



**Faculty of Technology Management and Technopreneurship**



**THE MEDIATING EFFECT OF PATIENT SATISFACTION  
BETWEEN HEALTH CLINIC SERVICE QUALITY AND PATIENT  
LOYALTY**

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**THE MEDIATING EFFECT OF PATIENT SATISFACTION BETWEEN HEALTH  
CLINIC SERVICE QUALITY AND PATIENT LOYALTY**

**NUR SALSABILAH BINTI HAMDAN**

**A thesis submitted  
in fulfilment of the requirements for the degree of Master of Science  
in Technology Management**



**Faculty of Technology Management and Technopreneurship**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

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**2021**

## DECLARATION

I declare that this thesis entitled “The Mediating Effect of Patient Satisfaction Between Health Clinic Service Quality and Patient Loyalty” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

   
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## APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Master of Science in Technology Management.



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Date : .....

21 / 06 / 2021

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## DEDICATION

This thesis is dedicated to  
my family, especially to my beloved mother,

*Hjh. Norhayati binti Sabtu @ Shariff*

My father,

*Hj. Hamdan bin Manan*

My lovely husband,

*Muhammad Husaini bin Abdul Kader*

And my parents' in-law

*Abdul Kader bin Omar*

*اونيور سیتی تيمکني کل مليسيا ملاک*  
*Mazim binti Mawar*

thank you for your unconditional love and prayers.

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## ABSTRACT

Malaysia is coming close to developed status and stated that healthcare industry is a prominent industry with the capability to generate income. Nowadays, patients have freedom of choice in healthcare providers either public or private sector. The loyal of patients is considered as a key business success factor for healthcare provider especially for public health clinic that has the potential to contribute significantly to the country's economic transformation plan. Thus, this research chooses public health clinic at Melaka as a study because have the most favoured destination to patients for medical treatment. However, to achieve the target and remain relevant in the competitive healthcare provider, it is necessary to improve healthcare service quality model to attract more patients getting treatment. This research was carried out to identify the dimensions of healthcare service quality effecting patient satisfaction towards patient loyalty. A survey was conducted and collected 420 answers from respondents in 31 public health clinic at Melaka based upon stratified sampling and this research was fully conducted quantitatively. The modified model of service quality dimensions in healthcare context included infrastructural quality, procedural quality, interactional quality and personnel quality. The findings of Multiple Linear Regression (MLR) shown that infrastructural quality ( $\beta = 0.303$ ,  $p = 0.003$ ), procedural quality ( $\beta = 0.268$ ,  $p = 0.018$ ), and personnel quality ( $\beta = 0.450$ ,  $p = 0.000$ ) have significant effects on patient loyalty, and the most significant factor was personnel quality ( $\beta = 0.450$ ,  $p = 0.000$ ). However, interactional quality ( $\beta = 0.059$ ,  $p = 0.515$ ) was insignificant effect towards patient loyalty. Meanwhile, the finding of mediation analysis has indicated that patient satisfaction have partially mediate the relationship between the infrastructural quality on patient loyalty ( $\beta = 0.697$ ,  $SE = 0.086$ ,  $p < 0.00$ , 95% CI [0.528, 0.866]), procedural quality on patient loyalty ( $\beta = 0.761$ ,  $SE = 0.067$ ,  $p < 0.00$ , 95% CI [0.630, 0.892]) and personnel quality on patient loyalty ( $\beta = 0.710$ ,  $SE = 0.065$ ,  $p < 0.00$ , 95% CI [0.583, 0.838]). Whereas interactional quality on patient loyalty ( $\beta = 0.524$ ,  $SE = 0.087$ ,  $p < 0.00$ , 95% CI [0.354, 0.695]) showing patient satisfaction has fully mediated between these relationships. Therefore, this research has managed to produce a modified research model that has an impact on the research contribution. Furthermore, this research has filled the research objectives, other factor such as technical quality could be consider for suggestion in future research for its service delivery. As a result of this research, medical administrations are able to understand the needs of healthcare service in order to plan their marketing more strategically. Last but not least, it helps to enhance healthcare industry understanding healthcare service quality towards patient loyalty in healthcare context.

# **KESAN MEDIASI TERHADAP KEPUASAN PESAKIT DIANTARA KUALITI PERKHIDMATAN PENJAGAAN KESIHATAN DAN KESETIAAN PESAKIT**

## **ABSTRAK**

Malaysia semakin hampir mencapai kemajuan dan mengatakan bahawa industri penjagaan kesihatan adalah industri terkemuka dengan kemampuan untuk menjana pendapatan. Pada masa kini, pesakit mempunyai kebebasan untuk memilih penyediaan perkhidmatan kesihatan sama ada sektor awam atau swasta. Kesetiaan pesakit dianggap sebagai faktor kejayaan perniagaan utama bagi penyediaan perkhidmatan kesihatan terutama bagi klinik kesihatan awam yang berpotensi untuk memberi sumbangan besar dalam rancangan transformasi ekonomi negara. Oleh itu, penyelidikan ini memilih klinik kesihatan awam di Melaka sebagai kajian kerana mempunyai tujuan yang paling diminati oleh pesakit untuk mendapatkan rawatan perubatan. Namun, untuk mencapai sasaran dan kekal relevan dalam penyediaan perkhidmatan kesihatan yang kompetitif, ia perlu meningkatkan model kualiti perkhidmatan kesihatan untuk menarik lebih ramai pesakit untuk mendapatkan rawatan. Penyelidikan ini dilakukan untuk mengetahui dimensi kualiti perkhidmatan penjagaan kesihatan yang mempengaruhi kepuasan pesakit terhadap kesetiaan pesakit. Satu tinjauan telah dilakukan dan mengumpulkan 420 soal selidik daripada responden di 31 klinik kesihatan awam di Melaka berdasarkan pensampelan berstrata dan penyelidikan ini dilakukan secara kuantitatif. Model dimensi kualiti perkhidmatan yang dimodifikasi dalam konteks penjagaan kesihatan meliputi kualiti infrastruktur, kualiti prosedur, kualiti interaksi dan kualiti personel. Penemuan Multiple Linear Regression (MLR) menunjukkan bahawa kualiti infrastruktur ( $\beta = 0.303, p = 0.003$ ), kualiti prosedur ( $\beta = 0.268, p = 0.018$ ), dan kualiti personel ( $\beta = 0.450, p = 0.000$ ) mempunyai kesan yang signifikan pada kesetiaan pesakit, dan faktor yang paling signifikan adalah kualiti personel ( $\beta = 0.450, p = 0.000$ ). Walau bagaimanapun, kualiti interaksi ( $\beta = 0,059, p = 0,515$ ) tidak signifikan terhadap kesetiaan pesakit. Sementara itu, penemuan analisis mediasi telah menunjukkan bahawa kepuasan pesakit sebahagiannya memediasi hubungan antara kualiti infrastruktur terhadap kesetiaan pasien ( $\beta = 0.697, SE = 0.086, p < 0.00, 95\% CI [0.528, 0.866]$ ), kualiti prosedur terhadap kesetiaan pesakit ( $\beta = 0.761, SE = 0.067, p < 0.00, 95\% CI [0.630, 0.892]$ ) dan kualiti kakitangan terhadap kesetiaan pesakit ( $\beta = 0.710, SE = 0.065, p < 0.00, 95\% CI [0.583, 0.838]$ ). Manakala kualiti interaksi terhadap kesetiaan pesakit ( $\beta = 0,524, SE = 0,087, p < 0,00, 95\% CI [0,354, 0,695]$ ) menunjukkan kepuasan pesakit telah menjadi mediasi sepenuhnya antara hubungan ini. Oleh itu, penyelidikan ini berjaya menghasilkan model kajian yang diubah suai yang memberi kesan terhadap sumbangan penyelidikan. Seterusnya, penyelidikan ini telah memenuhi objektif kajian, faktor lain seperti kualiti teknikal dapat dipertimbangkan untuk dicadangkan dalam kajian masa hadapan untuk penyampaian perkhidmatan. Hasil daripada kajian ini, pentadbiran perubatan dapat memahami keperluan perkhidmatan kesihatan agar dapat merancang pemasaran mereka dengan lebih strategik. Akhir sekali, kajian ini dapat membantu meningkatkan industri penjagaan kesihatan memahami kualiti perkhidmatan penjagaan kesihatan terhadap kesetiaan pesakit dalam konteks penjagaan kesihatan.

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## LIST OF ABBREVIATIONS

DV	- Dependent Variable
EFA	- Explanatory Factor Analysis
EM	- Expectation Maximisation
GDP	- Gross Domestic Product
HEALTHQUAL	- Health Quality
IEEE	- Institute of Electrical and Electronics Engineers
IMF	- International Monetary Fund
IV	- Independent Variable
KMO – MSA	- Kaiser Meyer Olkin - Measure of Sampling Adequacy
LRA	- Linear Regression Analysis
MCAR	- Missing Completely At Random
MHTC	- Malaysia Healthcare Travel Council
MLR	- Multiple Linear Regression
MV	- Mediator Variable
MYR	- Malaysia Ringgit
N	- Population Size
NKEA	- National Key Economic Areas
PAF	- Principal Axis Factoring
PhD	- Doctor of Philosophy
PMR	- Penilaian Menengah Rendah
PRISMA	- Preferred Reporting Items for Systematic review and Meta Analyses
R&D	- Research and Development
SD	- Standard Deviation
SERVQUAL	- Service Quality
SERVPERF	- Service Performance
SPM	- Sijil Pelajaran Malaysia
SPSS	- Statistical Package for The Social Sciences
SRP	- Sijil Rendah Pelajaran
STPM	- Sijil Tinggi Persekolahan Malaysia
UNESCO	- UN Educational, Scientific and Cultural Organization
VIF	- Variance Inflation Factor
WOM	- Word of Mouth

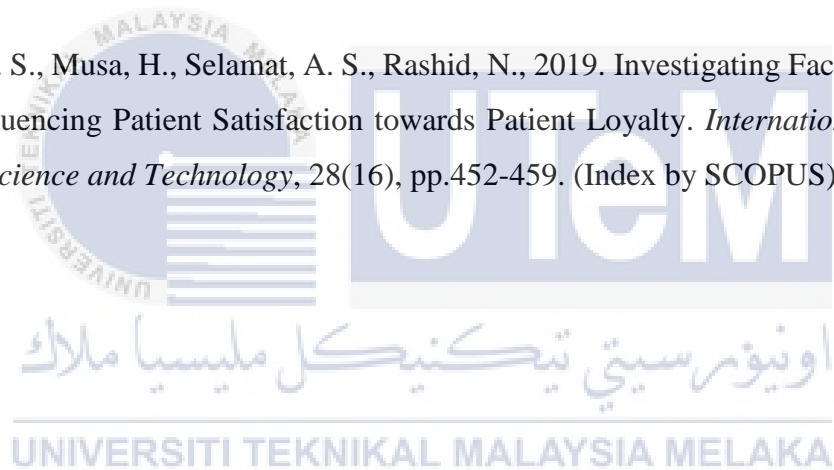


## LIST OF PUBLICATIONS

### Indexed Journal

Hamdan, N. S., Musa, H., Selamat, A. S., Rashid, N., 2020. Perceived Dimensions of Service Quality on Patient Satisfaction and Loyalty in Healthcare Context: A Systematic Approach. *Indian Journal of Public Health Research & Development*, 11(3). (Index by SCOPUS)

Hamdan, N. S., Musa, H., Selamat, A. S., Rashid, N., 2019. Investigating Factors of Service Quality Influencing Patient Satisfaction towards Patient Loyalty. *International Journal of Advanced Science and Technology*, 28(16), pp.452-459. (Index by SCOPUS)



# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

This chapter introduces research background, problem statement, research questions, research objectives, research scopes, research significance, operational definition, thesis outlines, and followed by the summary of this chapter. Research background focuses on healthcare system of the Health Clinic in Melaka. Problem statements is based on the impact of service quality among patients of health clinic in Melaka to gain patients' satisfaction and loyalty. The objective of this research is investigating factor that influencing service quality towards patient satisfaction and patient loyalty and relationship between service quality and patient satisfaction and loyalty. This chapter discusses further information of this study.

### 1.2 Research background

Malaysia is going to developed country, despite undergoing rapid economic development over the past five decades. Malaysia's Gross Domestic Product (GDP), per capita income, level of industrialization and overall standard of living are not on par with other developed nations (Wasiuzzaman, 2020). According to Ahmad et al., (2015) stated that Malaysia is classified as an emerging economy by the World Bank. However, the International Monetary Fund (IMF) also classifies Malaysia as an emerging and developing country (Ng, Kee and Ramayah, 2019). In addition, Malaysia shares common characteristics with other emerging economies, such as Brazil, Indonesia and China (Ahmad et al., 2015).

Therefore, Malaysia is coming close to developed status and stated that have capability to generate income (Afthanorhan, Awang and Fazella, 2017).

In order to compete with other country, Ministry of Health Malaysia have several plan of action from year 2016 to year 2020. Several of the strategic plans addressing aspects of the healthcare system is to strengthen healthcare services delivery for each level of disease spectrum, emphasising on primary health care and to strengthening health system governance and organizational capacity (Ministry of Health Malaysia, 2016). These strategic is to assist the organisation in establishing priorities and improvise incentives to effectively promote medical. Thus, strategic plan must be flexible and practical in order to control their increasing costs, adapt better to changing demands, improve the quality and safety of care and ultimately, improve the health of population (Ministry of Health Malaysia, 2016).

UN Educational, Scientific and Cultural Organization (UNESCO) has established four World Heritage Sites in Malaysia included Melaka, Perak, Sarawak and Sabah (United Nations Educational, 2020). According to Malaysia's healthcare association, previous study as cited by Kang, (2019) stated that Melaka have the most favoured destination for patient to be stratified with medical care. Therefore, this research chooses Melaka as a study area due to its smaller size of wide area that is 1,658km<sup>2</sup> compared with Perak (1,005km<sup>2</sup>), Sabah (73,613km<sup>2</sup>) and Sarawak (124,449km<sup>2</sup>).

Besides, the research by Taqdees Fatima, Malik and Shabbir, (2018) stated that patient loyalty is considered as a key business success factor for healthcare provider in Malaysia especially in public health clinic. Consumer loyalty is defined as a deeply held commitment to rebuy or re-patronize a preferred product or service consistently in the future, causing repetitive same brand or same brand set purchasing, despite the potential for situation influence and marketing effort to cause switching behaviour (Wu, Li and Li, 2016).

Hence, loyal of patient will likely return to the same healthcare provider such as public health clinic, spread positive words of mouth and recommend the provider to other.

Nowadays the private healthcare sector is growing rapidly in emerging market countries (Lien et al., 2014), which makes the healthcare industry competitive especially in public healthcare. The competitive environment is obliging healthcare providers to deal with the increased competition and compete with each other for a larger share of market (Andreasson, Eriksson and Dellve, 2016). Moreover, patients have freedom of choice in healthcare provider either public or private sector. Recognition of the right of patients to freedom of choice has encourage fierce competition among healthcare service providers (Appalayya Meesala and Paul, 2018). Therefore, healthcare providers such as public health clinic should focus on patient loyalty to gain benefits for the economic to the country and reducing patient defection. It is also saves the cost for government of attracting new customers and prevent the wasteful practice to recruit sufficient customers (Zhou et al., 2017).

Developing and maintaining patient loyalty will bring benefits for patients by enhancing health outcomes. Patient have essential participation roles in healthcare service and patient participation affects their health outcome (Seo and Park, 2018). Moreover, loyalty promote continuity of care for patient, compliance with medical advice and greater use of preventive service. Loyal patient also keeps using medical service and maintain relationships with specific healthcare providers as stated by Zhou et al., (2017). The researcher also reported that continuity of care and compliance with medical advice can improve healthcare service and patient outcomes. Thus, for the sake of both health providers and patients, healthcare providers must manage patient loyalty effectively.

In a competitive situation, healthcare success is not only the result of good technical skills and provision of high quality service, but also from satisfying customers and

encouraging them to return to the practice (Wu, Li and Li, 2016). Hence, this topic was chosen to study. Service quality helps healthcare service providers to identify the gap between service delivery and patient expectation (Arab et al., 2015; Ahmed, Tarique and Arif, 2017). While, the relationship between the concepts in question, there is a gap in literature related to service quality dimensions on patient satisfaction, and patient loyalty to health clinic, especially in healthcare industry.

### **1.3 Problem statements**

Service quality dimension plays an important role on patients' satisfaction towards patients' loyalty (Wong, Musa and Taha, 2017). Based on previous study by Černiková, M. E., and Mameniškis, (2015) stated that people are likely to looking for cheaper cost and quality of the health services in a foreign country. On the other hand, patient satisfaction with proper healthcare system can reflect not only the perceived performance of healthcare service but also the health condition of the individual. Since patient satisfaction is an important indicator in order to improve the quality of care, it is necessary to strengthen the service quality models in this study and suggests a direction for governments for establishing policies to enhance competitiveness in the medical service sector. Hence, these research are going to conduct based on patient satisfaction towards patient loyalty at public health clinic in Melaka.

Parasumaran, Zeithaml and Berry, (1985) developed SERVQUAL scale to measure service quality through five dimensions that are tangibility, reliability, responsiveness, access and empathy. But based on previous study by Markovic, Zivojinovic and Vucetic, (2015) implies that SERVQUAL scale not necessary to stick to this five dimensions in summarizing the measured service quality. According to study by Swain and Kar, (2018) stated that all healthcare organizations should attach highest importance to infrastructural

quality, as it addresses management of the core medical service that comprises treatment. Moreover, based on study by Anvari, (2018) argued that inefficient performance management system and a poor work culture can significantly contribute to the high rate of medical errors. Hence, without proper management of physical environment or facilities, a clinic or hospital can never be rated higher for its service delivery.

Then, the procedural quality is one of the issues that have arisen affecting the delays in the delivery process of the service in the clinic or hospital. Previous research by Arab et al., (2015) stated that if the patient assesses such delays unreasonable and unnecessary, this can lead to his or her dissatisfaction and anger. The procedure quality can address essential administrative functions like admission, waiting time, follow up and patient safety are associated with medical treatment. According to Liddy et al., (2017) stated that almost all patients (94%) felt wait times negatively affected their daily lives. However, the main dissatisfaction of patients in Malaysian is the long waiting time, which could lead to stress (Hassan, Rahman and Sade, 2015).

Moreover, previous study by Ariffin, Azraii and Kamaruddin, (2017) identified that the long waiting time is due to long queues caused by the registration counter being manned by clerical staff who is also in charge of giving appointment to patients. This problem leads to this study to be conducted on interactional quality. Previous studies' results show that the patient physician relationship and interpersonal aspects of the care are of the important and determining factors in the patient satisfaction (Arab et al., 2015). This research also stated that low strengthening of interaction quality affected the care of patient and communication skills of doctors, nurse and staff. Since the involvement of the service providers in the delivery of clinic services is inevitable, this finding can therefore be deemed as logical that patients assign more importance to the way the personnel interact with them.

Healthcare literature argued that some of existing medical education curricula do not address human errors. A lack of clear understanding of quality care lead to this study to be conducted on personnel quality. According to the study by Lucas and Edwards, (2017) reported that approximately 70% to 80% of medical errors are related to human mistakes. The researchers also stated that inadequate human resources in healthcare organization negatively impacts patient management. On the other hand, underperforming physicians such as staff competency and diversity negatively affect care quality. Chaudhuri and Mahakalkar, (2018) also showed that the quality of clinical education among newly graduated medical students affects the rate of medical errors in healthcare industry. Therefore, infrastructural quality, procedure quality, interaction quality and personnel quality are the dimensions to measure the level of patient satisfaction and patient loyalty to the public health clinic in Melaka.

Lastly, there is a lack of research in the area of modified service quality model leading to this research to be conducted in accordance at the health clinic in Melaka. A review of the current literature showed in the healthcare industry, there are gaps in the analysis of patient satisfaction that are satisfaction in terms of infrastructure quality, procedure quality, interaction quality and personnel quality. However, the current study is needed to fill the void, adding to the knowledge in the field by considering factors that were not included in previous studies. Then patients relying heavily on referring physicians for advice on the choice of service provider. This research will examine those most important quality dimensions applicable to developing health clinic delivery system in Melaka.

#### **1.4 Research questions**

There are research questions constructed based on the research problem as outlined below:

- i. What is the most dominant service quality dimension affecting patient satisfaction and patient loyalty in health clinic at Melaka?
- ii. Does patient satisfaction has mediates effect between the relationship of service quality dimensions and patient loyalty?

#### **1.5 Research objectives**

The research objectives of this research are as outlined below:

- i. To determine the most dominant service quality dimension affecting patient satisfaction and patient loyalty.
- ii. To discover the mediates effect between the relationship of service quality dimensions and patient loyalty.

#### **1.6 Research scopes**

Melaka is the state of high population density and have smaller wide area about 1,658km<sup>2</sup>. It is also have three district areas namely Melaka Tengah, Alor Gajah and Jasin (Kerajaan Negeri Melaka, 2018). In year 2019, there were 31 public health clinics in Melaka which is Melaka Tengah have 12 public health clinics, Alor Gajah have 10 public health clinics and Jasin have 9 public health clinics. Moreover, Melaka also have other public clinics in Melaka that are 58 rural clinics, and 12 community clinics in health systems with a primary healthcare sector (Jabatan Kesihatan Negeri Melaka, 2018). Public health clinics in Melaka provide the same types of services but they are differentiated based on their quality of service with other district.