendors Competency & Support	✓	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	13
19		New Initiative*	✓								✓			✓	✓			✓	✓	6
20		Brand loyalty*	✓	✓										✓	✓	✓			✓	6
21		Green Environment*			✓	✓	✓							✓	✓	✓	✓	✓	✓	9

Legend: * new discovered determinant
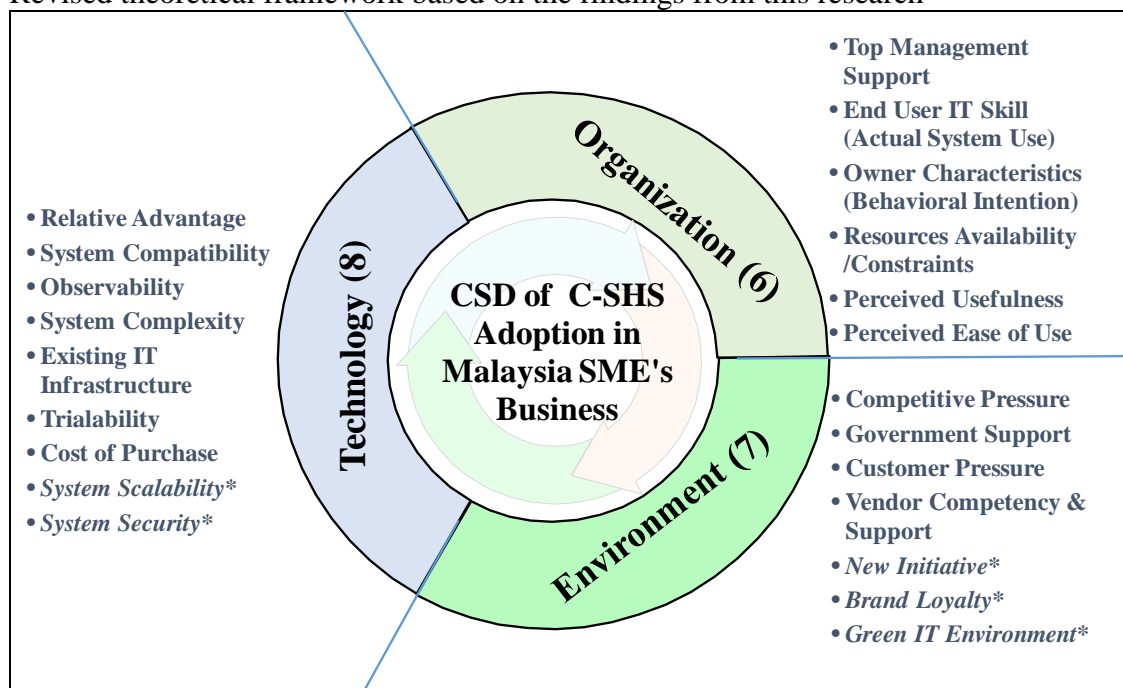
Source: developed for this research

In summary, total 21 CSD of C-SHS adoption (8-technological, 6-organizational, 7-environmental), inclusive of the five (5) new discoveries which denoted with a *, in Malaysia SME's business have been confirmed in this research. Therefore, this finding answered the three (3) research issues of this research.

5. CONCLUSION

5.1   Conclusion on the Research Problem

With the above finding, it is now able to address the research problem of this research, that is: *How and why to establish the CSD of C-SHS adoption in Malaysia SME's business?* Based on the findings, the preliminary theoretical framework has been amended accordingly with the findings from this research as shown in Figure 5.1 below.

Figure 5.1
Revised theoretical framework based on the findings from this research

• **Relative Advantage**
• **System Compatibility**
• **Observability**
• **System Complexity**
• **Existing IT Infrastructure**
• **Trialability**
• **Cost of Purchase**
• *System Scalability**
• *System Security**

Technology (8)

CSD of C-SHS Adoption in Malaysia SME's Business

Organization (6)

• **Top Management Support**
• **End User IT Skill (Actual System Use)**
• **Owner Characteristics (Behavioral Intention)**
• **Resources Availability /Constraints**
• **Perceived Usefulness**
• **Perceived Ease of Use**

Environment (7)

• **Competitive Pressure**
• **Government Support**
• **Customer Pressure**
• **Vendor Competency & Support**
• *New Initiative**
• *Brand Loyalty**
• *Green IT Environment**

Source: developed for this research

From the above revised theoretical framework, the following four (4) conclusions are drawn;

1.   The adoption of C-SHS can be successfully determined from the *technological* perspective in SME's business in Malaysia.

2.   The adoption of C-SHS can be successfully determined from the *organizational* perspective in SME's business in Malaysia.

3.   The adoption of C-SHS can be successfully determined from the *environmentally* perspective in SME's business in Malaysia.

4. There are five (5) newly discovered CSD of C-SHS adoption in Malaysian SME businesses.

In conclusion, this research has addressed the research problem and provided answers to the three (3) research issues of this research with the confirmation of 21 CSD of C-SHS adoption in Malaysian SME businesses.

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