

The Development of 5s-Kaizen And Service Excellence Measurement Framework for Malaysia Private Hospitals

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Abstract— Healthcare sector has emerged as one of the fastest growing segments over the last few years despite the global economic downturn. Healthcare sector in Malaysia has been nominated as one of the National Key Economics Areas which targeted to generate massive income for the country while maintaining the level of excellence services offered. The determination shown by the government in healthcare has been supported by both public and private healthcare institution of the country. In fact, the government keen to promote hospitals in the country as one of the medical travel destination in 2015. Although, healthcare service excellence is the upmost important issue being debated, hospitals in Malaysia are still facing with many issues especially neglected medical cases and patient waiting time. This issue is closely related to continuous improvement practices in the hospital. Therefore, this study focuses on the development of appropriate 5S-Kaizen measurement scales and service excellence in hospital. There are four identified antecedents of service excellence to be evaluated based on the implementation of 5S-Kaizen practices. The four antecedents are staff performance, service environment, service process level, and staff emotions. All scales were gathered from previous literature and have been adapted to the context of Malaysia. In future, the scale can be validated at public hospitals and private hospitals; hence, the goal under the 10th Malaysia Health Plan to maintain healthcare sector current growth rate can be succeed.

Keywords—5S, Kaizen, Service Excellence, Private Hospital

I. BACKGROUND OF THE STUDY

Worldwide, healthcare sector is the most significant quality indicator of the life of nations. Therefore, every country is continuously striving to improve the healthcare sector quality by enhancing their healthcare service and management system. Malaysia is among the country that view healthcare sector as the top priority to improve the nation life quality. The aspiration is stated in Malaysia Health Report 2015 [1] and is progressing for an improved-quality life of its nation by the year 2020. The government has spent a total of RM180 billion to upgrade healthcare infrastructures and improve health procedures. In Malaysia, there are three types of healthcare sectors known as; public, Non-Governmental Organizations (NGOs) and private sectors [1]. Public hospitals served 70% of the national healthcare demand, while private sector served 30% of the demand. Malaysia received 85-90% patients from ASEAN countries while the rest are from Japan, Australia, UK, Middle Eastern and European countries [2]. Currently, there are 139 public healthcare institutions including hospitals and specialist center to serve the Malaysian community. On the other hand, the private sector is handled by qualified private company such as Pantai Holdings Berhad, KPJ Healthcare and many more. Besides being regulated by the Ministry of Health, in most cases these hospitals have been recognized by international accreditations body, such as Joint Commission International, which accredits healthcare organizations and programs in the United States. Until September 2015, there are 127 members of Association of Private Hospital of Malaysia has been recorded. The growth of private sector is supported by the rising awareness among Malaysians to acquire better treatment and the government's efforts to promote medical travel destination concept. In 2010, there are 400,000 health tourists coming to Malaysia that generated RM 380 million of revenue. The target is to receive around RM 2.0 billion medical tourists by 2020 by expecting 10% annual revenue growth. Three healthcare sub-sectors have been identified to be key drivers of this growth: Bio-tech/pharmaceutical, health services and medical technology products [2]. Thus, most of the private hospitals in Malaysia have begun the upgrading of infrastructure and services to meet these aspirations.

Almost all established private hospitals in Malaysia were accredited by MSQH (Malaysian Society for Quality in Health). This award is recognized by the Ministry of Health Malaysia as the national accreditation body for healthcare facilities; services and internationally accepted by other countries such as France, New Zealand, India, Australia, the United Kingdom and Canada. To maintain hospital's sustainability, patient's satisfaction and excellence medical services are the

upmost concern of the administration. The situation is indirectly causing many hospitals adopt lean management practices to sustain patient's loyalty. Lean techniques recently have emerge as one of the management philosophy adopted by healthcare sector [3]. According to [4], lean is adapted in hospital to improve the quality of care, errors and delay, mitigate waste, improve orderliness [5] and documentation [5]. The rise in adaptation of lean in healthcare has been recorded by [3] where in their study, 39 articles have been reviewed to explain Lean management trend in healthcare sector from 2008 to 2012 around the world. The study confirmed that lean 5S, Kaizen and VSM are among the top three lean tools employed in the hospitals. In addition, general hospital, Emergency Department, Outpatient Department and Operation Theater are the most common research unit reported in the previous research. Besides, Lean practices have much impacted patient's service excellence level. This is supported by previous studies which revealed the strong relationship between hospital service quality levels with the delightfulness of the patients [6],[8],[9]. However, the strategy and implementation level varies according to each hospital. Voon et al., [9] for example stressed out three important strategies in achieving hospital service excellence; (i) service-oriented business strategy with appropriate human resource management, (ii) flexible organization structure and lastly (iii) adequate employees training.

In healthcare service, there are many issues and challenges for the hospitals to overcome in order to achieve service excellence. The service has to be customized according to each individual case while it possesses credence qualities which make it difficult for the patients to accurately assess the quality of service [10]. According to [11], a state of service excellence is when the hospital is fulfilling what is promised to the patients, providing individual attention, putting extra effort and handling problems and enquiries well. Patient's satisfaction has a positive significant relationship with loyalty. As mentioned by [12], a single unsatisfied customer can send away more business compared to 10 satisfied customers. On the other hand, [13] reported that the customer perceived service quality is the main driver to effective customer satisfaction, and the strong commitment of the hospitals is crucial in promoting health services. The study was carried out at one of the private hospital in Southern Malaysia with the sample size of 200 including staffs and patients. To conclude, the service excellence will significantly lead to satisfied patients to revisit the hospital in future. Thus, the current study attempt to develop 5S-KAIZEN and Service Excellence measurement framework; as one of the lean management practices suitable to be implemented among Malaysia private hospitals. The developed measurement were adapted from the traditional manufacturing practices with some amended to suit the private hospital in Malaysia. Although various studies related to the implementation of 5S-KAIZEN in the hospital; yet, most of the past studies were conducted within the US, UK, Nigeria, Japan and India healthcare context [6],[8]. Consequently, the stability and applicability of past findings across different national or cultural settings remain largely untested. Study conducted in Malaysia particularly is still low, specifically studies carried out in private hospitals. The study attempt to address this gap by aligning the propose framework within the context of Malaysia Private Sector.

II. ISSUES AND CHALLENGES IN PRIVATE HOSPITALS

In the current growing of patients-oriented health industry, quality of service act crucially as the suspension bridge between patients and hospital sustainability. Hospitals in Malaysia are generally not exempt from various complaints and incidents involving patients. For instance, previous study done by [8] claimed, there are minimum three Malaysia private hospitals received complaints regarding the misconduct cases of healthcare specialists for certain diseases. The same study also discovered that the service process level of the medical staff is still under the patient's expectation. Despite the issue on quality of care received, patient's waiting time is most problematic matters mentioned. Past scholars such as [14], [15] reported that 45% of the patients from the outpatient clinic complaints about the waiting time to be served. A Malaysian study about the waiting time in public hospitals by [14] found the waiting time for a patient to obtain treatment from a doctor is 4 to 5 hours, meanwhile the consultation time is between 10 to 15 minutes. This is due to the excessive number of patients (reached 19,353,222 patients in 2013 [16]) at public hospitals all over Malaysia. Likewise, for private hospital, the waiting time is more than 1 hour (on average) [17] especially for outpatient clinic. In contrast, another study found the waiting time for private hospital is between 20-30 minutes [8] depending on the unit or department. Long waiting times are a persistent challenge facing healthcare systems in both developed and developing countries [18]. Longer waits are associated with lower levels of patient satisfaction, reduced willingness to return, more missed appointments, poorer ratings of clinical providers, and inappropriate self-referral to higher level facilities.

Another essential point is staff's performance. Numerous studies [8],[19] found the hospital management regularly received complaints on issues such as doctor's professionalism, poor competencies level of newcomers and lack of empathy. Failing to meet or exceed patients' quality needs is not an option for any organization, however in a healthcare context this could only lead to a disaster [20]. Furthermore, study done by [17] found that healthcare provider did not provide a fast response to the patients and misplaced of patients files. This includes the willingness of staffs to answer patient's questions

and the ability of doctors and nurses to instil confidence in the customer. Equally important is the notification given by the in charge person to inform patients on their scheduled appointment. Moreover, the issue of unreasonable bills in comparable with the treatment received are among the common issues arise. In fact, most of the complaints received from patients middle-aged professionals with high incomes. These issues have to be taken care of by the hospital management to ensure customer satisfaction and quality of services offered in line with medical costs to be borne by the patients. One of the solutions that are suggested by past scholars is by the implementation of 5S-KAIZEN practices. Therefore, this current study proposes a measurement framework 5S-KAIZEN with an integration of Service Excellence Model as a tool to be employed in hospital. The propose framework is develop by taking into consideration some common 5S-KAIZEN elements mostly practiced in the Japanese manufacturing sector and service excellence model which has been developed by previous researchers such as [21], [22].

III. 5S-KAIZEN IN HOSPITAL

Among the lean tools adapted and practiced in the service industry especially healthcare, the 5S and Kaizen are among the top and famous practicable tools as well as it has been proposed in the study by [3]. 5S concept is originated from Japanese words; *seiri*, *seiton*, *seiso*, *seiketsu*, and *shitsuke*. Countries such Australia, Canada, Germany, Netherlands, New Zealand, the United Kingdom of Great Britain and Northern Ireland and USA have involved in high 5S projet since 2008. Meanwhile, KAIZEN means “Change for better” which refers to philosophy or practices that focus upon continuous improvement of processes in manufacturing, engineering, and business management. By improving standardized activities and processes, kaizen aims to eliminate waste. These concepts have been used in the industrial sector like Toyota and other companies. The concept of KAIZEN was introduced in Japan in 1950 when the government and management had a feeling that there was a problem in their current management system and a pending labour shortage [23]. KAIZEN implies improvement that involves everyone—from managers to the workers—and entails relatively little expenses [23]. KAIZEN is geared towards incremental change, alteration, transition, and transformation rather than disruptive changes or innovation. KAIZEN management represents a solid, strategic instrument, with a view to reach and surpass the company’s objectives [24]. Farris et al. [25] agreed that KAIZEN has improved the internal process of the organization which the employees are motivated to participate in future improvement activities. In the same study, KAIZEN has also contributed in goal clarity among employees in the organization. As well as [26] asserted that KAIZEN has impact on stimulating the understanding need for change among employees in the organization. Considering the facts, it can be concluded that, KAIZEN is an approach that emphasize problem-awareness and provides clues for identifying problems. Check sheet is used in measuring KAIZEN practice as mentioned by [27] in Table I.

Table I Measurement items of KAIZEN

Dimension	Themes	Items	Adapted Sources
Kaizen Themes	Improving management [28]	<ul style="list-style-type: none"> - The current work system reduced your mistake in conducting work - There are initiatives done to improve work environment 	[27]
	Process time reduction [29]	<ul style="list-style-type: none"> - The method implemented effectively improved your work productivity 	
	Standardization concept [29]	<ul style="list-style-type: none"> - The staff’s performance are always monitored by the hospital organization - There are information posters pasted by the department on the department wall - The work environment attractiveness is always updated by the administration 	

5S-KAIZEN has been well accepted practices to the healthcare sector as a systematic method of organizing and standardizing the workplace for lean healthcare [5], [30] because of the low-cost and limited use of technology. 5S-KAIZEN able to improve, integrates, and translates the continuum that involves such artifacts as products, goods, processes, and services in various healthcare settings. Those include clinical bedside settings, health services administration of clinics and hospitals, institutions related to health policy, and management. Shaman et al. [31] proved that the performance score by employees through graph presentation increased tremendously by weeks after 5S has been implemented. In similar vein, [32] claimed that 5S implementation has increased the awareness and morale of the staffs as well as reducing mistakes in quantity resulting from inattention. The implementation also improved the internal communication process and inter-human relations. In Scotland Cancer Treatment, the use of 5S has resulted customer waiting times for first appointment from an average 23 to

12 days and improvement of customer flow time for patients of 48% [33]. Table II presents the measurement items for 5S. These items can later be converted into a check list format to facilitate the monitoring process.

Table II Measurement items of 5S

Dimension	Elements and Definition	Items	Adapted Sources
5S Elements	SEIRI (SORTING) <i>-The idea is to eliminate the unnecessary items from the workplace. [34]</i>	<ul style="list-style-type: none"> - The implementation of 5S working practices improved my working efficiency - The unwanted items has been removed from your work place - The unwanted work procedures has been removed from your work system - Work place becomes tidier after the implementation of 5S - No unused documents/tools are present after 5S implementation - Unnecessary files/tools are easily identified after 5S implementation 	[30] [31]
	SEITON (SET IN ORDER) <i>-Focuses on the need for the workplace in order. [34]</i>	<ul style="list-style-type: none"> - The implementation of 5S reduced time consumption in doing task - The implementation of 5S reduced delay in job process - The implementation of 5S reduced time for searching files/tools - All related documents have identification label after 5S implementation - All related equipment/items have identification label after 5S implementation - The directional boards in this department are clearly marked and visible 	[30] [31]
	SEISO (SWEEP) <i>-Keep the workplace clean as well as neat. [34]</i>	<ul style="list-style-type: none"> - Comfortability of rooms for general use (pantry/toilet/prayer room) - All waste bin are labeled clearly and specifically - All work documents are properly stored - All machines are appropriately located - There are sufficient cleaning tools (brooms, mop, dust scope etc.) 	[30] [31]
	SEIKETSU (STANDARDIZE) <i>-To allows control and consistency. [34]</i>	<ul style="list-style-type: none"> - There is evaluation made on the 5S implementation - The evaluation on 5S facilitate in improving work system efficiency in overall - Apparatus are checked daily to ensure there are always located at original position when not in used - Documents and files are checked daily to ensure they are at their supposed location - All related furniture are checked daily to ensure they are at their supposed location 	[30] [31]
	SHITSUKE (SUSTAIN) <i>-Maintaining standards and keep the facility in safe. [34]</i>	<ul style="list-style-type: none"> - All related furniture are checked daily to ensure they are at their supposed location - Information boards are up to date and regularly reviewed - All procedures boards are up to date and regularly reviewed - You are comfortable with the 5S implementation - You are willing to tidy up your workplace by yourself 	[30] [31]

IV. HOSPITAL SERVICE EXCELLENCE

In the healthcare context, there are several conceptual frameworks/models for evaluating the quality of care has been proposed. WHO (2006; 2010) for example measures quality of care by six dimensions; high quality care should be effective, efficient, accessible, acceptable/patient-centered, equitable and safe. Among the quality model, SERVQUAL/modified SERVQUAL has been used as main instrument in 49% of previous studies [22] including cases from Malaysia (e.g.[35],[36]). Previous studies have confirmed that health service excellence is a multidimensional model. Specifically, [6] measured hospital's service quality from four perspectives; service facility, service personnel quality, service professionals' quality, service performance as and output performance. There are four measures of service excellence to be evaluated based on the implementation of 5S-Kaizen practices. The four measures are staff performance, service environment, service process level, and staff emotion were adapted from [13],[37],[12]. Service excellence can be achieved when organization managed to retain their customers [37]. As there has been growing concern in most of the service organization to delight

customer in order to maintain competitiveness, the drivers of dissatisfaction has to be reduced and a systematic and effective working process has to be implemented. Table III lists the measurement item for hospital service excellence.

Table III Measurement items of Service Excellence

Dimension	Antecedents and Definition	Items	Related Sources
Service Excellence	Staff Performance <i>-Behaviors performed by the employees in serving the customers of the company. (cited in [38])</i>	<ul style="list-style-type: none"> - The staffs of this department are professionally dressed - Medical staffs are punctual during consultation - Medical staffs are very knowledgeable and I am satisfied with the diagnose - Medical staffs are customer-friendly and approachable - Medical staffs are committed in serving me - Medical staffs treat me with respect - Medical staffs are empathetic - Medical staffs communicate with me clearly with acceptable language 	
	Service Environment <i>-Style and appearance of the physical surroundings. [37]</i>	<ul style="list-style-type: none"> - This department has an attractive surroundings - This department is always clean and looks fresh - The furniture in this department are align properly - The surrounding environment in this department makes me comfortable - The surrounding environment in this department makes me feel safe to get treatment - The hospital is creative and innovative (new ideas and approach) in serving the patients 	[39] [13] [37] [21]
	Service Process Level <i>-The method and sequence in which the service operating systems work and how they link together to create the service experience and outcome that customers will value. (cited in [37])</i>	<ul style="list-style-type: none"> - I am examined by medical staff carefully before my condition is determined - The waiting time to get consultation is relevant - Sufficient time is spent on me during consultation with medical staffs - Expert medical staffs are always available at each time I come for treatment - The administration process is fast and easy - Hospital provide resources to enable staff to provide excellent service 	[8] [40]
	Staff Emotion <i>-Behaviors and attitudes of the front line employees. [37]</i>	<ul style="list-style-type: none"> - I am happy with the medical staff service - I will recommend this hospital to my friends and family because of the service quality - Medical staffs are confident-looking and energetic during working - Medical staffs always joyful and make me feel close to them 	

V. 5S-KAIZEN MEASUREMENT FRAMEWORK

Based on the literature review, hospital's service excellence initiatives around the world have enjoyed varying degrees of success. However, the measurement for the excellence has not been designed consistently nor has there been a standardized approach to the proper implementation as it may varies between private and public hospital. Hence, this study attempt to develop standardized framework that can be applied in any hospital in especially Malaysia hospitals. the study proposes the 5S-KAIZEN measurement framework that can be tested and expend for future study as displayed in Figure I. The study hypothesized;

H_1 : 5S practices significantly influence the Hospital Service Excellence

H_2 : Kaizen practices significantly influence the Hospital Service Excellence

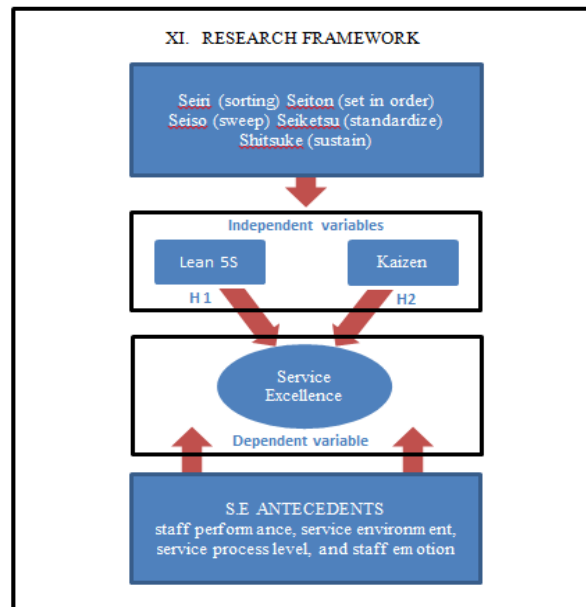


Figure I Research Framework

VI. CONCLUSION

As Malaysia is positioning itself as the hub of medical tourism in Southeast Asia, more efforts are required to develop and promote the industry and issues impacting industry growth such as service quality and patients' satisfaction should be treated in a cooperative manner between government and private sector. Hence, the study will enlighten some issues related to lean management in healthcare specifically the impact of 5S and Kaizen implementation on private hospital service excellence in Malaysia. The influence between these two factors on hospital's service excellence level can further be investigated and explored.

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BIOGRAPHY

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Mohd Hafeez Badrul Hisham is a fourth year undergraduate student of Faculty of Technology Management and Business at Universiti Tun Hussein Onn Malaysia. Currently, he is majoring in Production and Operation Management. He is very interested and committed in pursuing a career in the oil and gas field under operational management. Currently, his bachelor degree final year project of 5S and Kaizen Influence towards Private Hospital Service Excellence in Johor was his first research experience. This project has enhanced his understanding on the 5S and Kaizen implementation in the healthcare service sector which is rarely studied in Malaysia. Furthermore, this project enabled him to understand the service excellence level in the hospital after the 5S and Kaizen been implemented. In overall, his final year research experience was very rewarding and he hopes to further research in future study.

Nor Hazana Abdullah is an Associate Professor at the Faculty of Technology Management and Business at Universiti Tun Hussein Onn Malaysia. She earned her B.S. in Psychology from Indiana University of Blooming, USA, Masters in HRD from Univesiti Teknologi Malaysia and PhD in Technology Management from UTHM. Her research interests include industrial psychology topics, HRD/M, leadership, HCI and innovative work behavior.