

# The interplay of environmental factors in the acceptance of teleconsultation technology: A mixed methods study

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## Abstract

The aim of this study was to explore the influence of environmental factors namely the service need and facilitating conditions on the acceptance of teleconsultation technology in order to enrich the understanding of the teleconsultation technology acceptance behaviour among health care providers in health facilities. The study was conducted based on the concurrent triangulation design involving qualitative and quantitative study methods. These entailed interviews with key informants and questionnaires survey of health care providers who worked in the participating hospitals in Malaysia. Thematic analysis involving iterative coding was conducted on qualitative data. Scale reliability test and hypothesis testing procedures were performed on quantitative data. Subsequently, both data were merged, confirmed and interpreted. The results exhibited that the quantitative results were fairly consistent with the qualitative findings. Based on the responses from 20 key informants, the actual needs for the technology and subsistence of facilitating conditions were found to be important in explaining the way teleconsultation was utilized. Concurrently, based on the survey engaging 72 health care providers, the teleconsultation usage was statistically proven to be strongly associated with the environmental factors. The prominent insight gained from this study was that the teleconsultation acceptance was perceptibly driven by the health care environment factors. The study demonstrated the importance of actionable factors that have existed in telemedicine diffusion that constituted a significant role in the acceptance of the technology. In respect to future theoretical work, the findings can be considered to conceptualize a further comprehensive teleconsultation acceptance model.

*Keywords:* Teleconsultation, Telemedicine, Technology Acceptance, Facilitating Conditions, Health IT, Service Need.

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## 1. Introduction

Telemedicine is defined as the integration of information telecommunication, human-machine interface technologies and health technologies to deliver health care, to promote the health status of the people and to create health<sup>1</sup>. Teleconsultation is one of the main components of telemedicine. Teleconsultation comprises broad collection of information and communication technologies (ICT) and serviced as part of

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health care facilities to deliver and manage long-distance clinical health services especially at the underserved areas enabling the health providers to consult with specialists. Teleconsultation can be operated in either asynchronous mode by using simple store-and-forward public email or dedicated system or synchronous mode by utilizing video conferencing technology. In Malaysia, this includes consultation and referral over electronic platform engaging at least two health professionals communicating about patient management that takes place between primary and tertiary health care facilities respectively. The vision of the teleconsultation project was to link 38 Ministry of Health (MOH) hospitals across the country with teleconsultation network and services. The potential of the revived teleconsultation technology which commenced in early 2010 was gradually being realized and transpired.

Most previous telemedicine studies are limited to assessing telemedicine based on pilot projects or short-term outcomes and most of the studies are of low quality<sup>2</sup>. Besides, the limitations in some telemedicine related literatures are due to absence of data, weak in study designs and temporary point of views<sup>3</sup>. Therefore a more rigorous research is sought to be conducted by employing the relevant research approach. More effective explorations of users' satisfaction could play a vital role in moving telemedicine forward thus most importantly understanding what users need and why they need the technology can guide future projects and help explain patient outcome<sup>4</sup>. In telemedicine studies, satisfaction could be associated with acceptance, utilization, future adoption, perception of risks and benefits, effectiveness and efficiency<sup>5</sup>. In information system (IS) studies, system acceptance is an important element for the measurement of IS success<sup>6</sup>. Besides, user acceptance has been acknowledged as the key determinant to success or failure of any IS project<sup>7</sup> thus acceptance by clinicians can be one of the indicators of success in telehealth<sup>8</sup>. This research was derived from a motivation to encompass several issues concerning critical environment factors determining teleconsultation utilization behaviour among health care providers in Malaysia. At the national level, there is no in-depth study about teleconsultation acceptance and adoption. The ultimate aim of the study was to explore the influence of environmental factors namely the service need and facilitating conditions on the acceptance of teleconsultation technology from a mixed methods standpoint. The findings can be used to enrich the understanding of critical issues related to teleconsultation acceptance and adoption. Before any movement can be made to explore the factors that influence the way teleconsultation is used in the adopting hospitals, some important theoretical and contextual aspects were considered.

## **2. Background**

### *2.1. Telemedicine Project*

Most early telemedicine project failed to take off due to the unestablished infrastructure, unsophisticated technology, premature funding termination, and low acceptance<sup>9</sup>. Although substantial efforts have been invested in trials and experiments of telemedicine services yet only few applications have continued beyond the initiatives, research and development phase<sup>10-12</sup>. There are a number of examples around the globe where telemedicine has been introduced and rapidly abandoned, often because it has simply failed to be integrated into the circle of health and business environment<sup>13</sup>. A review of telemedicine implementation in developing countries has suggested that technical and environmental barriers could complicate telemedicine implementation in those nations<sup>14</sup>. We started with a review of relevant published works in the health care and telemedicine environment. Relevant models of established technology acceptance and diffusion theories were also considered. The review of both relevant

literatures and preliminary theories would allow the authors to frame the conceptual framework as guidance in selecting the relevant measures and analytical methods for the study.

### *2.2. Health Care and Telemedicine Environment Perspective*

Most of telemedicine studies are related to patients' acceptance of telemedicine, home telecare adoption, assessment of telemedicine technology and systematic reviews of effectiveness of telemedicine. Most telemedicine acceptance research efforts appeared to be predominantly associated with studies on how patients adopt the technology rather than on physicians' utilization of the technology in the hospital. There are various issues emerged when adopting different types of teleconsultation and most literatures have focused more on video conferencing aspects particularly in developed countries whereas email and other low-cost teleconsultation are still credibly used in developing nations<sup>14</sup>. Since there is no fixed and standard technology that enables telemedicine, it is not possible to postulate diffusion of telemedicine in general<sup>15</sup>. With regards to Malaysian context, the teleconsultation facility involves centralized application services and data repository operating over a nation-wide private telehealth MOH network. Since teleconsultations are held over MOH-owned network and all participating users are the MOH recruits, therefore the concerns of reimbursement (between adopting hospitals) and licensure are not applicable in this study. Findings of a review of telemedicine in developing countries have revealed that majority of the countries regard teleconsultation as a proxy to specialists' access thus the need for telemedicine is likely to be associated with the need for tele-specialists' consultation and second opinion<sup>14</sup>. Indeed, a lesson learned from telemedicine evaluation study exhibits that the need for telemedicine technology should be in tandem with service requirements<sup>16</sup>. While most literature focuses on the problems of underutilization and success-and-failure in sustaining the technology use, there is a general lack of empirical research in exploring the influence of pull of need for teleconsultation technology in telemedicine literatures. Even though the aspect has been mentioned in some telemedicine literatures but it is broadly based on opinion or a suggestion in the discussion part. As the main objective of teleconsultation is to provide health care and health related services to those in need, the actual need for teleconsultation can be conceptualized as any objective factor that is associated with the practicality of the technology in fulfilling the actual demand for the service. This would hugely rely on the rationale and motive for why the technology was originally put into operation. Therefore, we have identified and incorporated some environmental objectives to measure the service need. These include:

- a. To broaden specialist access as to obtain faster consent concerning directive on patient management as well as to get specialist advice<sup>16, 17</sup>.
- b. To reduce physical referrals from primary health centres to tertiary centres<sup>17, 18</sup>.
- c. To better utilize the resources such as the use of the ambulance, tertiary bed, travelling time and cost<sup>19, 20</sup>.
- d. To reduce mortality and morbidity especially in the emergency cases<sup>16</sup>.

### *2.3. Technology Acceptance Theoretical Perspective*

As most of prior health information technology (IT) studies concerning physicians' belief about using technology have focused on electronic health records (EHR)<sup>21</sup>, a limited number of frameworks have been employed to explain the diffusion and adoption of telemedicine technology at both individual and organizational levels. However, most telemedicine studies are not based on theoretical ground suggesting to theoretical development limitation. Nevertheless, a series of telemedicine quantitative adoption and acceptance published studies explaining how physicians' accept and adopt telemedicine have been conducted in health facilities in Hong Kong<sup>22-24</sup>. Those studies are mainly based on Technology

Acceptance Model (TAM) developed by Davis<sup>25</sup> and the fundamental of the studies are found to be confirmatory in nature emphasizing model validation. Although TAM was used fairly convincing in explaining physicians' acceptance and utilization of health IT, the actual barriers and facilitators to technology use were not covered, suggesting a more rigorous effort should be carried out to uncover specific, contextualized, and actionable constructs that may have existed in health IT diffusion<sup>21</sup>. Therefore we have identified some categories related to facilitating conditions from the health care environment to be further explored in this study. The facilitating conditions was also employed in Unified Theory of Acceptance and Use of Technology (UTAUT)<sup>26</sup>, Model of PC Utilization (MPCU)<sup>27</sup> and Theory of Interpersonal Behaviour (TIB)<sup>28</sup> thus this has supported the exploitation of facilitating conditions as one of the important aspects in teleconsultation technology utilization behaviour. Facilitating conditions was postulated in the study of telemedicine adoption on a national scale in Canada. However, the items selected for the use of questionnaire were claimed to be reasonably inadequate which has resulted in failure in testing the effect on the utilization<sup>29</sup>. Conversely Hu et al.<sup>22</sup> found that conditions such as proper training, technology access, and in-house technology expertise, were positively associated with behavioural intention to use telemedicine technology by physicians. Further, UTAUT has been tested in a study examining factors influencing health IT adoption in Thailand's community health centres and the study has confirmed the validity of facilitating conditions and the model itself in developing countries' health care setting<sup>30</sup>. In particular, our previous review of telemedicine implementation in developing countries has also asserted that lack of technical support, recurrent service and equipment failures, inadequacy of telecommunication infrastructure, absence of practice management guidelines, poor market promotion of technology and less support from relevant management could cause telemedicine technology remain unused or underutilized in those regions<sup>14</sup>.

In turn, these backgrounds give a useful overview of this study thus are fundamental in justifying the topics of concern that were then used to ask both the key informants in the interviews and survey respondents participated in this study. Therefore, we situated two important aspects of teleconsultation acceptance to be further explored using mixed methods approach. Figure 1 presents the conceptual framework addressing factors of environmental context derived from relevant prior research and health care environment that we believed may have had significant associations with the teleconsultation technology acceptance.

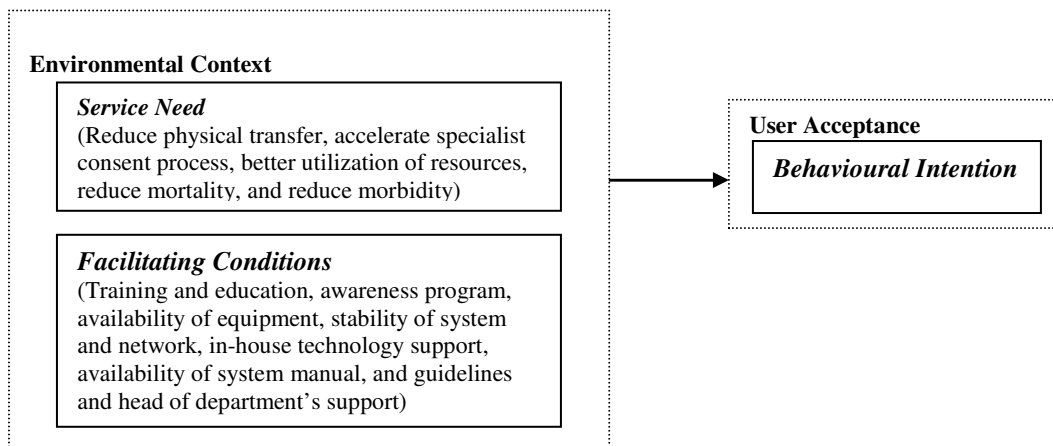


Fig. 1. Conceptual Framework

### 3. Method

While much quantitative research is confirmatory (explanatory), engrossing theory verification and much qualitative research is exploratory, aiming at theory generation, the combination of these two “enables the researcher to simultaneously answer confirmatory and exploratory questions, and therefore verify and generate theory in the same study”<sup>31</sup>. In particular, the research methodology of this study was based on concurrent triangulation design<sup>32</sup>, in which the qualitative and quantitative data were concurrently collected and analysed separately concerning the same phenomenon and then the results were used to validate, confirm and corroborate the qualitative result with the quantitative result. The rationale for this approach was that quantitative data and subsequent appropriate analysis would provide a strong understanding to the overall interpretation of the qualitative results<sup>32</sup>. Further, the triangulation model applying more than one method to find solution related to the similar aspects can enhance the credibility of the research findings<sup>32,33</sup>.

#### 3.1. Sampling and Data Collection Procedures

The data collection procedures for both methods took place concurrently between March 2010 and July 2010 involving 11 participating MOH hospitals. Ethics approval and consents were firstly obtained before proceeding to data collection since the research involved study of human behaviour in health care environment. Research ethics were approved by Institute for Health Behavioural Research (IHBR) MOH Malaysia, MOH Research and Ethics Committee (MREC) Malaysia and Economic Planning Unit (EPU) Malaysia. Of 38 participating hospitals involved in the MOH teleconsultation project, only 11 hospitals involved in this study since the majority of other hospitals were still in midst of technical arrangement for the completion of system installation with the relevant vendor. A key-informant approach was used for interview as it was regarded advantageous to gather information effectively, to gain access to unobtainable information and to gain specific understanding and interpretation of the cultural information<sup>34</sup>. The research instruments were sent to some relevant professionals, namely teleconsultation technology experts, medical practitioner and information system experts for reviewing. The questions were reviewed and revised accordingly to ensure acceptable validity and reliability of instruments before conducting the interviews and survey.

The purposive sampling was applied involving key informants to respond to qualitative investigation and health care providers to respond to quantitative survey. The participation was based on initial permission and individual voluntary basis. Initially, according to the participant contact list released by relevant MOH department, 30 participants were identified to participate in the interviews covering important criterion in the target population. As a result, a total of 20 participants comprised of users and champions of the technology agreed to take part in the qualitative interviews. On the other hand, we identified a target sample of 165 health providers from a target population who we felt qualified to participate in the survey involving 11 participating hospitals. Consequently, we received 72 valid questionnaires (response rate of 43.6%) which helped provide triangulation of the results.

#### 3.2. Data Analysis Procedures

The subsequent data analysis involved two data sets and we employed the general guidelines for analysing the concurrent mixed methods data proposed by Creswell and Clark<sup>32</sup>. Both data were analysed separately and then merged so that the interpretation and discussion can be made based on the overall results. As the interviews were recorded and most of the participants responded in English, the tapes were transcribed as soon as the first interview was completed. The transcripts were checked iteratively

against the audio tapes as to ensure accuracy in the transcription. The qualitative analysis was based on themes which involved a series of iterative coding. These were mainly facilitated by qualitative software namely QSR Nvivo 8. On the other hand, the objective of the survey questions was to measure the strength and direction of relationships between factors conceptualized in this study. Data from the survey were analysed using SPSS Version 17.0 for Windows.

#### 4. Result

The samples used in both qualitative and quantitative methods were drawn from the similar population to avoid systematic bias in the overall interpretation<sup>35</sup>. The findings reported in this study were based on the responses of the participants with the following profiles:

- i. Interviews (n=20): 15 users of the system (sender and receiver) accounted for 75% and 5 champions of the technology accounted for 25% of total participants.
- ii. Surveys (n=72): The questionnaire was distributed to only existing users of the technology and personnel who have attended teleconsultation training. This involved 43.1% medical officers, 25% of specialists and 31.9% of medical assistants and radiographers.

##### 4.1. Service Need

In Malaysia, the maldistribution of specialist services is not only seen in the rural but also in urban areas. Therefore the facilities incorporated in the teleconsultation service were addressed to fulfil many of these facets. In the phenomenon under study, the needs for teleconsultation were environmentally driven and accordingly, teleconsultation technology was initiated by MOH and the government of Malaysia on the basis for the betterment of patient management and resources distribution. The presentation of interview key findings for the service need is shown in Table 1. Indeed, teleconsultation was found acceptably feasible and has provided great assistance in both emergency and non-emergency settings.

The objective reason for the service was found to be the most significant factor in determining the adoption of teleconsultation in the context under study. For instance, one participant made this point very clear when he stated:

*“...the need for the service must be there; either it comes from the hospital’s management or doctors. So when the doctors have less need for the service, the service will not take off at the hospital...”*

Table 1. Service Need (Objective Reason for Teleconsultation Implementation)

Sub-themes	In terms of? (Categories)	Mode of cases? (Emergency / Non-Emergency)	Examples of responses
Fulfil demand for specialist access	Consent purpose	Especially in emergency cases	<i>"We need to have the consent from the specialists. Teleconsultation would help in delivering image and patient description to them so that the specialists can make quick decision about the patient"</i>
	Specialist advice	Both modes	
Better utilization of resources	Tertiary bed	Especially in emergency cases	<i>"With the proper usage of the system, image transfer together with proper description letter sent through the system, the medical officer at referral hospital can choose properly the best patient to occupy the bed in the tertiary hospital... which is normally very limited"</i>
	Ambulance	Especially in emergency cases	<i>"I can see the users really utilize teleconsultation whenever they need to send cases. No more ambulance as the mode of carrying report and film to tertiary hospital"</i>
	Travelling Cost and Time	Both modes	<i>"Most of all, the consultants now don't have to travel more. The doctors and consultants can communicate and do the exchange of information with each other. The consultant could advice the doctor from remote"</i>
Reduce mortality and morbidity	Save patient life	Especially in emergency cases	<i>"There was one case where patient died in the ambulance while being transferred to tertiary hospital and this happened when teleconsultation was not available. I am very sure teleconsultation could have avoided incident like this"</i>
	Value of life	Both modes	<i>"The most important thing is... it can reduce morbidity and mortality which you cannot put a value to it. Even though the implementation cost a lot of money"</i>
Reduce patient movement	Improve patient care management	Both modes	<i>"The patient can be treated at the primary hospital. All they need are procedures which can be given from distance. This will avoid the unnecessarily patient transfer, which create problem not only to the referral hospital but also to the relatives of the patient"</i>

#### 4.2. Facilitating Conditions

Facilitating conditions was defined in MPCU as "objectives factors in the environment that observers agree make an act easy to accomplish"<sup>27</sup> and according to UTAUT, facilitating conditions are supports from organizational and technical infrastructure to accommodate adoption activities<sup>26</sup>. The presence of facilitating conditions was significant in influencing teleconsultation acceptance but some of the facilitators could potentially transform into impediments if they failed to exist or sustained in the teleconsultation operation. The identified facilitating conditions and summary of responses are reported in Table 2.

Table 2. Summary of interview key findings of facilitating conditions

Sub-themes	Categories	Summary of Responses
Network and Infrastructure	Bandwidth	It is not satisfactorily to some referring hospitals. No standardization in bandwidth size among hospitals. However, most referral hospitals regard the bandwidth as adequate and this has led to encouraging usage.
Resources	Manpower	Staff turnover is considerably high especially in suburban and rural areas. Transfer of technology should be done before a trained staff left. A dedicated stand-by staff is needed for teleconsultation uninterrupted operation.
	Technical Support	Presence of champion and administrator could possibly lead to encouraging utilization in the hospital. However, a 24/7 helpdesk from the vendor side is also needed.
	System manual and guidelines	In terms of referral, similar guidelines were used in the current conventional practice. User manual is available in teleconsultation room to assist the users to use the system. However, a guideline is also needed on how to do simple system troubleshooting when technical difficulties arise.
	Equipment and Workstation	Hardware is under warranty so nothing much to worry since replacement can be done by the vendor within the agreed contract period.
Training programs and Awareness Program	Training program	Training program is found helpful and significant. However, standard training module is needed. Periodic training is not necessary but is still important to ensure utilization sustainability which can be done on a request basis.
	Awareness program	Most of the awareness programs were only done inside the teleconsultation existing community. Therefore more programs should be held to promote the benefits of teleconsultation to other potential adopters. Seminar and teleconsultation workshops should be done more frequently.
Role of Head of Department (HOD)	HOD influence	HOD influence could have the effect on staff training attendance, likelihood of teleconsultation utilization and motivation to use teleconsultation.

#### 4.3. Triangulation results

A questionnaire using a 7-point likert scale of 1 (Strongly Disagree) to 7 (Strongly Agree) with 4 as a mid-point score was employed to collect data from all categories addressed in this study and serviced as triangulation to the qualitative findings. The purpose of embedding quantitative data in this study was to allow a better understanding of the phenomenon in the context under study by exploring the attributes of the phenomenon as well as exhibiting the possible relationship between variables using numerical data and statistical analyses<sup>33</sup>. Cronbach's alpha ( $\alpha$ ) was used to measure the reliability of the instrument items<sup>36</sup>. Table 3 provides a summary of the reliability analysis. Consequently, the reliability of all measurement scales was above the recommended minimum level of 0.70 for social science research<sup>37-38</sup>. We used behavioural intention as a surrogate to actual utilization behaviour since behavioural intention is the best indicator of system usage<sup>39</sup> and often replaced with user's actual behaviour towards system use<sup>40</sup>. Further, as the data were collected during the stage when the new teleconsultation technology was recently implemented, it was hard to obtain the data pertaining to the actual system usage. Based on descriptive analysis, survey respondents reported considerable high levels of Service Need (SN), Facilitating Conditions (FC) and Behavioural Intention (BI).



Table 3. Reliability Analysis (n = 72)

Factor	Items	Cronbach's alpha ( $\alpha$ )	Overall mean score
SN	SN1 Reduce patient transfer (admission)	.813	6.303
	SN2 Obtain specialist consent in critical conditions		
	SN3 Save patients' life		
	SN4 Reduce patients' unmet need		
	SN5 Reduce travel time and cost		
FC	FC1 Training Program	.722	5.895
	FC2 Awareness Program		
	FC3 HOD Support		
	FC4 In-house Technology Support		
	FC5 Equipment and Workstation Access		
	FC6 System Manual and Guidelines		
	FC7 Network Stability		
BI	BI1 Use as often as needed	.854	6.287
	BI2 Use more when barriers do not exist		
	BI3 Use more in future		

The pair wise correlation was used to indicate the relationships between two or more variables, including the strength and direction<sup>41</sup>. Prior to calculating correlation coefficient, the assumption of normality was tested. Subsequently, the computation of Spearman's correlation coefficient ( $r_s$ ) was performed on the data as the data have violated the normality assumption<sup>41</sup>. The result is shown in Table 4.

Table 4. Correlation coefficients ( $r_s$ )

BI	Correlation Coefficient	1		
	Sig. (2-tailed)			
SN	Correlation Coefficient	.552**		
	Sig. (2-tailed)	.000		
FC	Correlation Coefficient	.550**	.562**	1
	Sig. (2-tailed)	.000	.000	
	N	72	72	72

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

Spearman's coefficient indicated the presence of a strong positive correlation between service need and behavioural intention,  $r_s = .552$ ,  $p < 0.01$ . According to Cohen<sup>42</sup>,  $r_s$  of .50 or larger represents a strong correlation. This signified that the higher the need for teleconsultation service, the higher the acceptance of teleconsultation technology among users. Likewise, Spearman's coefficient indicated that the correlation between facilitating conditions and behavioural intention was strong and positive,  $r_s = .550$ ,  $p < 0.01$ . This signified that the better the provision of facilitating conditions, the higher the acceptance of teleconsultation technology among users.

#### *4.4. Overall Result*

The results exhibited that the quantitative results were fairly consistent with the qualitative findings. The voices of participants were honoured and their significant responses were used to describe the subjective reality of human behaviour that confined in the work practice environment. Apparently, based on the interviews, the actual need for the technology and subsistence of facilitating conditions were found to be important in explaining the way teleconsultation was utilized. Concurrently, the use of quantitative results has visibly demonstrated the operationalisation of qualitative concept in some manner. The quantitative result has made a precise demonstration to confirm that teleconsultation technology acceptance was statistically proven to be strongly associated with the environmental factors.

### **5. Discussion**

Overall service need and facilitating conditions were found to be important aspects to be considered in both implementation of teleconsultation and acceptance of the technology. This study helped to identify issues that were rarely discussed in the prior research. As figured out from this study, objective need for technology has been an important aspect in determining the preliminary uptake of teleconsultation technology. Therefore, focus should be given on forming adequate need analysis of the technology to measure the actual demand for the teleconsultation technology in order to determine further project expansion. The subsistence of facilitating conditions has an important impact on the way teleconsultation is utilized in hospitals. Hence, there should be a proper technical plan to rectify related technological and managerial predicaments beforehand in the adopting hospitals. Adequate education and training on how to operate telemedicine equipment should not be overlooked. This is important not only to expose telemedicine capabilities to potential users but also to encourage telemedicine adoption into routine use. The results obtained from this study can guide the teleconsultation project implementer to improve the users' acceptance by improving the present facilitating conditions.

### **6. Limitation**

In general, this research presumes on the basis of exploratory and descriptive study applying mixed-methods approach. The study was aimed at exploring the phenomena of teleconsultation acceptance in Malaysia and developing an understanding concerning the important environment aspects constituting the phenomena. Therefore, analyses associated with the operationalisation of theory validation (confirmation) were omitted in this study as the aim of the analyses was primarily interpretive and the discussion remained at the concept level. Further, due to the limited sample size in the present study and also violation of normality assumption on the data, statistical analyses were only limited to descriptive and non parametric tests. The scope of the research was limited in several respects. The study revealed the identification and confirmation of environmental factors that potentially affect teleconsultation technology acceptance based on the voices and perspectives of the relevant informants. Therefore, results of a randomized controlled trial of intervention are not available from this study. The focus of the study was to address the importance of objective factors from the environment and examine the interplay with teleconsultation technology utilization behaviour. Hence, potential factors from other dimensions were not brought into the study.

## 7. Conclusion

This study helped to provide detail exploration of environmental factors namely service need and facilitating conditions and the interplay with teleconsultation utilization behaviour. The special contribution of this study was the use of mixed methods approach involving qualitative and quantitative methods in explaining and confirming the significance of those factors on the utilization behaviour of teleconsultation technology among health care providers. Further, it was also important to address that the uptake of the technology is not derived by the technological attributes in isolation. The importance of actionable factors that have existed in telemedicine diffusion that may constitute a significant role in the acceptance of the technology should not be overlooked. The prominent insight gained from this study was that the teleconsultation acceptance behaviour was perceptibly driven by the health care environment factors. The study demonstrated and confirmed the importance of actionable factors that have existed in telemedicine diffusion that constituted a significant role in the acceptance of the technology. In respect to theoretical development and future work, the findings can be considered to substantiate a further comprehensive teleconsultation acceptance model.

### Conflict of Interest:

I declare that there is no conflict of interest in the sense of the requirements for the manuscript and publication of the findings.

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