Developing a Service Culture-Value Chain for Hospitals

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Abstract—**This paper presents the empirical findings of a nation-wide survey to develop a multi-item scale for service culture and linked it to the various consequences from the employee's and patient's perspective. The qualitative and quantitative techniques were employment. The Focus Groups was conducted, then a nation-wide mail survey (more than 250 hospitals covered, employee questionnaire with n=1558). The scale development analysis process included various evaluations on the psychometric properties of the scale and AMOS software was used. The Exploratory Factor Analysis and structural equation modeling processes found that 21-item HospiSE scale was made up of three dimensions (i.e., Employee, Patient and Competitor orientations). The results of the measurement modelling process indicated that the multi-item measure has an overall good fit (e.g. GFI = 0.93, CFI = 0.917). The measure was found to be reliable and valid. It was also positively related with employee-perceived service quality and satisfaction. Besides, at the organizational level the findings indicated that service culture has a potential positive association with the patient-perceived service quality of the hospitals A new service culture-value chain was engineered for the benefits of hospitals.**

Index Terms—**Service culture-value chain, hospitals, measurement, Malaysia.**

I. INTRODUCTION

Delivering superior service has been regarded as one of the critical requirements for hospital excellence and this will help to enhance quality of the healthcare sector toward sustainable hospital and thereafter leveraging quality of life of the community served. While many services marketing and service management researchers and practitioners have stressed the measurement and management of service in their quest for service excellence [18], in line with the call for green service management, this paper presents the empirical findings of a nation-wide survey for developing a multi-item scale for hospital service excellence.

II. FROM MARKET ORIENTATION TO SERVICE EXCELLENCE FOR HEALTHCARE

Organizational culture and quality management theories have gained much attention for advancing the quality of organizations since the early 1980s. Nevertheless, the linkage of quality and market-oriented practices was formally operationalised and published in 1990s. In fact, numerous market and service orientation theories and models were developed since then (e.g. [14], [9], [10], [3] and [12]) and thereafter have benefited many management and marketing

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researchers in terms of suggesting related orientations to impact service organizations' performance and competitiveness (e.g. [6]; [18]). For instance, the culture-oriented operationalisation of Narver and Slater (1990) which included the customer, competitor and inter-functional coordination orientations were much referred. This research also stressed the strategic elements of market orientation and they were adapted to complement the contemporary quality management models for service excellence in the healthcare sector.

Integrating organization culture and market orientation theories, Lytle (1998) and other service researchers (e.g. [18]; [1]) tried to operationalize the service-driven organizational orientations for advancing service quality. The will be important for hospitals as healthcare is one of the critical service industries worldwide and it affects directly the quality of life of the community. However, many countries are still facing continuous challenge in delivering a high standard of healthcare services while trying to be efficient and cost-effective at the same time [7]. In this regard, it is important to understand the specific characteristics of healthcare services and develop the relevant model to advance the service delivery and management systems. Fig. 1 illustrates the relevance of the service culture to create value. The market-oriented service culture is the set of values and practices for serving the internal and external customers well and thus create value for the hospitals effectively and efficiently. This service culture encompasses three dimensions, namely the employee, patient and competitor orientations of the hospitals. The hospitals tend to put the interests of employees and patients first, at the same time understand the competitors.

III. METHODOLOGY

This is a measurement-based descriptive research for developing a measurement model to measure hospital service excellence for the hospitals in Malaysian context. The service culture and overall service quality of the participating hospitals in Malaysia (public and private hospitals) were assessed, from the employees' and patients' perspective. The main objectives of this survey research include identifying the dimensions of the hospital service excellence, developing a measurement model called hospital service excellence (HospiSE). Thereafter, this measurement model was linked to employee-perceived quality and satisfaction as well as the patient-perceived service quality, satisfaction and loyalty. It suggested for a value chain of service culture.

The research employed both qualitative and quantitative approaches for developing and validating the measurement model. First of all, literature review was done and the related seminal measurement papers on developing the marketing constructs and service quality measures [16]. For assessing the hospital service excellence, the planned sample size was about 4500 (averagely 30 from each hospital). Following the

suggestion of Krejcie and Morgan (1970), the intended sample size was adequate. The Human Resource Manager or Head of Quality Management Unit was the contact person responsible for the distribution and collection of questionnaires within the specific organisation.

The collected data were processed according before the quantitative analyses which encompassed measurement modelling, correlations and regressions. Reliability check and confirmatory factor analysis were done on the survey data to confirm as well as validate the factors which were identified through the exploratory factor analysis earlier on [15]. The numerous goodness of fit indices (e.g. Normed , CFI, GFI, RMSEA, AGFI and TLI) were used to confirm the good of the measurement model which would help to identify the critical success factors or determinants. The validity tests of convergent validity, discriminant validity and criterion-related validity were also conducted accordingly. Finally, a linkage analysis was done between the employee perceptions and patient perceptions data using the hospitals as units of analysis (n=74).
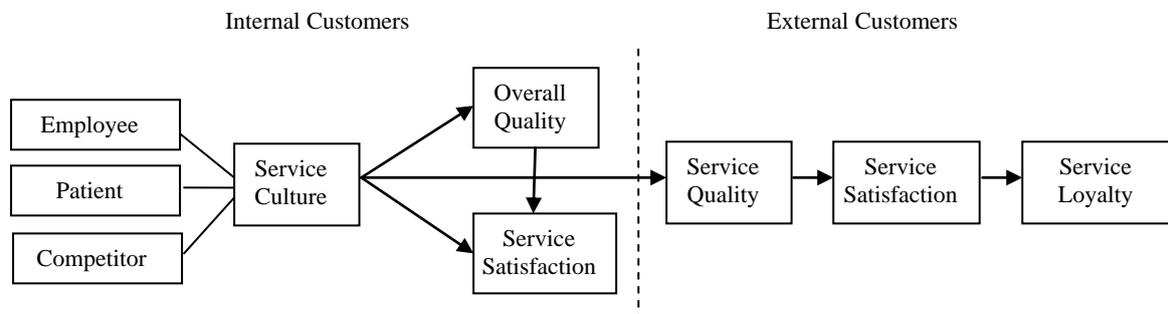

Fig. 1. Service culture-value chain for the hospitals.

IV. FINDINGS AND DISCUSSIONS

The respondents of this survey research comprised employees from different departments and positions (e.g. nurses, doctors) who participated in the mail survey to gauge the service culture of hospitals. A total of 1636 usable questionnaires were generated. However, the final sample size (without outliers) for further quantitative analysis was n=1558. The general characteristics of the employee respondents are: 62 public hospitals (81%), 80% female employees, 57% nurses and 6.2% doctors, age groups (31% aged 30 years or below, 33% aged 31-40, 22% aged 41-50 and 13.3% aged above 50). The patients data consisted of 3621 questionnaires answered by the patients of 74 hospitals.

The normality of the data was checked before the further analyses such as Factor Analysis were done. Both the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to enhance the validity of the instrument. The exploratory process was used to first unearth the underlying factors, thereby illustrating the relationship between the latent factors (dimensions) and the observed variables (items), while the CFA was used to confirm whether the items actually belong to the dimension for which they are theoretically designed [17]. For the EFA, the principal component analysis was used as the extraction method and the factors were rotated using the varimax rotation method with Kaiser normalization. Prior to that, a reliability test was performed and only items with an index greater than 0.4 were retained for factor analysis. The EFA provides a three-factor solution with 71.84% total variance explained (Table I).

This study reported goodness-of-fit indices such as the χ^2, GFI, CFI, TLI, IFI, NFI and RMSEA. The result shows that the hypothesized model has an overall good fit (χ^2/df =3.18, GFI = 0.93, CFI = 0.917, TLI = 0.987, IFI= 0.917, RFI = 0.890, NFI = RMSEA = 0.09). The GFI, CFI, TLI and IFI are above 0.9 indicating good fit between the hypothesized model and the data structure.

TABLE I: EXPLORATORY FACTOR ANALYSIS SHOWING THREE COMPONENTS OF HOSPISE

Items	Component		
	EO	PO	CO
1. Hospital is committed in serving the patients.		0.82	
2. Hospital serves based on good understanding of patient's needs.		0.79	
3. Hospital believes in delivering excellent service to the patients.		0.82	
4. Regularly measures patient satisfaction.		0.70	
5. Hospital solves the patients' problem(s) as fast as possible.		0.52	
6. Hospital knows its competitors well.			0.77
7. Hospital responds fast to the competitor's actions.			0.79
8. Targets for patients that it can serve better.			0.79
9. Hospital always tries to be better than its competitors.			0.72
10. The employees of the Hospital can relate well.	0.68		
11. There are good co-ordinations among the Hospital's staff.	0.73		
12. Good communication among different functions in the Hospital.	0.74		
13. Patient information is easily accessible by other departments.	0.64		
14. Povides resources for staff to provide excellent service.	0.67		
15. Hospital is creative and innovative in serving the patients.	0.66		
16. The employees who serve the patients are very well trained.	0.69		
17. Employees who interact with patients are motivated or joyful.	0.77		
18. Hires sufficient number of staff for delivering quality service.	0.76		
19. Hospital chooses the suitable staff to serve the patients.	0.76		
20. Employees are given the authority to decide and act.	0.73		
21. Ensures excellent safety for employees and patients all the time.	0.68		
The Eigenvalues	7.11	4.19	3.78
Variance Explained in % (Total=71.84%)	33.9	19.9	18.0

To assess the degree of uni-dimensionality of the

constructs and the convergent validity of the items representing the constructs, measurement models were specified for each construct and the CFA was carried out for the individual constructs. This is a procedure to check how closely the designated items represent the construct. The goodness of fit index of 0.90 or higher for the model suggests that there is no evidence of lack of uni-dimensionality ([5]; [2]). Table II summarises the result of the CFA on the various dimensions of hospital service excellence.

TABLE II: ESTIMATES AND FIT INDICES FROM CFA ON HOSPITAL SERVICE EXCELLENCE

Construct	No of Items	Range of Std Regression	GFI	CFI	TLI	Bentler Coef.	RMSEA
Employee (EO)	12	0.737 – 0.837	0.89	0.90	0.86	0.90	0.07
Patient (PO)	5	0.723 – 0.886	0.95	0.98	0.94	0.98	0.06
Competitor (CO)	4	0.853 – 0.896	0.95	0.98	0.89	0.96	0.07

From the result, it is evident that the respective items indeed belong to the latent constructs as hypothesized. Therefore it can be concluded that hospital service excellence comprises three components: *Employee Orientation, Patient Orientation, and Competitor Orientation.* Items representing each construct have a strong convergent validity. The reliability tests of these dimensions indicated satisfactory results (i.e., 0.90 to 0.94). The proposed three-dimensional service culture was found to have a positive and significant relationship with the employee-perceived overall quality and service satisfaction (R-squares of 0.63 and 0.71 respectively).

In order to test the impact of service culture on patient-perceived service quality of the hospitals, a linkage research was employed where hospitals were the unit of analysis. The employee-perceived service culture and the patient-perceived hospital service quality were computed accordingly for the respective participating hospitals. This process was challenging as some hospitals had the employee data but had no patient data, or vice versa. As such only seventy-four complete and usable sets of service culture-service quality data (by hospitals) were available to investigate the association between these two key variables was anlaysed. The patient-perceived service quality was computed from a total of 3621 usable Forms for 74 hospitals. The findings suggested that there was significant association between the two variables (coefficient of 0.20, at 0.10 level). A more conclusive and/or stronger correlation would be expected if the sample size (number of participating hospitals) was larger.

There were positive and close relationships among the patient-perceived service quality, satisfaction and loyalty. The patient-perceived service quality was a single-dimensional variable consisted of 10 items, service satisfaction (2 items; overall good service and satisfied) and loyalty (2 items; repurchase and recommendation to others). The results of the three simple regression analyses were as follows:

1) service quality-satisfaction ($R^2 = 0.55$),
2) satisfaction-loyalty ($R^2 = 0.38$), and
3) service quality-loyalty ($R^2 = 0.54$)

The service culture has positive impacts on service quality, satisfaction and loyalty for the two groups of customers (internal and external). These empirical findings strongly indicated that inculcating and nurturing the service values among the employees of different departments hospital-wide would be necessary as the said service culture would bring much benefit to the employees and patients.

V. CONCLUSIONS AND IMPLICATIONS

In the quest for service excellence, many service organisations tend to emphasize customer-perceived service quality as it is one of the critical factors to enhance customer satisfaction and loyalty. This is also found to be true for hospitals, especially with the increasing awareness and expectations of healthcare services for better value for money as well as quality of life. In this study, the dimensions for hospital service excellence were identified through qualitative and quantitative approaches. A measurement tool for hospital service excellence (HospiSE) was developed then it was linked to employee and patient perceptions of quality, satisfaction and loyalty data. The new proposed chain will stir further discussions and investigation to advance service science and hence quality of life.

The service quality and market orientation theories, focus groups and survey results were used to generate the numerous dimensions and their respective items for understanding and measuring culture of service excellence of Malaysian hospitals from the employees' perspective. The hospitals in Malaysia (public and private) were assessed. Mail surveys were carried out nation-wide. After undergoing the necessary research process, this measurement-based descriptive research has identified the three dimensions of hospital service excellence, namely: employee, patient and competitor orientations. The various psychometric properties of the scale were systematically evaluated accordingly to ensure that the measurement model was found to be valid and reliable. The linkage between the service culture, overall quality, service satisfaction (employee's perceptive) and service quality, satisfaction and loyalty (patient's perceptive) was promising. Therefore, the findings have strongly indicated to hospitals that service culture is crucial for satisfying the employees and thereafter positively impacting the patient satisfaction and loyalty. Nevertheless, the roles of other potential service management theories and models such Kano model, human factor engineering and Kansei engineering if employed and appropriately integrated will benefit the future process of engineering and advancement of the proposed service culture-value chain for hospital excellence.

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