

RESEARCH ARTICLE

# Hospital Service Quality Assessment and Analysis: A Multi-Perspective Approach

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**Abstract:** Hospital service is critical to analyze because several stakeholders are essential to the inputs, processes and outputs of the entire service system. These stakeholders include patients (service recipients), health professionals (direct service providers), and hospital management (indirect service providers). Since the core of hospital service encompasses the welfare of humans, it is crucial to uphold and continuously improve service quality not just for the service recipients, as traditional service quality measurements do, but also for the service providers through a multi-perspective framework integrating significant factors for all key stakeholders in the assessment.

Given this objective, we have initially developed a framework using the basic structure-process-outcome service components. The proposed dimensions were statistically validated through structural equation modeling and furthermore through qualitative data gathering, resulting to a streamlined framework with specific dimensions that are significant across all stakeholders. After an application to a private hospital, the integration of all stakeholders' perspectives became advantageous in exposing alarming dimensions that need improvement and dissatisfied stakeholders who need further attention. As such, the multi-perspective assessment proved to be a holistic approach in promoting overall satisfaction for not just the patients towards their service experience but also the service providers towards their service performance.

**Keywords:** Healthcare Service Quality, Healthcare Service, Structural Equation Modeling

**JEL Classifications:** I19, L89, C39

Healthcare is one of the most essential service industries in society, as its very core deals with the welfare of actual human lives. In any healthcare institution, more so in the bigger institutions such as hospitals, it is undeniably crucial to uphold service quality in order to carry out its purpose to continue

bringing better health outcomes to society (Sacramento Regional Research Institute, 2005). Then again, service quality in healthcare may be more complex compared to other industries not only because of the uncertainties in health outcomes (Smith, Stepan, Valdmanis, & Verheyen, 1997) but also because of the several key

stakeholders who are all equally essential to the inputs, processes and outputs of the entire service system.

Healthcare service quality, especially in hospitals, is highly influenced by the key people who make up the system and contribute to how services are managed, rendered and received. These stakeholders are the patients, who are the service recipients; the health professionals, the direct service providers; and also the hospital management, which are the indirect service providers. These important people define hospital service quality according to their roles and interests (Piligrimiene, 2010), thus the need to address the concerns of all these key stakeholders so as to ensure their overall satisfaction as well as their involvement in upholding hospital service quality effectively and sustainably.

The patients are the main service recipients, seeking service satisfaction through effective and quality healthcare services that provide better health outcomes (Herrera, Roman, & Alarilla, 2010). Several service quality measurements have catered mostly to customer satisfaction, focusing on the complete service experience of customers from their perception of the actual delivery of services until the outcome of the services availed. A lot of service quality frameworks in literature, like Grönroos' framework and the SERVQUAL framework, have defined various dimensions that are anchored in the customers' perceived service quality (Martinez & Martinez, 2010) similar to patient satisfaction surveys commonly used in hospitals nowadays (Min, Mitra, & Oswald, 1997).

Customer-based service quality frameworks became more prevalent in literature upon the reform of healthcare systems towards more patient-oriented services, having the intention to realize the customers' perception of service by measuring how well their needs are met and what aspects influence their satisfaction (Chimed-Ochir, 2012). This exhibited that the focus of service quality measurements on the medical/technical side of healthcare service in terms of the quality of the diagnoses and medical outcomes as well as how the healthcare professionals perceive quality was redirected to the interpersonal aspects of service, which caters more to the quality of communication and attitude of the service providers towards their customers and how the service recipients perceive this quality. This turnaround in focus exposed the complexity behind how these important stakeholders define service quality in different

perspectives, thus leading to different expectations and even approaches in service quality assessments (Buciuniene & Piligrimiene, 2008). The same concept was explored by the study conducted by Buciuniene & Piligrimiene (2008), as the authors asserted the difference in the service quality perspectives of key healthcare stakeholders and looked into the integration of these perspectives in order to cater to the needs of each one when measuring service quality. The authors pointed out how the healthcare system still lacks a uniform instrument that measures all significant aspects of service quality given this complexity and difficulty behind healthcare services and its assessment. Hence, the authors enumerated the most important quality dimensions for each key stakeholder and analyzed how the voices of each of these key players can reveal how we can measure healthcare service quality more comprehensively. Piligrimiene (2010) continued the research and pushed to assert how service quality evaluations becomes meaningful only if it is defined clearly and completely, which accentuates considering and analyzing all perceptions of service quality coming from the different key people in the system.

Looking only at the perspective of the customer in assessing service quality may overlook the service quality perception of the service providers, which is also an equally critical input in improving healthcare service quality. Radharamanan & Godoy (1996) pointed out that healthcare service often fail to meet the expectations and needs of the customers and deliver effacious service due to the lack of sufficient resources in constantly improving the system. After all, continuous improvement is the essential purpose of assessing service quality in the first place, and the feedback coming from service providers will be very useful in identifying the healthcare service aspects that need to be further developed in order for them to have better means to improve the quality of their service delivery as well.

The health professionals (i.e. the direct service providers) are also internal customers in the service system, wherein their service performance is dependent on how the hospital management (i.e. the indirect service providers) governs the system, while they get satisfaction out of the positive feedback of their patients that can have an impact on boosting their credibility and medical careers. These crucial roles of the service providers in the service system establish hospital service quality and correspondingly give way

to significant service attributes that will strengthen service quality assessments in healthcare. Their perception of hospital service quality is important given the firsthand insight and involvement on how services can be better improved not only for their patients' sake but also for their ease in delivery and management of services (Buciuniene & Piligrimiene, 2008). Because of this, we are redefining service quality in healthcare by evaluating it in the perspective of not just the recipients but also the providers given that each key stakeholder can both affect and benefit from the output of a service quality assessment. With this, it can further increase the satisfaction of all parties on how they either provide or receive services. Thus, it is crucial to incorporate the voices of each of these key people in measuring significant service factors using a uniform assessment tool, as this multi-perspective framework enables all key stakeholders to gauge the service indicators that are relatable and even beneficial to each one of them.

A unified assessment process and instrument can all together consider the needs of each stakeholder and pave the way to find that compromise on how service dimensions should be in place to cater to the different expectations of everyone. It will outright expose all flaws of the service system in the eyes of the important people who contribute to and benefit from all aspects of it. Each significant dimension will be evaluated equally by all stakeholders, which can unveil how each dimension is working for each stakeholder and can potentially lead to striking a balance among all their needs out of each service element. Hence, a multi-perspective framework enables not only addressing the constant inefficiencies of the process that are normally often perceived by the service recipients, but also evaluating service dimensions in the eyes of the service providers as they respond to the needs of their customers. The unified assessment would allow for a comprehensive and holistic improvement in delivering healthcare service to ensure the safety and well-being of all stakeholders and not only of the patients, which is the focus of several studies.

## Methodology

An intensive review of facts, opinion and even personal observations was conducted, as we scrutinized related literature and sought healthcare professional

advice in building up the foundation of this study. After gathering several references and comparing various proposed service dimensions in literature, we created an initial four-level hierarchical framework that stemmed from the three basic service components proposed by Donabedian (1980).

### *Initial Survey Instrument and Participants*

The initial survey used to validate the proposed framework enumerated all the dimensions from all levels of the framework's hierarchy with their respective definitions or descriptions based on literature (Refer to the Appendix section). The respondents of this initial survey were sample sizes from each group of key hospital stakeholders – i.e. the patients, both inpatients and outpatients, or the patients' companions (sample size obtained = 45); the health professionals represented by doctors, nurses and licensed laboratory specialists (sample size obtained = 83); and hospital management personnel who come from the different departments within the organization, e.g. Human Resources, Purchasing, Accounting, Information Technology, Customer and Quality Management, etc. (sample size obtained = 42). With this, the respondents were asked to rate the level of importance they perceive of each dimension as well as the level of satisfaction each dimension would give them in a hospital setup, and this was using a 5-point Likert scale. The highest rating of 5 for the level of importance signifies that the particular dimension is critically important to the stakeholder's perception of hospital service quality, as it is an essential part of what they expect out of hospital services, be it from a customer perspective or service provider perspective. On the other hand, the highest rating of 5 for the level of satisfaction implies a great satisfaction brought to the stakeholder when the particular dimension is in good quality and is further improved in the hospital. These questions were given in order to have a gauge on how significant each dimension is to each of the stakeholders, which then served only as an input to the statistical model to validate the proposed framework.

### *Statistical Tool*

With several dimensions already proposed in the initial framework, a structural equation model (SEM) was seen the most suitable test for the purpose of the

study after extensive research. The SEM test would be used to statistically validate the initial hierarchical framework through the significance as well as the strength of relationships among the dimensions and between their corresponding indicators. The SEM tool was proven fit to be used in validating the study after undergoing the test and having results with significant composite reliability values, i.e. all values above 0.7 (Refer to Table 8 of the Appendices for the detailed SEM results).

The relationships proven among the dimensions determined how each dimension can influence the other to some extent. On another note, the significance of the indicators and dimensions also translated to what factors would enable all key stakeholders to evaluate hospital service quality in a more effective means. The SEM validation vouched how the framework would be successful in assessing overall hospital service quality and in predicting the overall satisfaction of all key stakeholders.

To make this possible, we conducted data gathering in a chosen host tertiary-level private hospital. An initial survey was distributed to each group of stakeholders in order to tally the level of importance as well as the level of satisfaction that can be obtained from each proposed dimension. The data drawn from this initial survey were inputted to the SEM software (i.e. SmartPLS), wherein the third-level dimensions of the proposed framework were used as the latent variables of the model and the fourth-level dimensions as the observed variables. Using a model per stakeholder, the fourth-level dimensions or the specific indicators of the initial framework were validated, and the statistically significant dimensions in the perspective of each stakeholder were identified.

#### *Final Validation and Case Study*

Given that ALL dimensions from the proposed framework resulted as significant after the SEM validation, we validated and dissected further these results through a series of more in-depth interviews with the stakeholders regarding their respective definitions of healthcare service quality. After both quantitative and qualitative validations, the initial framework was streamlined and somewhat simplified, as we retained only those indicators that are significantly relatable to ALL key stakeholders according to both the SEM tests conducted per stakeholder and the interviews done

afterwards for further validation. This streamlined framework was transformed into a multi-perspective assessment tool or a final survey instrument, which all stakeholders can actively and effectively utilize in expressing their upright evaluation of hospital service quality.

We then applied this instrument in a case study in another private hospital. This was done in order to further examine the relevance of the study and explore the advantage of having a multi-perspective service quality assessment, as opposed to having only a patient service satisfaction measurement in tertiary-level private hospitals, where strategic evaluations and decisions are more feasible. In the application of the final survey instrument, a total of 174 respondents were gathered using stratified random sampling. The sample size of each group of stakeholders was computed at a confidence level of 95% and an error of 10%, wherein the population size of each group was based on the daily average number of patients in the hospital, the number of employed health professionals as well as the number of management personnel respectively. As such, the actual survey respondents consist of 50 patients, 80 health professionals and 44 management personnel. The patients approached were both inpatients and outpatients; the health professionals considered were mainly doctors and nurses employed by the hospital; while the hospital management personnel came from different departments such as the Accounting Department, HR Department, Medical Records Department, Director's Office, etc.

The final assessment survey instrument consisted of three sections. The first section of the survey asked the respondents about their perception of the importance ranking of each service dimension from the streamlined framework. This section set the prioritization for the dimensions that came out as needing further improvement, and this ranking became very crucial in the calculation of the final scores resulting from the survey as it was the basis of weights in the computations. The second section of the survey dealt with the core assessment of hospital service quality based on all the significant indicators from the final framework, as a result of the SEM tests per stakeholder and further interviews. This section evaluated the perceived service quality of all stakeholders over each indicator as well as each stakeholder's current satisfaction level over each dimension. Again, a 5-point Likert scale was used for the purpose of this survey

with corresponding descriptions of what each score means for better interpretation of the respondents (Please refer to Table 7 for the description of the rating scale used in the final survey). Moreover, each survey item made use of the same definition of each dimension and indicator from the initial survey given the established clarity of these descriptions during validation. Finally, the last section of the survey was an open question wherein the respondents could further elaborate their assessments and place their comments, suggestions and other insights regarding the service quality of the hospital being evaluated. This portion provided more specific observations coming from each group of stakeholders and even revealed the root causes and/or some potential solutions of identified service deficiencies and problems of the hospital being assessed.

## Conceptual Framework

The initial framework conceptualized after an exhaustive review of related literature was hierarchical in form, having four levels of dimensions based on different proposed frameworks in service quality. The first-level dimensions are based on the three basic service components developed by Avedis Donabedian, i.e. structure, process and outcome (Fletcher, 2000). These service categories sum up all the different aspects of healthcare service, which are also greatly influenced by each group of stakeholders – from the environment and resources of the hospital to the actual delivery and consequences of healthcare services (Quigley et al., 2008). In as much as patients are mostly concerned about service outcomes, both health professionals and hospital management also take part in determining the level of quality of such outcomes. Moreover, just as the health professionals and hospital management mainly affect the process and structure of service respectively, the service experience of the patients is also affected by these main service components. With this, the initial framework made use of Donabedian's conceptual model to set the main groupings for more specific factors in healthcare service.

The structure-process-outcome model of Donabedian, being the first-level dimensions of the initial framework, branches out to the second-level dimensions that are anchored in Grönroos' proposed service categories. Grönroos' perceived service

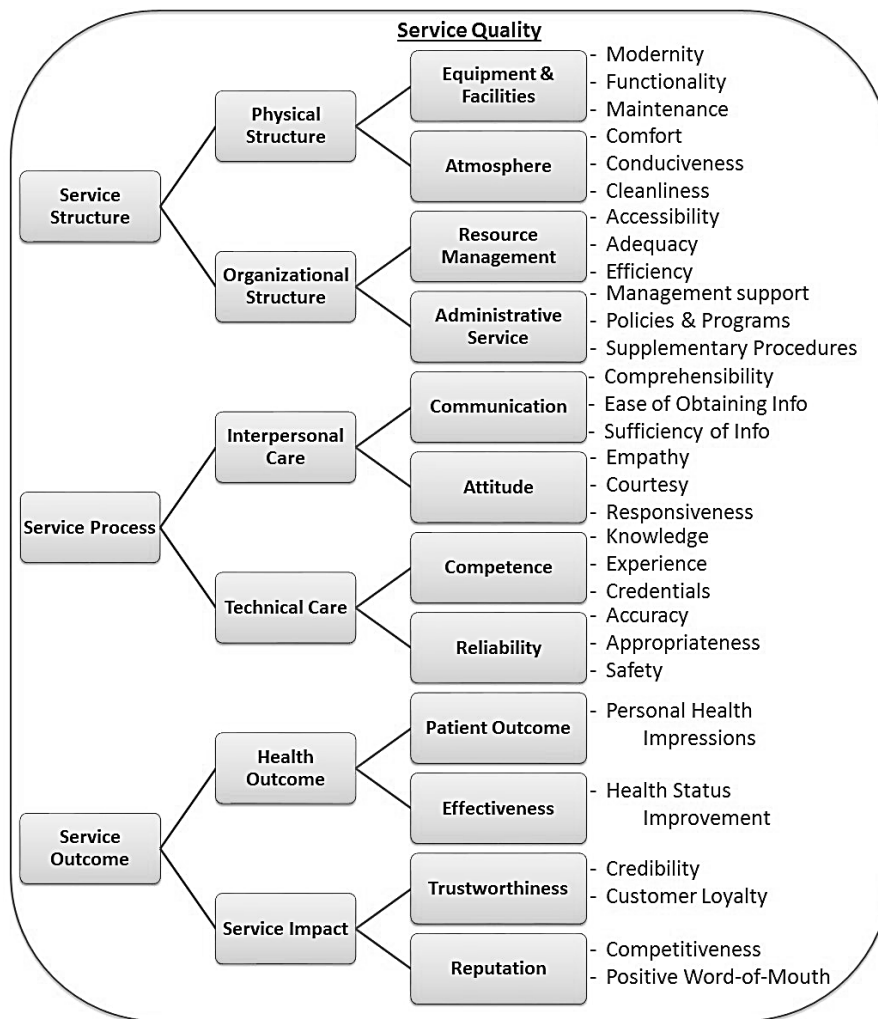
quality model proposed two basic categories – functional quality, referring to the actual manner and circumstances of how service is done, and technical quality, signifying the technical side and outcome of service (Martinez & Martinez, 2010). These categories were applied in the healthcare setup by further dissecting the structure-process-outcome components into factors that are directly perceivable by the patients (e.g. physical structure, interpersonal care, service impact) and those that are technical in healthcare nature (e.g. organizational structure, technical care, health outcome).

Under the functional and technical aspects of the structure-process-outcome components are specific dimensions that make up hospital service. These third-level dimensions were derived from various works in healthcare service quality as well as from healthcare standards established by well-known health organizations like the Institute of Medicine (IOM) and the Joint Commission International (JCI). As such, these hospital service dimensions were further elaborated through specific service indicators, which will be the factors to be used in measuring each specific aspect of hospital service. The indicators will be the main basis of each item of the survey instrument that will be constructed for the purpose of this study. Figure 1 shows an illustration of the initially conceptualized framework in hierarchy form.

## Results and Discussion

Figure 2 illustrates the final framework generated after incorporating the initial SEM results that showed the significance and strength of relationship among the service dimensions as well as between the dimensions and their respective indicators, through T-statistics greater than the significant T-value based on sample size and outer loadings greater than 0.7 for all stakeholders (Refer to the Appendices to see details of SEM results), as well as the results of qualitative data gathering conducted to further validate the proposed framework (Refer to Table 1 for summary of results). This framework will not only be used as the format of the final survey instrument but also be advantageous in analyzing the potential root causes of service problems within dimensions given that the relationships among them have been proven. Consequently, the final framework of this study does not only seek to evaluate





**Figure 1.** Initial Service Quality Hierarchical Framework

hospital service quality in the integrated perspective of all key hospital stakeholders. This framework can also give way to a comprehensive analysis thereafter of the possible service improvements in the system by means of identifying the specific dimensions that need to be focused on and even those dimensions that directly affect the key stakeholders as well as by discovering the dissatisfied stakeholders within the system that have a valuable influence on healthcare service quality altogether.

After running the SEM during the statistical validation of this study, it was proven through the outer loadings and T-Statistics that all proposed dimensions and indicators were significant given that the outer loadings of all factors were above 0.70, while the T-values were all significant with respect to the

corresponding sample size obtained per stakeholder (Gallion & Schepeler, 2008). This means that the proposed dimensions are strongly correlated with their respective indicators, thus further implies the validity of the branching out of the hierarchical framework. As such, the SEM also confirmed that the proposed dimensions and indicators of the initial framework are all valid in measuring hospital service quality in the perspective of all key hospital stakeholders. Furthermore, the results showed that all the statistically significant dimensions have important indicators that can have a big impact on the service quality of the service outcome, more specifically the overall reputation of the hospital being evaluated, given the strong relationship of each structure and process

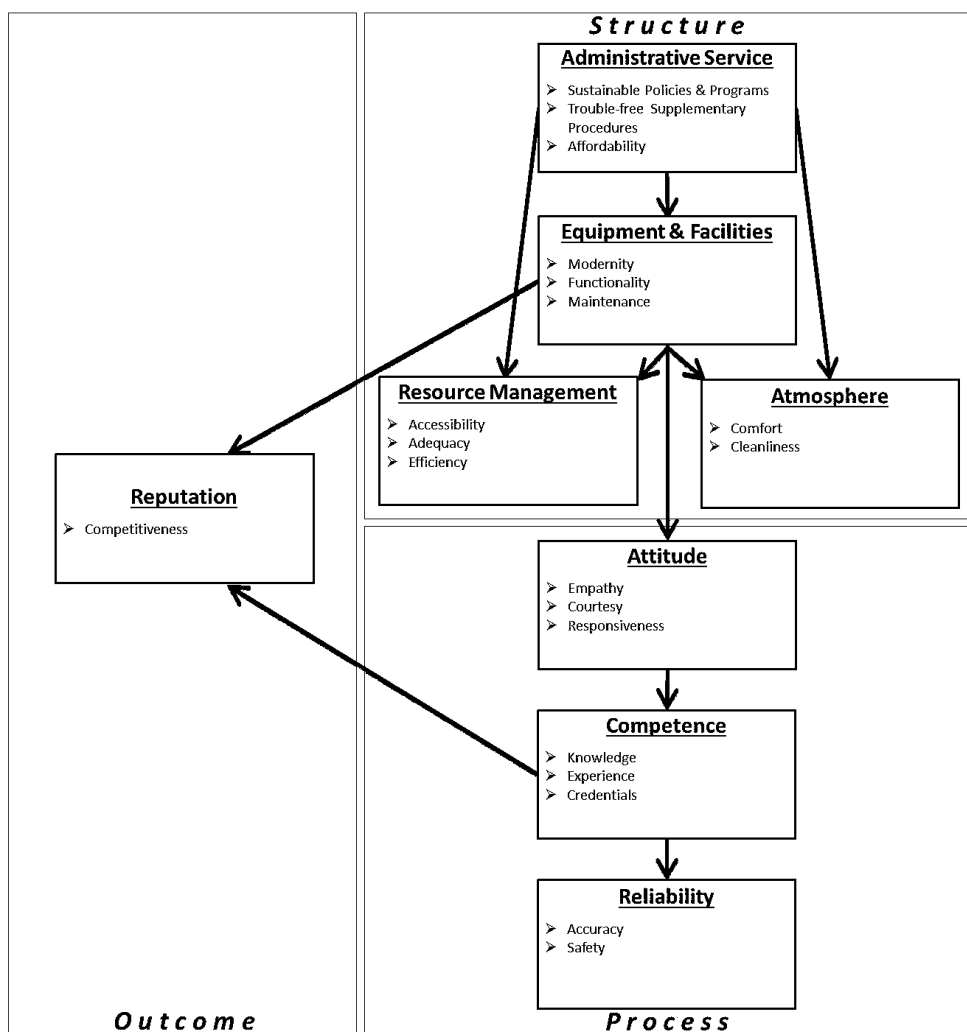


Figure 2. Multi-Perspective Hospital Service Quality Assessment Framework

dimension with the outcome (refer to Appendix 6 of the Appendices for the detailed SEM results).

Then again, despite this statistical affirmation, further stakeholder analysis was done through in-depth interviews as the final validation of the proposed framework. After running the SEM tests and revealing significant results for all proposed indicators, a qualitative data gathering was conducted by gathering more insights from the same sample of stakeholders in order to further validate and streamline the initial framework since all dimensions resulted as significant in the SEM tests. As such, we sought the detailed opinion of each group of stakeholders about their personal definitions and perspectives of hospital service quality, which led to the streamlined dimensions of the framework presented in Figure 2.

The indicators that are important for each stakeholder have been identified clearly and only those that are important to ALL stakeholders were segregated and accounted for in the streamlined framework. Moreover, the qualitative data gathering also revealed a few additional indicators that were repeatedly brought up by each stakeholder during the interviews and were seen potentially helpful in deepening the analysis of the final integrated framework of the study. Table 1 shows a summary of the interview results, enumerating the indicators that were raised as important to each stakeholder based on their definition of hospital service quality.

With this, only those common to ALL stakeholders (as shown at the center of the matrix) were considered in the streamlined framework in Figure 2 and the

assessment survey instrument for this study. These would be the indicators that are familiar and relatable to all stakeholders when they answer a uniform survey in evaluating hospital service quality, thus establishing a multi-perspective approach.

Under structure, administrative services focusing on sustainable policies & programs, trouble-free supplementary procedures and affordability are important for each stakeholder in perceiving good service quality in hospitals. These factors are also the frontline in healthcare service. Affordability is the only additional dimension brought up by all stakeholders during the qualitative data gathering that was added to

the streamlined framework. This dimension was added in place of management support, as it was proven to be more relatable to all stakeholders given that all respondents mentioned this factor as important to how they gauge the worth of services and consequently its level of service quality. Another dimension under service structure is in the aspect of equipment & facilities, wherein modernity, functionality and maintenance are all important to the stakeholders to give them assurance that the hospital facilities are in the highest level of reliability. The resource management of the hospital, on the other hand, in terms of accessibility, adequacy and efficiency enables service providers to

**Table 1. Important Hospital Service Quality Indicators Per Stakeholder Based On Interviews\***

<u>Patients only</u>	<u>Patients &amp; Professionals</u>	<u>Professionals only</u>
<ul style="list-style-type: none"> <li>• Sufficiency of information</li> </ul>	<ul style="list-style-type: none"> <li>• Conduciveness</li> <li>• Comprehensibility</li> <li>• Appropriateness</li> <li>• Patient outcome (personal health impressions of patients)</li> <li>• Effectiveness (actual health status improvement)</li> <li>❖ Canteen/Food service</li> </ul> <p><b><u>ALL</u></b></p> <ul style="list-style-type: none"> <li>• Modernity</li> <li>• Functionality</li> <li>• Maintenance</li> <li>• Comfort</li> <li>• Cleanliness</li> <li>• Accessibility</li> <li>• Adequacy</li> <li>• Efficiency</li> <li>• Sustainable policies &amp; programs</li> <li>• Trouble-free procedures</li> <li>• Empathy</li> <li>• Courtesy</li> <li>• Responsiveness</li> <li>• Knowledge</li> <li>• Experience</li> <li>• Credentials</li> <li>• Accuracy</li> <li>• Safety</li> <li>• Competitiveness</li> <li>❖ Affordable/reasonable costs of services</li> <li>❖ Overall patient satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>❖ Job orientation</li> </ul>
<u>Patients &amp; Management</u>	<u>Management only</u>	<u>Professionals &amp; Management</u>
<ul style="list-style-type: none"> <li>• Ease of obtaining information</li> <li>• Credibility</li> <li>• Customer Loyalty</li> <li>• Word-of-Mouth</li> <li>❖ Value for money of customers</li> </ul>	<ul style="list-style-type: none"> <li>❖ Security</li> <li>❖ First impressions</li> </ul>	<ul style="list-style-type: none"> <li>• Management support</li> <li>❖ Teamwork</li> </ul>

\***Legend:**

- Dimension from proposed initial framework
- ❖ New dimension brought up during interview



render services with the ample resources and supplies in order for the service recipients to benefit fully. Lastly under structure, the hospital atmosphere on the level of comfort and cleanliness are also very important to each group of stakeholders, as these are strictly required in any healthcare institution to have a good healthcare service quality.

Under process, the service dimensions attitude, competence and reliability are all critical factors in affecting the service outcome and can also be dependent on the service quality of the hospital's structure. Empathy, courtesy and responsiveness describe the attitude of the service providers that become a huge contributor on the quality of the healthcare service process. Moreover, the knowledge, experience and credentials of the health professionals define the competence of the service providers, which also influences the service quality perceived by not just their patients but also their co-workers. Finally, the accuracy of the services rendered through minimized human errors and the safety in delivery greatly affect the reliability of the entire service process, which are also very essential in the eyes of all stakeholders.

All in all, these structure and process indicators drive the hospital's reputation, which is the main service outcome that is important to all stakeholders. These, in turn, influence the satisfaction of all key stakeholders towards the overall healthcare service quality. As such, the final framework that was streamlined from both the statistical and qualitative validations done in this study proved to be a comprehensive tool that can be used by not just the patients but also the health professionals and hospital management in evaluating the different aspects of healthcare service, which are all in turn very essential in their perception of hospital service quality.

## Case Study

After finalizing the multi-perspective framework, we constructed the final survey instrument and tested it in another tertiary-level private hospital in order to actualize the framework and examine the analysis process thereafter. Upon gathering and calculating the results of the final survey, Table 2 and Table 3 show the summary of scores per dimension, per indicator and per stakeholder.

In Table 2, the scores were tallied per stakeholder (vertical computation) and per dimension (horizontal

computation). The final average rank showed the importance ranking given by each group of stakeholders to each of the 8 service dimensions in the framework. This further implies how important each dimension is per stakeholder, with ranking 1 being the most important hospital service dimension for them and rank 8 as the last. These rankings were used as weights in computing for the overall weighted average scores for both service quality (SQ) and satisfaction scores per stakeholder and per dimension. The average SQ scores came from the assessment of each respondent towards the service quality of each service indicator; while the average satisfaction scores came from the level of satisfaction gauged by each respondent towards each service dimension. The average of the overall weighted average scores of both SQ and satisfaction ratings determined the average overall single score per stakeholder and per dimension. These overall single scores represent the overall assessment per dimension and per stakeholder. Combining all these yielded a final overall score, which is the single score to rate the overall service quality of the hospital being evaluated. Table 3, on the other hand, simply summarized the average SQ rating given by all survey respondents per indicator. These average scores per indicator were further broken down per stakeholder, showing the average scores given by the respondents from each group of stakeholders. With all these computed scores, a 5-point Likert scale was consistently used- wherein 5 is the highest possible rating that implies outstanding service, 4 being the above average rating and a competitive mark as well, 3 as a fair or neutral score meeting minimum requirements, 2 implying a below average rating, and 1 as a poor score. This scale was seen appropriate for the survey instruments because it enables sufficient sensitivity, having enough intervals to identify significant change in measurement, and it does not add any stress to the respondents when answering given just the right number of choices (Likert, 1932).

After conducting the final survey and averaging up the ratings, scores below 4.0 were deemed to be areas of focus since any score within the range of 3.0 (from 3.00 to 3.99) meant a fair or neutral score that just meets minimum requirements. Given that the main purpose of assessing service quality in the first place is to promote continuous improvement, it was seen best to focus on service dimensions that received scores below

**Table 2.** Summary of Overall Survey Results per Dimension and per Stakeholder

Service Dimension	Patient			Health Professional			Management			Overall Weighted Average Satisfaction (per dimension)	Overall Weighted Average SQ Score (per dimension)	Average Overall Single Score (per dimension)
	Final Ave. Rank	Ave. Satisfaction Score	Ave. SQ Score	Final Ave. Rank	Ave. Satisfaction Score	Ave. SQ Score	Final Ave. Rank	Ave. Satisfaction Score	Ave. SQ Score			
Equipment & Facilities	3	3.760	3.787	2	3.125	3.263	1	3.432	3.659	3.384	3.548	<b>3.466</b>
Atmosphere	7	3.740	3.830	7	3.338	3.513	6	3.500	3.739	3.516	3.712	<b>3.614</b>
Resource Mgt	5	3.720	3.707	5	3.188	3.408	4	3.591	3.727	3.536	3.659	<b>3.598</b>
Admin Services	8	3.780	3.807	6	3.350	3.492	8	3.500	3.667	3.466	3.590	<b>3.528</b>
Attitude	2	4.120	4.213	3	4.038	4.208	3	3.682	3.826	4.016	4.135	<b>4.075</b>
Competence	4	4.340	4.260	1	3.988	4.167	2	3.864	3.939	4.005	4.106	<b>4.056</b>
Reliability	1	4.220	4.190	4	3.763	4.019	7	3.636	3.841	3.970	4.075	<b>4.022</b>
Reputation	6	4.120	4.140	8	3.863	3.913	5	3.841	3.909	3.938	3.987	<b>3.962</b>
Overall Weighted Average Scores (per stakeholder)		4.038	4.049		3.615	3.793		3.644	3.796			
Average Overall Single Score (per stakeholder)		<b>4.043</b>			<b>3.704</b>			<b>3.720</b>			<b>3.799</b> Final Overall Score	

**Table 3.** Summary of Average Survey Results per Indicator and per Stakeholder

Service Dimension	Service Indicator	Health Professionals'			Overall Average SQ Score (per indicator)
		Patients' Ave. SQ Score	Ave. SQ Score	Management's Ave. SQ Score	
Equipment & Facilities	Modernity	3.800	3.275	3.614	<b>3.563</b>
	Functionality	3.780	3.238	3.750	<b>3.589</b>
	Maintenance	3.780	3.275	3.614	<b>3.556</b>
Atmosphere	Comfort	3.800	3.463	3.705	<b>3.656</b>
	Cleanliness	3.860	3.563	3.773	<b>3.732</b>
Resource Mgt	Accessibility	3.720	3.425	3.750	<b>3.632</b>
	Adequacy	3.760	3.275	3.705	<b>3.580</b>
	Efficiency	3.640	3.525	3.727	<b>3.631</b>
Admin Services	Sustainable Policies & Programs	3.780	3.525	3.705	<b>3.670</b>
	Trouble-free Supplementary Procedures	3.700	3.500	3.568	<b>3.589</b>
Attitude	Affordability	3.940	3.450	3.727	<b>3.706</b>
	Empathy	4.340	4.225	3.909	<b>4.158</b>
	Courtesy	4.280	4.288	3.909	<b>4.159</b>
Competence	Responsiveness	4.020	4.113	3.659	<b>3.931</b>
	Knowledge	4.240	4.113	3.909	<b>4.087</b>
	Experience	4.260	4.113	3.932	<b>4.101</b>
	Credentials	4.280	4.275	3.977	<b>4.177</b>
Reliability	Accuracy	4.140	3.988	3.773	<b>3.967</b>
	Safety	4.240	4.050	3.909	<b>4.066</b>
Reputation	Competitiveness	4.140	3.913	3.909	<b>3.987</b>

4.0 in order to urge further improvement and in turn uphold the competitiveness of the institution. Hence, this benchmark that was set for the purpose of this study was necessary to have an indication of whether a particular service dimension has an acceptable average score or needs to be focused on for further service improvement initiatives. Moreover, given that the chosen host hospital is an established hospital patronized by all socio-economic levels, a benchmark score of 4.0 would be appropriate in analyzing the results of the survey conducted so as to gear the hospital towards competitiveness and service excellence.

Given the set benchmark score for this study, the final overall score received by the host hospital is below the benchmark at 3.799. After integrating the ratings of each group of stakeholders and taking into account the respective rankings of the service dimensions, it can be concluded that the hospital needs to step up in improving their service quality in order to be acceptable and satisfying to its key stakeholders, enabling patients to be more loyal to the hospital and service providers to be more motivated in performing their jobs. This final score allows the hospital to further analyze their areas for improvement and act on them accordingly in order to sustain competitiveness by consistently satisfying all their stakeholders through every aspect of hospital service.

The final overall score of the hospital can actually be further justified by the below benchmark averages of the majority of service dimensions and even those of the overall scores per stakeholder. It can be observed that both the SQ and satisfaction overall weighted average scores of all the dimensions under the service structure of the hospital (i.e. Equipment & Facilities, Atmosphere, Resource Management, and Administrative Services) have scores below 4.0 for all stakeholders. Knowing that these dimensions, as proven in the final framework, affect all the other aspects of service implies that the foundation of the hospital's service quality may not be as robust as it should be in order to sustain service quality better. In fact, all of the indicators under these dimensions also acquired overall scores below 4.0, with the lowest averages coming from the health professionals. The below benchmark scores given by the health professionals for both SQ and satisfaction ratings further imply their dissatisfaction over the current quality level of the hospital's service structure, namely the facilities, atmosphere, resources and administrative

services. In fact, this was observed and validated as a common sentiment among the doctors and nurses through the interviews conducted during the study.

This then suggests the need to focus on the improvement of the hospital's facilities, surroundings, resources and even governance in order for the health professionals to be better motivated in performing their tasks. Moreover, given that the management personnel and the patients also have below benchmark scores for these dimensions, it means that this shortfall in the hospital's service structure is also being recognized by all the other key people of the institution, which then puts these dimensions as the top priority of the hospital to build improvement initiatives for in order to further satisfy all its stakeholders in the long run.

Looking further into the survey results, it can also be seen that two out of the three groups of key stakeholders also have below benchmark overall scores, namely the **health professionals** and the **hospital management**. This could signify the dissatisfaction of both direct and indirect service providers towards the current level of service quality that the hospital exudes.

Only the patients' overall score passed the benchmark, indicating patient satisfaction which is also in fact reflected in the hospital's own patient satisfaction surveys. The dimensions that passed the satisfaction standards of the patients yet not the service providers were Competence, Reliability and Reputation. Given the direct involvement and the nature of experience of these service providers, they were able to gauge that the hospital could still do better in terms of the competence of the people they hire and the reliability of the services they render, which all in all sets the competitiveness of the institution compared to other tertiary-level private hospitals. This poses an opportunity for the hospital to improve further on these aspects as well in order to satisfy better their service providers, thus motivating them to stay in the institution and to continue delivering excellent service. These dimensions now become the second priority of the hospital for service improvements to be in place and to satisfy further both its direct and indirect service providers.

With all the final results accounted for, this study had demonstrated how it is possible that the service recipients could give above average service quality and satisfaction ratings, and yet both direct and indirect service providers expressed lower scores. This survey opened new doors to the hospital in delving

deeper into the reason behind the dissatisfaction of their key stakeholders, most especially those of the service providers. Since the hospital is currently conducting only patient satisfaction surveys, the satisfaction level of the service providers is not as apparent and their assessment of the overall hospital service quality gets neglected. The multi-perspective service quality framework enabled the hospital to cater to the needs and hear out the concerns of all the key people that affect and benefit from the overall hospital service quality. Overlooking at least one of these key stakeholders who help establish the hospital's service quality can potentially pose a long-term problem for the institution, as unmotivated and dissatisfied service providers can gradually decline the overall service quality of the entire hospital as well. If this would not be detected and addressed aptly at the right time, the possibility to compromise even the satisfaction of the patients might be realized sooner or later. Therefore, the framework created in this study would be an advantageous tool for hospitals to determine not only the service dimensions that need further improvement but also the stakeholders that need to be given further attention and understanding so as to build more sustainable and effective improvement initiatives.

### **Conclusion & Recommendations for Further Studies**

Service quality is very critical in healthcare, especially in established institutions like private hospitals, given that the welfare of actual human beings depends on it. Because of this, it is essential for hospitals to strive to continuously evaluate and improve quality in all aspects of service. As such, the objective of having a holistic service quality assessment would be achieved by having a multi-perspective framework that integrates the inputs of the service recipients (patients) and providers (health professionals and hospital management personnel) in a unified measurement instrument.

The crucial role of each stakeholder is evident in all three main service components – structure, process and outcome. The service structure is determined by how management designs the service environment, wherein both health professionals and patients benefit through the way the facilities support how services are delivered and the way the surroundings complement the services received respectively. This was validated

in the case study done, where each key stakeholder had a significant input in scrutinizing the quality of each service dimension, providing honest feedback, and contributing ideas on how to further develop the current state of the hospital being evaluated. Using the results of the case study, the hospital was able to discover what specific service dimensions need further improvement (i.e. administrative service, equipment & facilities, atmosphere, and resource management) to increase the satisfaction of all its stakeholders. The unified assessment had provided as well prioritization on which service dimensions should be addressed the soonest based on the importance ranking given by each group of stakeholders, which was incorporated in the weighted average scores generated from the survey.

Based on the overall scores, the hospital's top priority is the advancement of their equipment and facilities, which is followed by their administrative services. These two dimensions under the service structure suggested the biggest opportunity for the hospital to invest on both technology and people in order to support and enhance the quality of their service process and outcomes for the benefit of all stakeholders. Given the relationships established also between the dimensions in the model after the SEM validation (as illustrated in Figure 2), it can be concluded that these two service structure dimensions are the most influencing aspects of service that flows through all the others. To further elaborate, the administrative service as well as the equipment and facilities are the dimensions within a service system that can highly dictate the quality of the other dimensions under the service structure, process and outcome. The policies, administrative procedures, support and even the technology available in a hospital institution can most definitely create a more desirable atmosphere, enable proper resource management, motivate positive attitudes, bring out competence and reliability, and all in all heighten the reputation of the institution. Hence, this survey was able to provide the hospital a better edge of advancing its service quality, as it showed that their priority dimensions for improvements are actually the topmost independent variables, wherein all the other factors of service can actually be reliant on.

With this, the multi-perspective approach in assessing service quality was seen advantageous in hospitals especially after seeing the possibility of having satisfied patients yet service providers that are below the benchmark satisfaction level. This study



revealed through the respondents that neglecting at least one of the key stakeholders can gradually trigger the regression of overall hospital service quality, as dissatisfied health professionals and/or employees will eventually have the tendency to either be demotivated at work or completely leave the institution. Thus, the proposed framework also seeks to support health professional and hospital staff satisfaction in healthcare service for a more sustainable quality level. Given that nowadays society is geared towards sustainability and continuous improvement, service quality in hospitals must also keep up by ensuring long-term quality that satisfies all the stakeholders of the system. As such, stakeholder satisfaction leading to the hospital's good reputation can advocate not only patient loyalty but also the commitment of service providers in upholding healthcare quality.

For future studies, expanding the study can be done by exploring on the other service indicators that are not commonly significant to ALL and only to one or two stakeholders, as enumerated in the results of the qualitative validation summarized in Table 1. These indicators still have an opportunity to be used for further analysis of each stakeholder's evaluations since these still had significant SEM results during the quantitative data validation, yet had not been mentioned by the respondents during the qualitative data gathering. This is a suggested expansion of the study in order to dig deeper on the possible solutions and improvements to hospital service systems by means of dissecting further the reason behind stakeholder dissatisfaction and even the possible root causes of service deficiencies. Moreover, the final survey could also be improved further by adding another section that would ask the respondents from each group of stakeholders about their perceived minimum acceptable rating for both service quality and satisfaction. The average of this value supplied by all the respondents shall be used as the standard in the perspective of that particular hospital's key stakeholders. This will further help in detecting and analyzing the final scores that are truly alarming and consequently the service dimensions that should really be focused on for improvement initiatives.

Another recommendation for further studies is a deeper research on more detailed dimensions per service unit or department within the hospital given that the healthcare service system is very multifaceted. Although this study was able to create a wide-ranging

framework that had covered several works in literature, there might still be more suitable and specific measures that may be unique to each department, which could be used to find more actionable service solutions to concrete problems within each unit and address more strategically the concerns of dissatisfied stakeholders. In addition, other external factors such as cultural factors affecting stakeholders and even the usability of services may also be explored in developing further a more holistic service quality assessment tool.

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## Appendices

### SERVICE DIMENSIONS OF THE PROPOSED FRAMEWORK

**Table 1.** *Dimensions under Service Structure*

Dimension	Sources
<u>SERVICE STRUCTURE</u> - the external factors and general environment where health care services are provided. This is divided into physical structure & organizational structure.	Campbell, Roland & Buetow (2000)
· Physical Structure - the overall physical environment where services are delivered.	Min, Mitra, & Oswald (1997)
o Equipment & facilities - the availability and overall working condition of the technology, equipment, instruments, devices and other facilities in the hospital	Pui-Mun (2004)
§ Modernity: All the equipment and facilities in the hospital should be up-to-date and easy to use.	Min, Mitra, & Oswald (1997); Cleveland (1999);
§ Functionality: All the equipment and facilities in the hospital should be functioning properly and safe to operate.	Min, Mitra, & Oswald (1997); Department of Health (2012)
§ Maintenance: All the equipment and facilities in the hospital should be well maintained and regulated.	Department of Health (2012)
o Atmosphere - the surroundings and appearance of the hospital that support and ease the performance of services	Dagger, Sweeney, & Johnson (2007)
§ Comfort: The ambiance of the environment should allow anyone to feel at ease in the hospital regardless their health condition.	Senarath & Gunawardena (2011)
§ Conduciveness: There should be an ideal atmosphere in the hospital for the performance of any kind of service.	Yogesh & Satyanarayana (2012)
§ Cleanliness: All areas in the hospital should be clean and tidy.	Buciuniene & Piligrimiene (2008); Senarath & Gunawardena (2011)
· Organizational structure - the factors that define the entire organization.	Min, Mitra, & Oswald (1997)
o Resource management - the management and control of the hospital's resources	Campbell, Roland & Buetow (2000)
§ Accessibility: The physical and human resources that are needed to carry out services should be readily available in their proper locations and allocations.	Joint Commission International (2010)
§ Adequacy: The available supplies, resources and services present in the hospital should be adequate for both patients and health care providers.	Min, Mitra, & Oswald (1997)
§ Efficiency: All resources should be optimally utilized with minimum wastage and the intention to provide maximum benefits.	Garcia-Altes, Zonco, Borrell, & Plasencia (2006)
o Administrative service - the effort and support exhibited by the hospital administrators for all functions of the organization	Snell & White (2009)
§ Management support: The hospital administrators should show their full support through their persistence to maintain good quality in all aspects of service and their proper coordination with all units within the hospital.	Snell & White (2009)
§ Sustainable policies & programs: The hospital administrators should have evident sustainable policies and programs that cater to the concerns of the patients, health professionals and other hospital employees.	Joint Commission International (2010)
§ Trouble-free supplementary procedures: The administrative supplementary procedures (such as billing, admission, discharge, records keeping and other standard non-medical procedures) should be convenient and easy to follow for both customers and hospital staff.	Min, Mitra, & Oswald (1997); Yogesh & Satyanarayana (2012)

**Table 2.** *Dimensions under Service Process*

<b>Dimension</b>	<b>Sources</b>
<b>SERVICE PROCESS</b> - the quality of the actual delivery of health care services. <i>This is divided into interpersonal care &amp; technical care.</i>	Campbell, Roland & Buetow (2000); Koerner (2000)
· Interpersonal care - the way service providers personally interact with the patients.	Koerner (2000); Snell & White (2009)
o Communication - the communication skills exhibited and personal conversations made by service providers with patients as well as other information disseminations within the hospital	Snell & White (2009); Yogesh & Satyanarayana (2012)
§ Comprehensibility: The service providers (i.e. the doctors, nurses and other hospital staff) should communicate relevant information (e.g. instructions, diagnosis, results, etc.) clearly and understandably to both patients and their companions.	Koerner (2000); Snell & White (2009)
§ Ease of obtaining information: Correct and needed information should be easily accessible without trouble.	Yogesh & Satyanarayana (2012)
§ Sufficiency of information: Service providers should completely give out the information patients need regarding their health status as frequently and sufficiently as possible.	Senarath & Gunawardena (2011)
o Attitude - the disposition and manner service providers approach the patients	Pui-Mun (2004)
§ Empathy: Service providers should show genuine care, understanding and respect when interacting with the patients.	Koerner (2000)
§ Courtesy: Service providers should be courteous and friendly in all interactions with the patients and their companions.	Senarath & Gunawardena (2011)
§ Responsiveness: Service providers should willingly and punctually accommodate and respond to the patients' needs without much delay.	Pui-Mun (2004)
· Technical care - the medical know-how and ability of service providers to perform health care services the right way.	Gill & White (2008); Snell & White (2009)
o Competence - the qualification and skills of the service providers	Gill & White (2008)
§ Knowledge: All service providers should be knowledgeable in their respective fields and responsibilities.	Gill & White (2008)
§ Experience: All service providers should be well-experienced and very proficient in performing medical services as well as dealing with various patient conditions.	Snell & White (2009)
§ Credentials: Service providers should all be fully qualified and have good educational backgrounds.	Joint Commission International (2010)
o Reliability - the extent of carrying out appropriate services correctly and safely	Pui-Mun (2004)
§ Accuracy: Service providers should carry out all treatments/operations correctly (with minimal errors) that can bring about accurate results and prescriptions.	Pui-Mun (2004)
§ Appropriateness: Only the timely and necessary services should be provided to cure the diagnosed health condition of the patient.	Garcia-Altes, Zonco, Borrell, & Plasencia (2006)
§ Safety: Procedures and other medical operations should be carried out safely, without any harmful effects to anyone.	Joint Commission International (2010); Department of Health (2013)

**Table 3.** *Dimensions under Service Outcome*

<b>Dimension</b>	<b>Sources</b>
<i>SERVICE OUTCOME - the actual consequence or effects of the health care services rendered. This is divided into health outcome &amp; service impact.</i>	Piligrimiene (2010)
· <i>Health outcome - the effect on the health status of the patient after services have been provided.</i>	Buciuniene & Piligrimiene (2008)
o <i>Patient outcome - the perceived improvement in the health status of the patient</i>	Buciuniene & Piligrimiene (2008)
§ <i>Personal health impressions: The patient should feel subjectively better and relieved after consulting with the medical professionals and receiving the appropriate treatment(s) in the hospital.</i>	Piligrimiene (2010)
o <i>Effectiveness - the extent at which medical treatments and services actually improved the health condition of the patient</i>	Garcia-Altes, Zonco, Borrell, & Plasencia (2006)
§ <i>Health status improvement: The vital signs of the patients should actually show health improvement after necessary treatments have been received.</i>	Garcia-Altes, Zonco, Borrell, & Plasencia (2006)
· <i>Service Impact - the overall impact brought about by the hospital to the patient after services have been provided.</i>	Buciuniene & Piligrimiene (2008)
o <i>Trustworthiness - the extent at which patients feel at ease in patronizing and trusting the organization</i>	Pui-Mun (2004)
§ <i>Credibility: The service providers should establish their credibility as health care providers, which should build the trust and confidence of the patients in them.</i>	Buciuniene & Piligrimiene (2008)
§ <i>Customer Loyalty: The patients should be willing to revisit and patronize the same hospital again.</i>	Casalo, Flavian, & Guinaliu (2008)
o <i>Reputation - the overall corporate image exhibited by the whole organization</i>	Yogesh & Satyanarayana (2012)
§ <i>Competitiveness: Given its service capability, the hospital should generally be considered a good provider of quality health care services by all its stakeholders (i.e. the customers, service providers, etc.).</i>	Yogesh & Satyanarayana (2012)
§ <i>Positive Word-of-Mouth: The customers of the hospital should be inclined to recommending the same hospital to other people.</i>	Ferguson, Paulin, & Leiriao (2006)

*Final Assessment Instrument Rating Scale*

**Table 4.** Rating Description Per Dimension of Final Survey Instrument

Dimension	5	4	3	2	1
Equipment & Facilities	If <b>ALL</b> the equipment, machines, instruments, devices, apparatus, etc. in the hospital facilities that I've encountered fit the description.	If <b>the majority</b> , but not all, of the equipment, machines, instruments, devices, apparatus, etc. in the hospital facilities that I've encountered fit the description.	If almost <b>half</b> of the equipment, machines, instruments, devices, apparatus, etc. in the hospital facilities that I've encountered fit the description.	If only <b>a few</b> equipment, machines, instruments, devices, apparatus, etc. in the hospital facilities that I've encountered fit the description.	If <b>none</b> of the equipment, machines, instruments, devices, apparatus, etc. in the hospital facilities that I've encountered fit the description.
Atmosphere	If the appearance of <b>ALL</b> areas and ALL employees in the hospital apply to the description <b>every time</b> I'm in the hospital.	If the appearance of <b>most</b> areas and most employees in the hospital, but not all, apply to the description <b>often</b> .	If the appearance of <b>some</b> areas and some employees in the hospital apply to the description only <b>sometimes</b> .	If the appearance of only <b>a few</b> areas and employees in the hospital apply to the description <b>occasionally</b> .	If the appearance of the areas and the employees in the hospital <b>DOES NOT ALL</b> apply to the description.
Resource Management	If <b>ALL</b> the resources, supplies and services that I've observed in the hospital fit the description.	If <b>the majority</b> , but not all, of the resources, supplies and services that I've observed in the hospital fit the description.	If almost <b>half</b> of the resources, supplies and services that I've observed in the hospital fit the description.	If only <b>a few</b> of the resources, supplies and services that I've observed in the hospital fit the description.	If <b>none</b> of the resources, supplies and services that I've observed in the hospital fit the description.
Administrative Service	If <b>ALL</b> of the policies, programs, projects, transactions, fees, etc. that I've encountered in the hospital apply to the description.	If <b>most</b> of the policies, programs, projects, transactions, fees, etc. that I've encountered in the hospital apply to the description.	If <b>some</b> of the policies, programs, projects, transactions, fees, etc. that I've encountered in the hospital apply to the description.	If only <b>a few</b> of the policies, programs, projects, transactions, fees, etc. that I've encountered in the hospital apply to the description.	If <b>none</b> of the policies, programs, projects, transactions, fees, etc. that I've encountered in the hospital apply to the description.
Attitude	If <b>the majority</b> of the service providers and employees in the hospital <b>often</b> exhibit the attitude described.	If <b>some</b> of the service providers and employees in the hospital exhibit the attitude described only <b>sometimes</b> .	If only <b>a few</b> of the service providers and employees in the hospital exhibit the attitude described <b>occasionally</b> .	If <b>no one</b> among the service providers and employees in the hospital exhibit the attitude described.	If <b>the majority</b> of the service providers and employees in the hospital <b>often</b> exhibit the attitude described.
Competence	If <b>ALL</b> of the service providers and staff I've encountered in the hospital fit the description.	If <b>the majority</b> of the service providers and staff I've encountered in the hospital fit the description.	If <b>some</b> of the service providers and staff I've encountered in the hospital fit the description.	If only <b>a few</b> of the service providers and staff I've encountered in the hospital fit the description.	If <b>no one</b> among the service providers and staff I've encountered in the hospital fit the description.



<i>Reliability</i>	If <b>ALL</b> of the rendered services and processes that I've observed in the hospital apply to the description.	If <b>the majority</b> of the rendered services and processes that I've observed in the hospital apply to the description.	If <b>some</b> of the rendered services and processes that I've observed in the hospital apply to the description.	If only <b>a few</b> of the rendered services and processes that I've observed in the hospital apply to the description.	If <b>none</b> of the rendered services and processes that I've observed in the hospital apply to the description.
<i>Reputation</i>	If you are <b>very much</b> convinced with the description based on your experience in the hospital.	If you are <b>moderately</b> convinced with the description based on your experience in the hospital.	If you are <b>slightly</b> convinced with the description based on your experience in the hospital.	If you are <b>barely</b> convinced with the description based on your experience in the hospital.	If you are <b>NOT AT ALL</b> convinced with the description based on your experience in the hospital.

*Details of SEM Results*

**Table 5.** *Summary of Composite Reliability Values SEM Results*

<b>Composite Reliability: Dimension</b>	<b>Patients' SEM</b>	<b>Health Professionals' SEM</b>	<b>Hospital Management's SEM</b>
Administrative Services	0.9011	0.8824	0.9024
Atmosphere	0.8604	0.8608	0.8108
Attitude	0.8967	0.8812	0.8894
Communication	0.9031	0.8456	0.8984
Competence	0.8596	0.8034	0.8942
Equipment & Facilities	0.8834	0.8054	0.8954
Patient Effectiveness	0.7934	0.8681	0.7148
Reliability	0.9344	0.8831	0.8213
Reputation	0.8864	0.856	0.8767
Resource Management	0.8693	0.8591	0.9205
Trustworthiness	0.9427	0.8312	0.9228
Administrative Services	0.8429	0.8672	0.8798
Atmosphere	0.9006	0.885	0.8663
Attitude	0.9012	0.7817	0.8789

**Table 6.** SEM Results per Stakeholder

<b>Observed Variable &lt;- Latent Variable</b>	<b>Patient SEM</b>		<b>Health Professional SEM</b>		<b>Hospital Management SEM</b>	
	<b>Outer Loadings</b>	<b>T Statistics (t&gt;2.2021, n = 45)</b>	<b>Outer Loadings</b>	<b>T Statistics (t&gt;1.990, n=83)</b>	<b>Outer Loadings</b>	<b>T Statistics (t&gt;2.021, n=42)</b>
Accessibility <- ResourceMgt	0.8583	30.5295	0.8298	24.0518	0.805	21.4473
Accuracy <- Reliability	0.8925	57.5409	0.8963	43.9536	0.9319	69.8629
Adequacy <- ResourceMgt	0.7988	20.5807	0.7953	19.8903	0.878	37.0414
Appropriateness <- Reliability	0.9044	56.8023	0.8103	18.3811	0.8886	34.0632
Cleanliness <- Atmosphere	0.8008	14.1931	0.827	25.4827	0.7099	13.5395
Comfort <- Atmosphere	0.878	66.9061	0.8925	59.8882	0.7884	17.9787
Competitiveness <- Reputation	0.9512	107.088	0.8801	36.5939	0.9081	36.4509
Comprehensibility <- Communication	0.8933	41.3171	0.8737	35.8013	0.8384	29.8407
Conduciveness <- Atmosphere	0.7715	12.6322	0.7377	11.3938	0.8011	25.4382
Courtesy <- Attitude	0.9184	40.5819	0.853	34.0978	0.8791	39.5252
Credentials <- Competence	0.8744	30.7379	0.7049	13.9027	0.8685	31.2
Credibility <- Trustworthiness	0.9024	46.9618	0.768	11.5397	0.8549	25.9981
CusLoyalty <- Trustworthiness	0.9088	33.9167	0.8333	20.6852	0.9151	62.5394
EaseInfo <- Communication	0.8178	27.0516	0.8699	29.1805	0.8912	51.5678
Efficiency <- ResourceMgt	0.7423	16.0287	0.8565	30.9601	0.8431	28.9097
Empathy <- Attitude	0.9077	37.3235	0.8325	18.7876	0.8026	16.3221
Experience <- Competence	0.9334	59.4907	0.8057	16.6374	0.9243	56.1567
Functionality <- Equipment&Facilities	0.8095	16.5453	0.7777	14.9595	0.8901	37.0934
HSIImprovement <- Effectiveness	0.9282	35.7778	0.9378	90.1874	0.8181	23.3814
HealthOutcome <- Outcome	0.6732	6.9497	0.8672	34.803	0.7544	11.0447
Interpersonal <- Process	0.8733	21.3987	0.863	37.2725	0.896	53.2817
Knowledge <- Competence	0.6285	7.9643	0.7661	24.4008	0.7818	18.0988
Maintenance <- Equipment&Facilities	0.8861	61.7255	0.7833	13.7766	0.8826	28.7798
MgtSupport <- AdminServices	0.8595	33.3554	0.8613	28.4365	0.8019	19.2361
Modernity <- Equipment&Facilities	0.8422	27.8805	0.7223	15.3901	0.8069	27.723
OrgStructure <- Structure	0.8768	31.9825	0.9117	64.5846	0.8423	23.2459
PHIimpression <- PatientOutcome	0.952	116.4364	0.8401	19.7891	0.8546	30.6574
PWOM <- Reputation	0.9372	59.7701	0.8053	19.1994	0.9428	92.839
PhysicalStructure <- Structure	0.9328	75.0844	0.8698	35.4835	0.9052	59.6538
Responsiveness <- Attitude	0.7528	11.1789	0.8457	28.2714	0.8769	36.115
SPPPrograms <- AdminServices	0.9139	71.1794	0.8381	19.0549	0.8768	38.7913
Safety <- Reliability	0.6787	7.1932	0.7451	15.9215	0.8515	29.9046
ServiceImpact <- Outcome	0.9353	82.3942	0.8843	38.3812	0.7374	9.9338
SufficientInfo <- Communication	0.8965	38.6292	0.655	6.9561	0.8622	35.7096
TSPcedures <- AdminServices	0.827	36.3316	0.8359	34.0979	0.925	48.273
Technical <- Process	0.9107	28.008	0.8669	35.6484	0.8708	32.7932