UNIVERSITI PUTRA MALAYSIA

MEDIATING EFFECT OF TACIT KNOWLEDGE SHARING ON THE RELATIONSHIP BETWEEN INDIVIDUAL FACTORS AND INNOVATIVE BEHAVIOUR AMONG NURSES

NUR CONSTANCE WAH

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MEDIATING EFFECT OF TACIT KNOWLEDGE SHARING ON THE RELATIONSHIP BETWEEN INDIVIDUAL FACTORS AND INNOVATIVE BEHAVIOUR AMONG NURSES

By

NUR CONSTANCE WAH

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Thesis Submitted to Putra Business School, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

August 2019

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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By

NUR CONSTANCE WAH

August 2019

Chairman : Associate Professor Dahlia Zawawi, PhD
Faculty : Putra Business School

The purpose of this study is to the examine the mediating effect of tacit knowledge sharing on the relationship between several individual factors (trust, perceived supervisor support, supervisory justice, tie strength, and organisational behaviour) and innovative behaviour among nurses in a Malaysian public teaching hospital. Tacit knowledge sharing is crucial in teaching hospital because it placed more demand for training healthcare professionals in education, research, and innovative activities. This study attempts to determine the relationship between individual factors and innovative behaviour, and on tacit knowledge sharing, and to examine the influence of tacit knowledge sharing on innovative behaviour. It is the aims of this study to look at the mediating effect of tacit knowledge sharing on the relationship between individual factors and innovative behaviour.

Using social exchange theory as the underpinning theory, sixteen hypotheses were tested. The research method included both self-report and supervisor-report both 360 nursing employees and 21 nurse supervisors in Universiti Kebangsaan Malaysia Medical Center (UKMMC) were selected using disproportionate stratified sampling, which yields 94.17 per cent response rate. Data were obtained through survey and analyses were performed using Structural Equation Modelling (SEM) confirmed using Partial Least Squares (PLS).

The results showed that nine hypotheses were significant and two hypotheses were insignificant for direct effect. Moreover, tacit knowledge sharing played a mediating effect in trust, supervisory justice, tie strength and organisational citizenship behaviour in their relationship with innovative behaviour.

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Interestingly, perceived supervisor support does not matter for both tacit knowledge sharing and innovative behaviour. The findings conclude that workplace exchange relationship is crucial between nurse and supervisor. This study provides a conceptual basis for effective tacit knowledge sharing in a teaching hospital. From the practical aspect, this study underlines the importance of nurses to share tacit knowledge in order for them to be innovative.

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Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

MEDIASI PERKONGSIAN ILMU TERSIRAT TERHADAP HUBUNGAN DI ANTARA FAKTOR INDIVIDU DAN TINGKAH LAKU YANG INOVATIF DI KALANGAN JURURAWAT

Oleh

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Ogos 2019

Pengerusi : Profesor Madya Dahlia Zawawi, PhD
Fakulti : Putra Business School

Tujuan kajian ini adalah untuk mengkaji kesan mediasi perkongsian ilmu tersirat mengenai hubungan beberapa faktor individu (contohnya: kepercayaan, sokongan penyelia, keadilan penyelia, kekuatan ikatan dan kelakuan tingkahlaku organisasi) dan tingkah laku yang inovatif di kalangan jururawat di hospital pengajaran awam Malaysia. Perkongsian pengetahuan tersirat adalah penting dalam hospital pengajaran kerana ia menekankan aspek latihan di kalangan professional dalam pendidikan, penyelidikan, dan aktiviti yang inovatif. Kajian ini menentukan hubungan antara faktor individu dan tingkah laku yang inovatif, dan perkongsian ilmu tersirat. Kajian ini mengkaji pengaruh perkongsian ilmu tersirat dalam tingkah laku inovatif. Ia juga bertujuan melihat kesan mediasi perkongsian ilmu tersirat terhadap hubungan antara faktor individu dan tingkah laku yang inovatif.

Berlandaskan teori pertukaran sosial sebagai teori pendukung, enam belas hipotesis telah diformulasi dan diuji. Kaedah penyelidikan adalah melalui kajian diri dan laporan penyelia penyelidikan di mana 360 jururrawat terlatih dan 21 penyelia jururawat di Pusat Perubatan Universiti Kebangsaan Malaysia (UKMMC) telah dipilih. Persampelan berstrata yang tidak seimbang telah dipilih dan berjaya mendapat kadar respon sebanyak 94.17 peratus. Data diperolehi melalui tinjauan soal selidik dan dianalisis menggunakan Model Persamaan Struktur (SEM) dengan pengesahan Partial Least Square (PLS).

Keputusan menunjukkan sembilan hipotesis signifikan dan dua hipotesis tidak signifikan untuk kesan langsung. Selain itu, perkongsian ilmu tersirat memainkan kesan mediasi dalam kepercayaan, keadilan penyelia, kekuatan

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ikatan dan kelakuan tingkahlaku organisasi dalam hubungan mereka dengan tingkah laku inovatif. Menariknya, sokongan penyelia didapati tidak penting dalam mementukan perkongsian ilmu tersirat dan tingkah laku yang inovatif. Hasil kajian menyimpulkan bahawa hubungan pertukaran tempat kerja adalah penting di antara jururawat dan penyelia. Kajian ini memberi asas konseptual tentang keberkesanan perkongsian ilmu tersirat di dalam hospital pengajaran. Dari aspek praktikal, kajian ini menggariskan kepentingan untuk berkongsi ilmu tersirat bagi menjana budaya inovatif di kalangan jururawat.

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In the name of Allah, the Most Gracious and the Most Merciful
"So verily, with every hardship there is a relief. Verily, with every hardship, there is a relief" (Surah al-Inshirah: 5-6)

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LIST OF ABBREVIATIONS

SET	Social Exchange Theory
OKCT	Organisational Knowledge Creation Theory
IB	Innovative Behaviour
TK	Tacit Knowledge
TKS	Tacit Knowledge Sharing
PSS	Perceived Supervisor Support
SJ	Supervisory Justice
TS	Tie Strength
OCB	Organisational Citizenship Behaviour
RU	Research Universities
UKMMC	Universiti Kebangsaan Malaysia Medical Centre
MoE	Ministry of Education
MoH	Ministry of Health
RN	Registered Nurse

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In today's information society, knowledge is regarded as the most valuable asset in an organisation because it is a key contributing factor to individual and organisational success (Casimir et al., 2012; Sergeeva & Andreeva, 2016). Consequently, organisations are taking steps to translate individual skills and experiences into organisational assets or knowledge. An organisation's capacity to utilise knowledge is contingent upon its members' passion to share it. When members of an organisation value each other's ideas and promptly share their insights, then it is possible to leverage knowledge.

Knowledge management is vital in organisations as it points the way to comprehensive management procedures and initiatives. Knowledge management is especially crucial in an industry that fully utilises intangible assets such as skills, experiences, and ideas which could contribute to the long-term survival and growth of the industry. One of the industries that have a lot to gain from the effective application of knowledge in diverse areas is the service industry.

The service industry contributed about 47.26 per cent of Malaysia GDP in the year 1967 highest contribution among other industry in Malaysian economy (Economic Outlook, 2017). Since Malaysia is moving towards achieving the status of a developed nation in the near future, it will need to focus more on knowledge sharing as plays a critical role in the service industry as the service sector depends on non-physical output rather than intangible products. Among the up-and-coming industries in the service sector, the healthcare industry is considered vital considering the revolutionisation that has taken place within the industry, what with the development of new technologies and the discovery of new diseases.

The total healthcare industry spending in Malaysia amounts to RM52 billion end of year 2017 and is expected to grow to RM80 billion ringgit by the year 2020 (Frost & Sullivan, 2018) with an annual growth of 20 per cent. Thus, the healthcare industry needs to put in place certain strategies to manage this growth, especially strategies related to human resources investment and reaching outpatients. Indeed, knowledge sharing can be considered as one of the factors that can contribute to human resource development in the industry and will especially benefit the teaching hospital.

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Teaching hospitals can promote knowledge management through a culture of knowledge sharing by placing more emphasis on knowledge within the organisational strategy and encouraging employees to share their knowledge consistently (Lee & Hong, 2014). Effective knowledge sharing will turn the hospital into an active learning organisation and train employees to be innovative in their workplace (Lee & Hong, 2014). A teaching hospital is representative of a knowledge-intensive working environment, as knowledge sharing is essential for training medical students who, upon graduation, will be assigned to other hospitals to begin their career.

In addition to serving as the training ground for healthcare professionals, teaching hospitals play another significant role. As key centres of research, teaching hospitals are responsible for medical breakthroughs. They are places where medical knowledge is evolving continuously and where new cures and treatments of diseases are constantly being discovered. It is also within the context of the teaching hospital that professional healthcare personnel, including lecturers, are able to share their research findings and expertise both nationally and regionally. As part of faculty of the medical schools in universities, it is the responsibility of the healthcare professionals to generate knowledge though their research (Rani, 2012). According to Mahdzir et al. (2013), an increase in knowledge leads to an improvement in patient care because they are perceived to be consultants of high credible standing by their peers and the public, they will in turn be regarded as the trusted experts in their area of expertise, such as the management of a certain disease (Mahdzir et al., 2013).

Institutions of public health are well-positioned to leverage knowledge throughout the world (Lee & Hong, 2014; Sibte & Abidi, 2008). However, knowledge and skills do not exist in a vacuum and should be shared intuitively in order to achieve various aspects of performance (Liao & Chuang, 2004). Knowledge sharing within organisations may create tremendous synergies especially in knowledge-intensive organisations such as the hospitals (Kim, Newby-Bennett, & Song, 2012; Nawakda, Fathi, Ribière, & Mohammed, 2008).

Most hospitals in Malaysia, for example, the Kuala Lumpur Hospital, Sarawak General Hospital, and Serdang Hospital are under the purview of the Ministry of Health (MoH) while some others, such as teaching hospitals, are under Ministry of Education (MoE). Currently, there are three public teaching hospitals in Malaysia: Universiti Sains Malaysia Medical Centre (USMMC) in Kelantan, as well as Universiti Malaya Medical Centre (UMMC) and the Universiti Kebangsaan Malaysia Medical Centre (UKMMC) in the Klang Valley. These hospitals serve as teaching centres for Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), and Universiti Malaya (UM) respectively.

Teaching hospitals have a rather unique setting when compared to non-teaching hospitals (e.g. state hospitals, district hospitals, and private hospitals) because the former synthesize teaching, research, and patient care. Teaching hospitals cultivate future generations of healthcare professionals to assure the continuation of society's health and well-being. They offer the widest breadth of speciality services and expertise to educate future healthcare professionals. By undertaking practical training in teaching hospitals, new healthcare graduates are able to gain clinical experience and knowledge. Since medical knowledge evolves quickly, the lessons taught to the medical students tend to be more fast paced. Keeping the nurses abreast with medical knowledge is vital to ensure that knowledge is utilised in "real-time."

1.2 Research Context

This section provides an overview of the healthcare system in Malaysia, followed by the unique setting of teaching hospitals and the relationship between nurse and nurse supervisor. The selection of this organisation was based on the nature of the study which emphasises on the knowledge-intensive organisation and the time limitations. Hence, this study chooses a teaching hospital setting as it considered as relevant to the current need of being innovative among the healthcare professions.

1.2.1 Overview of Healthcare System in Malaysia

Malaysia has experienced necessary changes in the healthcare sector since Independence in 1957 (Chee, 2008). The colonial healthcare system in Malaya had initially created to serve the need of the civil servants, government employees, and the plantation sector, particularly the urban areas. However, it has extended bit by bit to address the overall population. After the Second World War, there were progressively vital undertakings in the urban and rural areas to accomplish the advancement approaches as a key measure to counter Communist rebellion (Chee, 2008). When Malaya achieved Independence in 1957, the Federal Government began to take control of the government healthcare which has beforehand been the responsibility of the Federation of Malaya (Chen, 2008). Accordingly, the government has provided significant healthcare related where it was financed through central taxation. However, the situation changed during the 1980s due to the development of healthcare demand following the urbanisation (Chee, 2008). According to Judith (2003), the Malaysian government healthcare offers a variety of services including promotional health, curative and rehabilitates care delivered through clinics and hospitals.

The healthcare in Malaysia has evolved from simple single provider system into multiple providers which categorise by the public sector and the private sector of healthcare system. The public sector provides to the greater population (more than 65 per cent) however, is served by just 45 per cent of

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all registered doctors and even fewer specialist (Quek, 2009). Patients and outpatients are only required for a minimum fee payment because of the highly subsidised in public sector hospitals. Patient in a public hospital is required to pay RM1.00 for treatment in a general outpatient clinic and RM5.00 for specialist care. However, for services in the rural healthcare centre has no charges. For third-class wards, inpatients are charged a minimum of RM500 if admitted to the public hospital.

The private sector has grown enormously over the past 30 years (Quek, 2009). The private healthcare service has become the major player in delivering healthcare services along with the public sector and particularly strong in the urban area. It was reviewed that the total healthcare expenditure for both public sector and private healthcare sectors increased steadily in the year 1997 to 2001 in per capita. In line with this, the Ministry of Health (MoH) budget increased National Budget from RM1.0 billion in 1983 to RM8.7 billion in 2006. The increment of RM7.7 billion has raised questions over its sustainability over the long term (Chee, 2008).

In the public sector, the MoH Malaysia is the primary healthcare provider for four types of public hospitals including the general hospitals, district hospitals, special institutions, and national referral centre. There are fourteen states in Malaysia and each state has a general hospital with an estimation of 600 to 800 beds each (Ministry of Health, 2015), delivering the full scope of healthcare services to the patient. The district hospitals are relatively smaller which accommodate estimation of 200 to 400 beds each, delivering an essential curative and diagnostic service. The inpatient's services for special diseases are taken care under special institutions including the National Tuberculosis Centre and several mental hospitals. The National Referral Centre is the highest level of the hospital in the hierarchy. Apart from receiving outpatient and inpatient care, the referral medical institutions also provide a referral for special treatment such as neurosurgery that is unavailable in the state general hospitals and other hospitals. Most of the referral medical institutions located in the city of Kuala Lumpur and has 2800 beds.

Apart from MoH Malaysia, several Ministries involved in providing healthcare services. For instance, public university teaching hospitals in Malaysia are under the MoE preview (Health System in Transition, 2013). To date, there are three established public university teaching hospitals including i) University Malaya Medical Centre (UMMC) in Kuala Lumpur; ii) Universiti Kebangsaan Malaysia Medical Centre (UKMMC) in Selangor, and iii) University Sains Medical Centre (USMMC) in Kelantan. The university hospitals provide teaching the medical students, research and consultancy rendered to the patients in the teaching hospitals. Other hospitals provider includes the Ministry of Defence cater for military personnel and their families; the Ministry of National Unity and Social Development providing healthcare service to the aborigines; and the Ministry of Home Affairs providing healthcare for several drug rehabilitation centres (Health System in Transition, 2013).

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The private healthcare sector is allocated to four main providers namely, private hospitals, private practitioners, private non-governmental organisations, and traditional medicine practitioners. Private hospitals with 2 to 406 beds are governed under the Private Hospital Act 1971. Private medical hospitals offer increasingly rich settings and costs where numerous specialists are practice privately. There are 223 private hospitals with 13,646 beds in the year 2014. Private practitioners have registered doctors providing inpatient facilities through private centres. The purpose of private clinic consultations and treatment is because of less demanding access, basic registration, and shorter waiting time (Quek, 2009). To date, there are private practitioners and specialist clinics with 5600 and 535 respectively.

Additionally, the non-governmental organisations contribute towards healthcare providers such as providing community care for the elderly, the mentally and physically challenged (Health Systems in Transition, 2013). The traditional medicine is widely used in Malaysia such as herbal medicine, homoeopathy, and acupuncture. There are several associations of practitioners, for example, the Chinese Physicians Association of Malaysia (Health Systems in Transition, 2013). Table 1.1 shows the health facilities in Malaysia for both the public sector and the private sector.

Table 1.1 : Health Facilities in Malaysia

	Number of Hospitals	Number of Beds
Government (MoH)		
Hospital	141	38,880
Special Medical Institutions	9	4,942
Health Clinics	1,061	-
Rural Clinics	1,810	-
1Malaysia Clinics	109	-
Government (Non-MoH)		
Hospital	8	3,322
Private Medical Institution		
Hospital	223	13,646
Medical Clinics	6,586	-

(Source: MoH, 2015)

World Health Organisation (WHO) has recognised Malaysia healthcare Malaysia as a systematic framework to accomplish “Health for All” (MIDA, 2014). Currently, the country gross domestic product for healthcare is about 7.25 per cent and is expected to increase due to the growing population. An aggregate of RM1.87 billion has been spent in the year 2012 to boost healthcare facilities, offer medical equipment, and healthcare training (MIDA, 2014). Healthcare is a knowledge-intensive industry that offers distinctive opportunities to analyse complex information set (Wickramasinghe, 2010). The healthcare industry needs to completely grasp the information gathered from either evidence-based medicine and electronic medical record systems from its strategies and process management (Wickramasinghe, 2010). The

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effective application knowledge management relies on the improvement of knowledge management infrastructure and the deliberate support of various technologies (Wickramasinghe, 2010). This serves a dynamic nature of knowledge management that could help to structure the tacit and explicit knowledge in facilitating superior healthcare delivery (Nicolini, Powell, Conville, & Martinez-Solano, 2008).

Healthcare services are knowledge-intensive that it has a high number of intangible assets and intellectual capital as compared to other industries. The service concerns the work that considers complex, emergency and there is petite tolerance for error. Healthcare services use their expert knowledge not only for the patient but among their employees to create integrated learning and knowledge. Implementation of knowledge management systems (KMS) is highly recommended in hospitals as a way to improve decision making regarding diagnosis and treatment of the patient (Chen, Liu, & Hwang, 2011). Most of the decision made concerns people health and well-being. Thus, poor decisions can immediately lead to devastation. Further, it could help administrators in hospital accreditation and management (Chen et al., 2011). By doing so, healthcare services could enhance their competency in creating and integrating medical knowledge.

1.2.2 The Unique Setting of a Teaching Hospital

In the 6th Malaysian plan, the government improves the healthcare services in the urban and rural areas by allocating 2.4 times the budget allocated in the 5th Malaysian plan. One of the specific contents in the 6th Malaysian plan was emphasised on university hospitals. The three functions of a university hospital based on the 6th Malaysian Plan are; i) Human resource development; ii) Research and; iii) Healthcare service. The plan was extended up to the 9th Malaysian particularly to have the continuous expansion of healthcare facilities with the budget allocation is over ten times more than in the 6th plan (Arakawa, 2008). The first function of a teaching hospital is for human resource development. The planned was put in place to accommodate the nurses' shortage and regional inequality in public hospitals. The plan places importance to enhance services through collaboration between medical institutions and enhancement of primary healthcare. Hence, human resource training is developed to overcome the health workforce shortage particularly in serving rural communities.

To date, the training undertaken in the teaching hospitals has managed to produce more than 7,000 experts in various medical fields in the country (Rani, 2012). They get the opportunity to join any independence practice to get clinical knowledge and experience. The second function is for research and development. From the 7th to the 9th plan, research and development are an emphasis on diagnosis-related treatment and cures for strengthening the research capabilities. The third function is for healthcare services. The healthcare services place on the continuity of enhanced specialised education

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(post-graduate) and the expansion of healthcare facilities in three stages (primary, secondary, and tertiary). Thus, the development of university hospitals was the perfect measure cater to the needs of the nation by improving the employment terms of public healthcare workforce (Arakawa, 2008). Teaching hospitals refer to a hospital that provides health systems and networks that deliver care to vulnerable patients. The modern teaching hospitals are the most complex human organisation ever devised because it stems from multiple missions of teaching, research, and patient healthcare (Rani, 2012). As the health professions work together to discover new treatments for the patients' benefit, the hospitals are distinguishing by their innovative clinical research activities.

The first unique criteria are the teaching hospital trained the young medical and nursing students to be the future healthcare professionals. The courses are arranged for the medical students an average of 5 to 6 years to pass exams and engaged in practical ward training. Whereas, the nursing students are taking the coursework for four years and practice in the same university hospital. The purpose of the long course is the volume of materials need to be learned both clinically and interpersonal skills. The medical and nursing students have a great incentive to learn course materials well to be a competent doctor and registered nurse. These processes are the first steps on a path of lifelong learning and build their professional knowledge throughout their medical career. Medicine is a career that requires both hard work and the ability to interact with people. The medical and nursing students have a great opportunity to be brought close to current scientific knowledge beyond what stated in the textbook. Their lecturers are very involved in the expertise field, and as such, the medical and nursing students will get first-hand knowledge from the latest studies in the current area. The medical and nursing students will be brought to the current level of medical terminology and understanding. Any most recent discovery is taught in the lecture and research papers published is shared by the respective lecturer.

The teaching hospital is the merger of the hospital and the University Faculty of Medicine. The combination serves the teaching hospital as several hubs include teaching, research, and consultancy. The innovative steps change to make the teaching hospital as an institution of a premier academic medical centre (UKMMC, 2016). The teaching hospitals are affiliated with the university teaching faculty and under the operation of MoE with the main objective to provide health services, learning and research with the best efficiency to the patients. Since the teaching hospitals are run under the same Ministry, it indicates that the policymakers and the stakeholders are the same.

The three Malaysian teaching hospitals affiliated with the university are among the research universities (RU) appointed on 11th October 2006. The Malaysian RU is defined as a public university that recognised as a university which emphasised on research activities, educational hubs, and research and development. As a successful developing country, Malaysia has boosted the

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achievement of local public universities by awarding five public universities as RU: i) Universiti Malaya (UM); ii) Universiti Sains Malaysia (USM); iii) Universiti Kebangsaan Malaysia (UKM); iv) Universiti Putra Malaysia (UPM) and; v) Universiti Teknologi Malaysia (UTM). Chew et al. (2013) posit that the RU contribute to the country's economic development and as a leading-edge towards innovativeness. As part of the RU, the universities are responsible for boosting up research and development including innovation lead to a knowledge-based economy. Furthermore, the goals of RU are to increase the intake of postgraduate and postdoctoral students, enhance the number of lecturers with PhD holders, increase the international student's intake and competing in the QS world university ranking with other established universities (Chew et al. 2013). Hence, the university teaching hospitals are required to provide quality education to the medical students, engage in research and provide the best healthcare services in the country.

The clinical staff of the teaching hospitals consists of the clinical (doctors) and non-clinical (nursing) lecturers from several schools (e.g. School of Nursing). The principal activities of the academic staff are teaching, research and consultancy. The lecturers are responsible for teaching undergraduate and postgraduate medical students. They provide clinical education and training to students and graduate healthcare practitioners (e.g. medical and nursing).

As the teaching hospitals are among the RU, the lecturers are given two workload options: i) to embark 70 per cent of research and 30 per cent of teaching or; ii) to embark 30 per cent of research and 70 per cent of teaching (Chew et al. 2013). The lecturers have achieved various recognition and received major awards in their field of specialisation (UKMMC, 2015). It is important for the lecturers to continuously engaged in research and advance in knowledge because it leads to improvement patient care. Since medical technology is fast evolving, the existing knowledge needs to be relevant and current. The lecturers need to be the experts in their field, as they become the reference person by their peers and the public in managing certain diseases.

Although teaching hospitals run under the MoE, they are an independent body as income generation is done without depending on the government budget. The teaching hospitals are required to be entrepreneurial hospitals as they need to find the source of the fund through various methods. The methods include medical fees charges on inpatients and outpatients, commercialization, advertisement fee, the rental fee to pharmacies and consultation fee with the specialists.

Most of the doctors and nurses were the students attached to the medical school before they become practitioners and registered nursing. Their familiarity with the organisational culture from the first year of academic up gives them the opportunity to learn valuable experience at an early stage. Alternatively, student placements from the medical and nursing schools may choose to stay with the teaching hospitals as they are familiar with the common

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practice. A teaching hospital environment has a greater team ranges from the academicians to the clinicians and manage a greater variety of patients with complex illnesses compared to the general hospitals. The sub-speciality environment in the teaching hospital can is a good platform for the clinician and front-line clinician to extend knowledge in an area of interest.

Moreover, teaching hospitals play a distinctive role in the community by offering specialised service which is not available in the general hospital. The teaching hospitals are committed to providing the finest quality healthcare to patients and are widely recognised for providing the highest quality and highest professional care (Ayanian & Weissman, 2002). Teaching hospitals have more surgery cases, and non-teaching hospitals have more cases with heart conditions and infectious diseases (Gok & Sezen, 2012). They offer outstanding healthcare by treating diseases on routine service such as trauma, heart disease and stroke (Rani, 2012). Teaching hospitals have the capacity to perform such specialised care whenever other facilities could not cater to the need of the patients' treatment.

The teaching hospitals are a critical component of healthcare safety particularly to the patients who lack health insurance. With regards to care costs, teaching hospital is more expensive than the non-teaching hospital counterparts (Gok & Sezen, 2012). The highly specialised care for treating rare diseases, medically fragile patients and practice inherent in medical educations are the main reasons for the high charges (Ayanian & Weissman, 2002). Despite the high charges, the teaching hospitals provide essential non-hospital services such as health screening and support groups that benefit patients. Teaching hospitals have become one of the main economic engines among the communities, employment, and generating business. To date, teaching hospitals have produced more than 5000 employments to the community, and they are encouraged to transform ideas into reality (Rani, 2012). Also, the business operating in other sectors such as pharmaceuticals benefit from the expenditures of the hospitals and their staff. For example, when the hospitals purchase goods and services such as drugs, software, bed linens, and food, it creates revenue for local communities and income for employees in other organisation.

In a nutshell, the teaching hospitals in Malaysia are essential for the national healthcare system. It provides a wide range of modern and sophisticated specialized services to improve patients care. As part of the system healthcare services, the teaching hospitals also contribute to the nation's health outcomes. It plays a major role in health promotion strategy, disease prevention strategies and primary care services (Mahdzir et al., 2013).

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1.2.3 Nurse and Supervisor Relationship

Nurse and supervisor relationship has been the focus of much attention recently due to the impact on patient care. Nurse and supervisor play a major role in delivering quality healthcare to the patient in hospitals. Among the nurses' and the supervisors in teaching hospitals responsibilities include the following: (i) teaching undergraduate students; (ii) examining and conversing with patients to analyze their medical conditions; (iii) undertaking administrative work; work with different specialists as a component of a group; (iv) promoting well-being instruction; (v) teaching junior nurses as well as doing research (UKMMC, 2016). Nurses role and responsibilities include working with different patients with different needs from pediatric to geriatric, getting specialization areas such as intensive care unit, observing and recording patients behaviour, treating medical crisis such as strokes and heart diseases and administering medicine as well as helping out doctors in research (Bennis, 2008; UKMMC, 2016).

The role of nurses and supervisors are vital in transforming the national healthcare system, the community, on patients, their families and themselves. It is crucial for nurses' to strive towards safeguarding the society interest by ensuring the professions follow the professional code of conduct. Strong collaboration between nurses results in the success and the quality of care to the patients (Tang, Chan, Zhou, & Liaw, 2013). They are view as innovators in healthcare because of their observational skills, knowledge, and compassionate care for helping patients manage their medical needs. Apart from being the primary care providers, nurses are the change agent in today's new world of healthcare (Georgiou et al., 2015).

In the teaching hospitals, nurses work together not only consult patients but also carry out medical research. Nurses in the teaching hospitals sometimes involve indirectly in research and development of products and services such as medical devices and treatment or cure for diseases. Nurses involve in research and perform a broad range of non-clinical support in providing better healthcare. Since nursing is a 24-hour job in taking care of patients, they work in shifts. When supervisors make medical decisions, nurses will execute it to ensure patients follow the orders. Their work requires professionalism and knowledge is usually shared when working together in teams with shifts. Nurses need to sustain a cooperative relationship among the healthcare team by communicating information, respond to the request, building rapport and contributes to team effort (UKMMC Portal, 2016). Any decision made must comply with procedures, rules, and regulation. Without experiences, it would be difficult to protect patients, ensure proper operation of equipment and evaluating new materials and techniques.

The relationship between nurses is a many-sided that entails thoughtful knowledge sharing and mutual responsibility for patient care (Bridges, 2014). The terms of knowledge sharing have been used interchangeably to express

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collaboration, communication, nurse and physician interaction, teamwork, consultation, and partnerships. Recognising the terms is necessary because every concept is associated and it helps convey the meaning to the idea of concern (Bridges, 2014). It involves interaction with participation considering the common task to carry mutual obligation regarding the result (Bridges, 2014). The cooperative practice among the nurses is characterised as a procedure through which their work aims towards the mission of patient care (Bridges, 2014).

Similarly, their relationship involves making a decision to encourage individual learning and sharing valuable medical knowledge (Bridges, 2014). A joint effort between nurses and supervisors require different sharing including shared values and responsibility (Hallas, Butz & Gitterman, 2004). It is an interpersonal process where nurses and supervisors present common objectives, same decision-making capacity, and power to manage patient (Georgiou et al., 2015). The most crucial is communication effort between the nurses and supervisors to ensure their relationship works (Bridges, 2014). Additionally, respect and acknowledgement in each other are essential to the cooperative practice (Tang et al., 2013). Hence, respect is a fundamental aspect incomprehension of the nurses' expertise and their unique ability.

1.2.4 Healthcare Manpower

Table 1.2 depicts that there was an increase of approximately 45 per cent of nurses from the year 2006 to 2016 with subsequent improvement in the nursing population from 1:559 to 1:308 (MoH Malaysia, 2017). The WHO recommends that each doctor should have a minimum of 2.5 nurses to assist them at all time. However, in Malaysia, the ratio has floated at around 2.10 for the past ten years. Additionally, WHO stipulates that recommended doctors and nurses to a population for developing countries including Malaysia be 1: 540 and 1:200 respectively. Due to the shortage of doctors and nurses' manpower, the Malaysian government has classified doctors and nurses as a critical field (MoH Malaysia, 2017). It has been estimated that a total of 130,000 nurses is needed by the year 2020 to reach the stipulated ratio (Barnett, Namasivayam, & Narudin, 2010). The increase has been achieved primarily due to the escalating supply of new graduates from several nursing colleges and universities (Barnett et al., 2010).

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Table 1.2 : Total population of healthcare professions (Population, Doctor, and Nurse)

Year	Population	Doctors	Nurses	Nurse: Doctor	Doctor: Population	Nurse: Population
2016	31,700,000	50,158	102,922	1:2.05	1:632	1:308
2015	31,200,000	46,497	100,000	1:2.15	1:671	1:312
2014	30,995,700	45,565	92,681	1:2.03	1:680	1:334
2013	29,714,700	46,916	89,167	1:1.9	1:633	1:333
2012	29,313,960	38,718	84,968	1:2.19	1:758	1:345
2011	28,942,956	36,601	74,788	1:2.04	1: 789	1:387
2010	28,335,100	32,979	69,110	1:2.10	1:861	1:410
2009	28,321,875	30,536	59,208	1:1.94	1: 925	1:477
2008	27,754,496	25,102	54,208	1:2.16	1:1105	1:512
2007	27,197,296	23,738	48,916	1:2.06	1:1145	1:556
2006	26,631,878	21,937	47,642	1:2.17	1:1213	1:559

(Source: MoH Malaysia, 2006 to 2017)

This section has introduced an overview of the healthcare system in Malaysia which informed the general understanding of Malaysian health facilities in the private and public hospitals. It has outlined a broad range of Malaysian healthcare on the government hospitals under the MoH, government hospitals governed under Non-MoH such as the teaching hospitals under MoE, and the private medical institutions. The research context described several unique settings of a teaching hospital in terms of the training, education, teaching, the different role of nurses, their responsibilities, and how a teaching hospital is governed. These elaborations provide a holistic view of how a teaching hospital is contrasted with a non-teaching hospital. It continued with the role and relationship of nurse and supervisor in a teaching hospital. In conclusion, this chapter highlights the 10 years' statistics of the total population, doctors, nurses, the ratio between a nurse with a doctor, the ratio between a doctor with population and the ratio between a nurse with the population.

1.3 Problem Statement

Within the healthcare sector, teaching hospitals in particularly are one of the most complex organisations (Fahey & Burbridge, 2008; Gagnon et al., 2015) because it is main to train new doctors and nurses. Within them exists a lot of information, skills, knowledge, teaching, as well as complicated decision-making processes (Sibte & Abidi, 2008). In such context, tacit knowledge sharing (e.g. communication and training) is crucial in order for the nurses to behave innovatively in providing the best quality of healthcare (Tasselli, 2015). On top of dealing with patients, teaching hospitals are also required to facilitate research and the teaching of medical students (Chiu, Schaeffer, & Nakfoor, 2013; Gok & Sezen, 2012). As such, tacit knowledge sharing is in ever more demand in order for teaching hospitals to deliver excellent education and training.

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An important issue in Malaysia and other countries is a shortage of nurses. In Malaysia, the nurse to population ratio is 1:308 (Ministry of Health, 2017) instead of the recommended 1:200 for developing countries. The statistics also reveal that nurses living abroad accounted for a critical 20 per cent of Malaysia's 84,000 nurses (Ling, 2012) and the shortage is expected to increase by an alarming rate of 25 per cent from 92,681 in the year 2014 to 130,000 in the year 2020 (Malaysian Department of Statistics, 2017). The current shortfall affects the work of nurses which resulted in them to have do double duty and perform non-nursing functions which impeded direct patient care (Pillay, 2017). The problem is worsened by the active recruitment of qualified nurses by foreign countries such as Singapore and Saudi Arabia (Pillay, 2017).

To ascertain the challenges brought about by a shortage of nurses, interview sessions were conducted with two prominent nurses working with the UKMMC. It is imperative to highlight these challenges because they provide some concrete evidence for this study. The first interview was with a senior nurse Madam Fuziah Abdul Hamid, the Head of Nurse in the Clinical Department of UKMMC. Her responsibility as the Head of Nurse is to direct, organise, and plan the nursing unit strategically within the teaching hospital. Her position also requires good supervisory and delegation skills to lead, direct, and promote nursing staff. During the interview session, she shared her views on the shortage of nurses in detail.

> *"I have witnessed the trend of people leaving the nursing profession since my early [days] as a registered nurse in the early 1990's. I personally believe that any teaching hospital needs more nurses due to the problem of nurses leaving the profession, an ageing population, and a decrease in enrolment in nursing courses. Due to the current nurse shortage, the career development of the nurses such as pursue career development has been deprived. These challenges put pressure on me as the Head of Nurse and teaching hospitals need to find ways to tackle it."* (Fuziah Abdul Hamid, 3 years as the UKMMC Head of Nurse, Clinical Department, February 3, 2017).

Based on the nursing shortage stated above, it is in the best interests of a teaching hospital that it understands the individual factors affecting nurses (Xerri, 2012). In this study, trust, perceived supervisor support, tie strength, supervisor justice, and OCB are group under individual factors because it is considered as personality or person-specific factors that contribute to innovativeness (Parzefall et al., 2008). Researchers further recommended that by developing employees' innovative behaviour, their productivity could be increased (Carmelli et al., 2006; Xerri, 2013). The second interview, which was conducted with Muhammad Fariqh, a registered nurse with 10 years of experience who is currently attached to the intensive care unit (ICU) in UKMMC teaching hospital. His job functions include recording patients'

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diagnostic results, operating medical equipment, assisting doctors, providing specialised care to patients, and training to trainee nursing students. He expressed his concern over the importance of tacit knowledge sharing.

> *"For the past 5 years, I have seen a number of nurses quitting the profession. I admit that there is a shortage of nurses in this teaching hospital. It is very crucial for us to share knowledge through our experiences and be more innovative in tackling the challenges. I believe that the issue of knowledge sharing in the teaching hospital is not yet known. I guess it is best to resolve this issue as the teaching hospital is seen as the main healthcare knowledge hub in Malaysia"* (Muhammad Fariqh, 5 years as Registered Nurse in UKMMC, February 10, 2017).

The findings from both the above interviews prompted further research to improve training and tacit knowledge sharing between nurses. In addition, despite the fact that they constitute 80 per cent of primary care providers and contribute to innovation in clinical practices, the issue of knowledge sharing among nurses has received little attention (Hughes, 2006; Ying et al., 2016). One of the reasons why knowledge sharing failed to be recognised in this profession is because workplace relationships and dynamics have been ignored (Wang & Noe, 2010).

Apart from the practical problems mentioned above, it is vital to highlight several research gaps that contribute to this study. Over the decades, considerable research has been made on innovative behaviour after Scott and Bruce (1994) propose a comprehensive framework examining the innovative behaviour from several angles namely individual, psychological, and leadership. However, research to date fails to reach a mature understanding on innovative behaviour of existing healthcare processes that should improve problem-solving efficiency (Scozzi et al., 2005) due to the existing theoretical, conceptual, and practical gaps (Blau, 1964, Cropanzano, 2015, Lee & Hong, 2014; Parzefall et al., 2008; Radaelli et al., 2014; Ying et al., 2016).

The debate on social exchange theory exists when a group of scholars (Blau, 1964; Eisenberger et al., 1986) refer social exchange is greatly explained the costs and benefits equation while, another school of thoughts (Cropanzano, 2015; Kim et al., 2015; Xerri, 2012) summing up human relationship is far too complex to be reduced to such equations. The motives for staying in earning benefits into equations that sustain a relationship is viewed as impossible (Cropanzano, 2015). Although the social exchange theory outlines the costs, benefits broadly, the researches on the complex interactions between the respective supervisor and nurses' is minimal (Wang et al., 2015).

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In recent years, there has been an increased focus on the relationship between tacit knowledge sharing and innovative behaviour (Lee & Hong, 2014; Liu et al., 2014; Radaelli et al., 2014; Ying et al., 2016) and relationship between individual factors and innovative behaviour (Sanders et al., 2010; Wang et al.,2015; Yu et al., 2018). Despite the extensive research on innovative behaviour, there is is a dreath in studies that connect these relationships together particularly among nurses (Mura et al., 2012; Kessel et al., 2012) as most studies have investigated these connections in isolation (Parzefall et al., 2008).

In addition, the literature stating the lack of attention given to study of innovative behaviour in teaching hospital settings. Several researchers provide evidence that poor workplace relationship exists due to poor exchange between nurses and supervisors (Raabe & Beehr, 2003; Raghuram et al., 2012; Ying et al., 2016). Nevertheless, there are minimal studies addressing the lack of social exchange issue (Wang & Noe, 2010). Given the nature of a teaching hospital setting that strives to provide quality education and patient care, it is critical to enhancing innovative behaviour as it is regarded as a way to improve the working conditions of the nurses.

Traditionally, researchers conceptualised social exchange in the workplace a one-dimensional construct despite evidence in the literature claims that social exchange may emanate from various sources such as organisational, team, and individual levels (Cropanzano & Mitchell, 2005; Xerri & Brunetto, 2013). As a result, previous studies failed to explain the differences support originating from individual levels on sharing tacit knowledge. In this case, despite the emergence of tacit knowledge sharing as an important predictor of innovative behaviour (Hu & Randel, 2014; Lin, 2007; Wang & Wang, 2012), research that goes linking tacit knowledge sharing as a mediator is astoundingly less explored (Parzefall et al., 2008).

For such reasons, this research attempts to focus on the mediating effect of tacit knowledge sharing on the relationship between individual factors and innovative behaviour. Trust, perceived supervisor support, tie strength, supervisor justice, and OCB are group under individual factors because it is considered as personality or person-specific factors that contribute to innovativeness (Parzefall et al., 2008). A review of the individual factors that influence employee behaviour is crucial to advance the understanding of better support for innovative efforts. The findings of this study may provide insightful analysis to corroborate the individual factors contributed by nurses that encourage the occurrence of tacit knowledge sharing and innovative behaviour.

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1.4 Research Questions

This research addresses the following three research questions:

1. What are the nurses' perceptions of individual factors (e.g. trust, perceived supervisor support, supervisory justice, tie strength, and OCB) in predicting whether they behave innovatively and share tacit knowledge in a public teaching hospital?
2. What influence does tacit knowledge sharing have on the nurses who behave innovatively in a public teaching hospital?
3. In the setting of a public teaching hospital, how has tacit knowledge sharing mediated the effect of individual factors (e.g. trust, perceived supervisor support, supervisory justice, tie strength, and OCB) in terms of nurse's perceptions on innovative behaviour?

1.5 Research Objectives

The following are the general and specific objectives of this study:

General objective:

The general objective of this study is to provide an insightful analysis to corroborate the individual factors contributed by nurses that encourage the occurrence of tacit knowledge sharing and innovative behaviour. Subsequently, this study examines the potential mediator role of tacit knowledge sharing in the proposed relationships.

Specific objectives:

The following are the specific research objectives aligned with the research questions:

1. To determine the relationship between individual factors and innovative behaviour from the perspective of the nurses in a teaching hospital.
2. To determine the influence of individual factors on tacit knowledge sharing among nurses in a teaching hospital.
3. To examine the influence of tacit knowledge sharing on innovative behaviour among nurses in a teaching hospital.
4. To examine the mediating role of tacit knowledge sharing in the relationship between individual factors and innovative behaviour among nurses in a teaching hospital.

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1.6 Significance of the Study

This study makes two significant contributions which include theoretical and practical contributions. The findings of the study will provide benefit to both theoretical and practical considering that tacit knowledge sharing and innovative behaviour plays an important role among nurses today. The greater demand to be innovative in sharing tacit knowledge justifies the need for more effective communications between nurses. This study helps the nurses in a teaching hospital to uncover a critical area in workplace relationships that many studies were not able to explore.

1.6.1 Theoretical Contributions

Social exchange theory is more significant and relevant for this study because it is concerned with workplace exchange relationships between nurses and supervisors. This study aims to develop the understanding of the existing social exchange theory by providing depth in the relationships between the tested variables in respect to the concepts originated from other countries but not explicitly within the Malaysian context. The previous section above highlights the implicit assumptions of the prominent theories (e.g. Agency theory, theory of reason action, social cognitive theory, and knowledge-based view) that failed to capture the substance of the relationship between individual factors, tacit knowledge sharing, and innovative behaviour from a holistic perspective. Although social exchange theory does highlight that the interactions between individuals are crucial, the theory has yet to clarify how nurses' perception towards supervisor support helps in facilitating nurses' innovative behaviour (Lin, 2007; Wang & Noe, 2010) within the setting of a teaching hospital.

The core significance of social exchange theory is its postulation that workplace social relationships can be used to foster innovative behaviour and maintain the performance of employees. There are very few studies that use the social exchange theory to examine the exchange relationship between employees and their supervisors (Cropanzano, 2015). Previous research has investigated the social exchange relationship between employees and the organisation in the context of online communities (Yan, Wang, Chen, & Zhang, 2016). The insight of both nurses and supervisors are important to provide a holistic view of social interactions and relationships in the workplace. Furthermore, this study highlights the importance of social workplace relationships that are built upon mutual understanding and the impact it can have on innovative behaviour.

The second theoretical contribution is derived from the literature on knowledge management. Although Lin (2007) and Akhavan and Hosseini (2016) conducted similar studies, they focused more on the broader, unidimensional view of knowledge sharing, rather than the specific tacit knowledge sharing.

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Tacit knowledge sharing is a strategically crucial resource that can help an organisation achieve its goals. Furthermore, their studies (Akhavan & Hosseini, 2016; Lin, 2007) were confined to profit-oriented organisations such as small and medium enterprises (SME). Unlike for-profit organisations, the main priority of non-profit organisations is to serve society, as well as to bring people together by improving their social status, the social situation, and through humanitarian efforts (Prugsamatz, 2010). The public teaching hospital is an example of a non-profit organisation within the healthcare sector (Chumg et al., 2015). Chi et al. (2008) suggest that non-profit organisations often lack knowledge management, and this can, in turn, hinder the development of the hospital. Considering the lack of development in a non-profit teaching hospital and the importance of tacit knowledge sharing, it is necessary to employ organisational knowledge creation theory with a focus on the willingness of nurses to share their experiences. Due to the different nature of the environment, this study is a vital contribution to the literature of knowledge management.

Despite the growing popularity of factors that contribute to innovative behaviour, this study contributes to the literature by including individual factors to predict both tacit knowledge sharing and innovative behaviour. Several researchers have investigated the factors that influence innovative behaviour in independent studies, for instance, trust (Yuan & Woodman, 2010), perceived supervisor support (Janssen, 2011), supervisory justice (Hsu & Wang, 2015), tie strength (Xerri et al., 2009), and OCB (Podsakoff et al., 2009). Nonetheless, it is difficult to pinpoint which variable is the most influential to innovative behaviour. To overcome this limitation, the influence of individual factors on nurses' innovative behaviour is investigated.

In addition, this study contributes to the mediating effect of tacit knowledge sharing on the relationships between individual factors and innovative behaviour. Several researchers (Lin, 2007, Mura et al., 2013; Ying et al., 2016) have only examined the direct effect of individual factors on innovative behaviour and the direct effect of individual factors on tacit knowledge sharing, and this has limited the understanding of the overall the causal relationship. Recognising this gap, this study introduces a mediating effect that hypothesised individual factors influence tacit knowledge sharing, which in turn influence nurses' innovative behaviour. To date, most studies on tacit knowledge sharing have focused on tacit knowledge sharing within teams and organisations (Hu & Randel, 2014; Radaelli et al., 2014; Ying et al., 2016). This study contributes to the literature by shifting the focus to tacit knowledge sharing at the individual level.

This study also contributes to the methodological aspect. Most studies use self-report to evaluate innovative behaviour constructs despite evidence in the literature that innovative behaviour is management responsibilities such as supervisors. As a result, research to date failed to elucidate the choice made on an independent source such as supervisor's opinion and it has contributed

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to the social desirability and method bias by using self-report (De Jong & Hartog, 2007). In this case, despite supervisor emerged as an important source to evaluate innovative behaviour (Janssen, 2000; Scott & Bruce, 1994), the choices made on supervisor's opinion to judge innovative behaviour construct is astoundingly less explored (De Jong & Hartog, 2010).

Another contribution of this study is that it adds to the limited research on innovative behaviour in developing countries. Statistics reveal that 90 per cent of studies on innovative behaviour has been done on or from developed countries (Amo, 2006; Savory & Fortune, 2014). Little is known about whether the understanding of innovative behaviour, as established in developed countries, will hold up in large collectivist countries such as Malaysia. Innovativeness within healthcare is critical in addressing the workforce shortage and other related problems (Baumann, 2011; Radaelli et al., 2014; Ying et al., 2016) because it can lead to higher quality medical students, as well as improved education, and patient care. Also, Farmer, Tierney, and Kung-Mcintyre (2003) encouraged inquiry relevant to innovation, noting the importance of Asia setting. Studies examining employees' creativity or innovative behaviour in non-Western work settings are rare (Madjar, Oldham & Pratt, 2002) and this needs more examination as organisations in Asia are increasingly moving to knowledge-creating jobs (Farmer et al., 2003). Accordingly, a Malaysian public teaching hospital was chosen as a setting to ascertain the applicability of innovative behaviour to an "Eastern" culture.

1.6.2 Practical Contributions

From a practical perspective, this research can contribute to the endeavour of creating a more conducive work environment and provide valuable insights for policymakers, teaching hospitals, nurses and their supervisors, medical students, and society at large.

The findings of this study also provide policymakers with a better understanding of practices that teaching hospitals should have to be successful. Policies are fundamental for any organisation that strives to establish unbiased practices. The introduction of individual factors, tacit knowledge sharing, and their implication on innovative behaviour create an avenue for the policymakers to be aware of the possibilities of poor workplace relationships. An understanding of the relationships within a workplace will allow policymakers to initiate appropriate steps towards achieving their organisational policies. The findings of this study benefit the policymakers by allowing them to engage in knowledge sharing and taking it as a scheme of communication in the practices of teaching hospitals. By implementing such a strategy, adverse consequences between the nurses and supervisors due to poor workplace relationships can be minimised.

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Policymakers such as the MoE and several other Medical Associations may also benefit from this study. For one, nurses may become more engaged when there is an opportunity to learn more. Learning will, in turn, contribute to an increase in the clinical value and quality of training. A programme such as the self-development program can be implemented and focus on learning possibilities for the nurses in teaching hospitals. The findings of the study are also expected to be of interest to the MoE. The attention of and participation from the ministry could result in the passing of policies that will encourage innovative behaviour at the ministerial level for all teaching hospitals to adhere to. Policymakers could add courses for young medical and nursing students.

This study also recognises the role of teaching hospital management support on nurses' success. The findings of this study are also valuable for appropriate educational strategies and initiatives in training young medical students. The findings encourage the management of teaching hospitals to introduce a buddy system, inductions, and mentoring programmes. The insights of this study contribute to the delivery of the highest quality of patient care under the supervision of registered nurses and their supervisors. The management of the teaching hospital can build an organisational environment that creates the conditions for the exchange of knowledge. Coming from a wide range of expertise from a different aspect of clinical, some may perceive that sharing knowledge leads to a loss of expertise. By alleviating the fear of losing expertise, a teaching hospital needs to ensure that the components of justice are implemented.

The findings of this study can also help to improve the relationships between nurses and supervisors. Unlike other professionals, nursing professionals operate in a strict hierarchy as the supervisor determines the practice of each ward for the nurses that may contribute or prevent innovative behaviour (Maben et al., 2006). The context of nurses as healthcare professionals offers a unique culture (Laperriere, 2008) as they train new doctors and nurses. In light of this, the research instrument for supervisors to evaluate nurses' innovative behaviour may need to be modified to highlight the importance of workplace relationships. This study provides a significant contribution to the ongoing debate on how to achieve better healthcare for patients and how to achieve a closer relationship between nurses and supervisors regarding the current change in healthcare (Amo, 2006; Ying et al., 2016). The findings of this study offer them new ways to improve the quality of training. This study serves as a reminder to both nurses and supervisors to strengthen and improve their workplace relationship.

Last but not least, the findings of this study can benefit medical students and society. The findings can enhance medical students' preparedness and readiness to embark on the clinical pathway if given the right learning environment and supportive teaching hospital culture. This study also helps to produce more behaviourally and socially sophisticated medical graduates while maintaining a professional within the challenging healthcare system. A

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critical examination of this study will also allow medical students to better meet societal needs. This, paired with advance medical knowledge, holds great promise for enriching and improving the young medical professionals in the future. Finally, society can benefit from the indirect mutual collaboration displayed by the nurses. Such advantages include an improvement in hospital services, a reduction in hospital fees, and perhaps even medical insurance for the poor.

1.7 Definition of Terms

The following is a list of an operational definition of terms developed particularly for the Malaysian context and the hospital setting.

Social exchange theory explains how one encounter affects the next and how interactions between the nurses and supervisors are maintained over time in the context of a field research investigation of a teaching hospital (Cropanzano & Mitchell, 2005).

Organisational knowledge creation theory refers to the process of making available knowledge created by the nurses (e.g. tacit and explicit knowledge) as well as connecting it to organisational knowledge (Nonaka & Takeuchi, 1995).

Innovative behaviour refers to the gradual adjustments of existing healthcare processes as an entirely new practical solutions procedure that should improve problem-solving efficiency in a hospital (Scozzi, Carvelli & Crowston 2005).

Knowledge sharing can be defined as a social interaction in which nurses share their own experiences (e.g. in terms of facts, skills, and insights) with others in seeking knowledge through interpersonal networks (Lin & Lin, 2007).

Tacit knowledge sharing is the knowledge that is hard to formalise as it is established in life, feelings, and skills. It is the knowledge that is usually shared between the nurses when working together which are acquired through the sharing of experiences, observation, and imitation (Lin, 2007).

Trust can be characterised as nursing's intangible assets that impact nurses' ability to form meaningful relationships with their co-workers, superiors, and patients (Holste & Fields, 2010).

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Perceived supervisor support refers to the nurse's belief in the extent to which their supervisor supports and values their contribution (Ladd & Henry, 2000).

Tie strength refers to the close relationships between two or more nurses including peers and supervisors, or within a team, that can be measured by examining the tie intensity (Levin & Cross, 2004).

Supervisor justice is defined as the condition in which nurses believe their supervisor is treating them justly or unjustly (Rupp & Cropanzano, 2002).

Organisational citizenship behaviour refers to "individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation" (Organ, 1988, p.4).

1.8 Summary

This section provides an overview of the organisation of this study, which is divided into six chapters. Chapter One introduces the study with a brief discussion of the study background, research context, and problem statement. This is followed by an elaboration of the research questions, the research objectives, the significance of the study, and the definition of key operational terms.

Chapter Two provides a review of the literature that supports the development of the theoretical framework. It explores the variables comprising the proposed hypotheses involving individual factors, tacit knowledge sharing, and innovative behaviour. This chapter also discusses the theories used in developing the theoretical framework.

Chapter Three discusses the methods used in this study. The quantitative survey method along with population, sample collection, and data collection procedures are addressed. Furthermore, the research techniques and procedures that specifically relate to this study, such as ethical considerations and the measurements used are discussed. This chapter also presents the measurements used, statistical procedures using Statistical Packages for Social Science (SPSS), Structural Equation Modelling (SEM) and Confirmatory Factor Analyses along with Partial Least Squares (PLS).

Chapter Four analyses the quantitative findings of the research. The demographic results were presented followed by the six steps in assessing the results of the structural model. Subsequently, analysis of SEM and PLS were computed.

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Chapter Five discusses the findings of the research in relation to the literature review and the conclusion. This study proves that certain relationships of the individual factors are related to tacit knowledge sharing and innovative behaviour. In addition, it was also found that there exist different types of partial mediation between the relationships of the variables. This chapter also highlights the theoretical and practical implications for the UKMMC public teaching hospital in particular. Finally, this study discusses the limitations of the study as well as recommendations for future studies.

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LIST OF PUBLICATIONS

Refereed articles

Constance, N.W., Zawawi, D., Yusof, R. N. R., Sambasivan, M., and Karim, J. (2018). The mediating effect of tacit knowledge sharing in predicting innovative behaviour from trust. *International Journal of Business and Society*, 19 (3), 934-954.

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Refereed conference paper

Constance, N.W., Zawawi, D., Karim, J., and Sentosa, I. (2018). The mediating effect of tacit knowledge sharing in predicting innovative behaviour from tie strength in a Malaysian public teaching hospital. *International Borneo Business Conference*, 4-5 October, Kuching, Sarawak.

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