

Suplememenary data of paper (Development and Validation of Survey Instrument for Measurement of Hospital Functional Service Quality)

Table i: 142 items scrutinized with their respective Service Quality Dimensions

Study Dimensions	Item
Assurance	1. The facility has skilled Doctors
	2. The facility has skilled Nurses
	3. The facility has skilled support staff
	4. Services are provided efficiently
	5. Doctors are professional
	6. Nurses are professional
	7. Support staff is professional
	8. Medical procedures are correct the first time
	9. Doctors are competent
	10. Nurses are competent
	11. Support staff are competent
	12. Doctors are well trained
	13. The nurses are well trained
	14. Support staff are well trained
	15. Employees are knowledgeable in answering patients' questions.
	16. Employees are courteous, friendly and supportive
	17. Employees get adequate support from employers to do their jobs well.
	18. Patients feel safe in their interactions with hospital's employees.
	19. Hospital employees maintain confidentiality of treatment
	20. I can trust Hospital staff
Empathy	1. I feel the staff at the clinic understand my needs
	2. The hospital's staff treat me as an individual and not just a number.
	3. Doctors have best interests of the patients in their heart
	4. Nurses have best interests of the patients in their heart
	5. Support staff have best interests of the patients in their heart
	6. Amount of time spent by staff getting to know and understand my needs was adequate
	7. visiting hours of hospital suit me
	8. Availability of 24-hour services
Reliability	1. Hospital provides its services at the time it promises to do so.
	2. When patients have problems, employees are sympathetic and reassuring
	3. Hospital is accurate in billing
	4. Error free and fast retrieval of documents
	5. Instilling patient confidence
	6. Diagnosis is made after critical examination
Tangibles	1. Hospital has up-do-date and modern equipment.
	2. Hospital's physical facilities are visually appealing.
	3. The waiting areas for medication and for the doctor's office were pleasant.

	4. I felt sense of wellbeing in the hospital
	5. Hospital employees appear neat and well dressed
	6. The appearance of the physical facilities of hospital is in keeping with the health care services provided
	7. Hospital has clean and hygienic ablution facilities
Responsiveness	1. The doctors, nurses and support staff are responsive to patient's needs
	2. Nurses are responsive to patient's needs
	3. Support staff is responsive to patient's needs
	4. Hospital doctors are willing to help patients
	5. Hospital nurses are willing to help patients
	6. Hospital support staff are willing to help patients
	7. Patient receive prompt service from hospital's employees
	8. Hospital employees tell patients exactly when services will be performed
Baksheesh	1. Services were not provided properly without tips
	2. Hospital staff expected tips
Expertise	1. You can rely on the staff at the clinic to be well trained and qualified.
	2. The staff at the clinic carry out their tasks competently.
	3. I believe the staff at the clinic are highly skilled at their jobs.
	4. I feel good about the quality of the care given to me at the clinic.
	1. Care given by the nurses
	2. Respect shown by the nurses
	3. Courtesy of the nurses
	4. Willingness of nurses to help when asked for help
	5. The way nurses understood emotions and gave comfort during stay
	6. Opportunity given to express concerns leisurely
	7. The nurses' response to needs
	8. Concern shown by nurses towards illness
	9. Friendliness of nurses
	10. Nurses treated me in a way that made me feel important
	11. Nurses spent adequate time with me
	12. The way the ward staff welcomed
Physician concern	1. The physician was polite
	2. The physician adequately explained my condition, examination results, and treatment
	3. The physician allowed me to ask many questions, enough to clarify everything
	4. The physician paid enough consideration to my concerns for deciding medical practice
	5. The physician made me feel comfortable
Staff Concern	1. The nurses were friendly
	2. The nurses explained the medication process well
	3. Care providers seemed to try to help me as much as they could
	4. Care providers truly care for me
	5. There was a good coordination among the care providers
Courtesy	1. Employees of hospital are polite during admissions procedure
	2. Employees of hospital are polite during housekeeping process
	3. Nurses' behavior are very polite against customer
	4. Nurses are cheerful

Relationships

5. Visitors are treated well in hospital
1. My doctor was interested in not only my illness but also me as a person
2. The nurses spent time with me to discuss my concerns about my condition
3. The use of each procedure and test was explained to me before they were done
4. The nurses were kind, gentle and sympathetic at all times
5. The ward rules and regulations were explained to me
6. The nurses asked my permission before performing any test on me
7. Doctors asked my permission before performing any test on me
8. I was treated with dignity and had adequate privacy during my treatment
9. Doctors explained frankly to me the reasons for tests and procedures

Policy

1. This hospital has consulting hours convenient to all their patients.
2. Over all, I am satisfied with the service quality of this hospital.
3. The hospital provides for significant loyalty rewards through membership cards.

Food

1. I was asked about the size of portion that I would like
2. The food which I had asked for was given to me
3. There was a choice of food on the menu
4. After each meal the plates were cleared straight away
5. The meals were well presented
6. The meals were still hot when they were served

Waiting time

1. Time expended before seeing doctor
2. Time spent before doing lab test
3. Time spent in the pharmacy for drugs
4. Overall time spent in the hospital
5. Admission process is not simple
6. The clinic keeps waiting time to a minimum.
7. Generally, appointments at the clinic run on time.

Professionalism/skill

1. Doctors talked to me frankly and politely
2. Doctors carried out my tests completely and carefully
3. Doctors gave me medical advice in a simple way that I can understand
4. I had a clear understanding of my condition during my stay in hospital
5. Doctors spent extra effort to make sure that I understood my condition and its treatment
6. Knowledgeable, skilled nurses and support staff
7. Residency trained physicians
8. Highly experienced physicians
9. Physician specialty board certification
10. Knowledgeable and skilled physicians
11. Explaining trade-offs between service and cost to patient
12. Physician history of malpractice

Expertise

1. You can rely on the staff at the clinic to be well trained and qualified.
2. The staff at the clinic carry out their tasks competently.
3. I believe the staff at the clinic are highly skilled at their jobs.
4. I feel good about the quality of the care given to me at the clinic.

Access

1. The hospital is easily accessible (e.g. parking facilities)
2. Hospital services are easily accessible

Supporting skills

1. Instructions about billing procedures
2. Skills of the nurses attending you
3. Skills of those who performed the test

Comfort

1. Efforts taken for ensuring privacy during examination
2. Provisions for an un-disturbed sleep
3. The quality of the bed
4. The quality and cleanliness of bed linen

Atmosphere

1. The atmosphere at the clinic is pleasing.
2. I like the “feel” of the atmosphere at the clinic.
3. The clinic has an appealing atmosphere.
4. The temperature at the clinic is pleasant.
5. The clinic smells pleasant.

Core medical services

1. Physicians who have published in medical journals
2. Well-established physician referral base
3. Effective utilization of services
4. Physicians who participate in medical research
5. Appropriate utilization of services (non-defensive)
6. Positive medical outcome
7. Orientation to preventative medicine
8. Emphasis on patient education

Operation

1. The clinic’s records and documentation are error free (e.g., billing).
2. The clinic works well with other service providers (e.g., pathology).
3. I believe the clinic is well-managed.
4. The registration procedures at the clinic are efficient.
5. The discharge procedures at the clinic are efficient.
6. The clinic’s opening hours meet my needs.

Discipline

1. Rules and regulations were strictly maintained questions
 2. Cabins: wards were regularly cleaned
 3. Toilet facilities were clean
 4. The staff was disciplined
 5. Cleanliness was maintained throughout the facility
 6. The hospital staff had a clean appearance
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Table ii: Focus Group-based finalized Items with their respective Service Quality dimensions

Assurance
The facility has skilled Doctors
The facility has skilled Nurses
The facility has skilled support staff (attendant, Ayya, technician etc.)
Services are provided efficiently
Medical procedures are correct the first time
Doctors are well-trained
The nurses are well-trained
Support staff (attendant, Ayya, technician etc.) is well trained
Employees are polite
Employees are knowledgeable in answering patients' questions
Employees are courteous, friendly and supportive
Employees get adequate support from employers to do their jobs well
Patients feel safe in their interactions with hospital's employees
Hospital employees maintain the confidentiality of treatment
I can trust the Hospital staff
Empathy
I feel the staff at the clinic understand my needs
The hospital's staff treat me as an individual and not just a number.
Doctors have best interests of the patients in their heart
Nurses have best interests of the patients in their heart
Support staff (attendant, Ayya, technician etc.) have best interests of the patients in their heart
Amount of time spent by staff getting to know and understand my needs was adequate
Visiting hours of hospital suit me
Reliability
The hospital provides its services at the time it promises to do so.
When patients have problems, employees are sympathetic and reassuring
Hospital is accurate in billing

Hospital has Error free and fast retrieval of documents system

Hospital is Instilling patient confidence

Diagnosis is made after careful examination

Tangibles

Hospital has up-do-date and modern equipment.

Hospital's physical facilities are visually appealing.

The waiting areas for medication and for the doctor's office were pleasant.

I felt sense of wellbeing in the hospital

Hospital employees appear neat and well dressed

The appearance of the physical facilities of hospital is in keeping with the health care services provided

Hospital has clean and hygienic wash rooms and ablution facilities

The meals are tasty and hygienic

The meals offers food which is suitable to the patients

Responsiveness

The doctors are responsive to patient's needs

Nurses are responsive to patient's needs

Support staff (attendant, Ayya, technician etc.) is responsive to patient's needs

Hospital doctors are willing to help patients

Hospital nurses are willing to help patients

Patient receive prompt service from hospital's employees

Hospital employees tell patients exactly when services will be performed

Baksheesh

Services were not provided properly without tips

Hospital staff expected tips

Communication

The doctors are willing to answer any questions

I received adequate explanations of any tests I had to undergo

I was given adequate information about my health condition

I was given adequate information about my treatment

Information given on facilities available when I first came to the ward

Table iii: Summary of hospital service quality conceptual tool with operational definitions according to patient’s perspective

Dimension	Sub-dimension	Definition	Atluntas et al. (2012)	Zarei et al, (2012)	Akter et al., (2008)	Dagger et al., (2007)	Kilbourne et al., (2004)	Andleeb (2000)/(2001)	Lee et al., (2000)	Parasuraman (1985)
Assurance	Skill	Practicing the job well			■	■		■	■	
	Professionalism	Conforming to the technical and ethical standards of profession			■	■	■	■	■	
	Competency			■	■			■	■	
	Knowledgeable	Capable to do their job successfully and efficiently Well trained and well-informed	■		■		■			
	Courtesy	Courtesy of personnel and their ability to inspire trust & confidentiality		■			■	■	■	■
	Management Support	Encouraging employees to do their job well						■	■	
Empathy	Caring		■	■		■		■	■	■
	Interaction Quality	Understanding individualized personnel needs and giving them attention		■				■	■	■
		Having best interest of the patients in hearts and utilizing adequate time to discuss their matters								
Reliability	Accuracy	Accurate in diagnosis, billing and documentation etc.	■	■			■		■	■
	Access	Access to patient data on demand	■	■			■		■	
		Reassuring	Provision of services at time when it is promised to do so.		■					■
	Image	Instilling patient confidence.								
Tangibility	Equipment	Possessing modern and up-to-date equipment.	■	■					■	■
	Physical facilities	Provision of adequate, visually appealing physical facilities as per health care demand.	■	■			■		■	■

	Hygiene	Personnel cleanliness and hospital disinfection and sterility.	■		■	■		■	■
	Food/Meals	Provision of hygienic food as per needs of patients.					■		
	Promptness		■	■	■	■		■	■
Responsiveness	Timeliness	Willing to help and provide prompt services to patients.	■		■		■		■
	Responsive	Timely service provision whenever needed		■			■		■
		Respond to patients whenever and whatever services they need.					■		
Bakhsheesh		Provision of services without any expectation of “tip” (extra money in reward of service)			■		■		
Communication	Information	Provision of adequate information about the tests, physical facilities, health conditions and their treatment whenever needed.			■		■		

Table iv: Reliability analysis of dimensions with respective items/statements of patient’s perception

Dimension Name	No. of Items used	Cronbach Alpha value	Items deleted	Remaining Items	Improved Alpha Value
Assurance	15 (q1-q15)	0.947			
Empathy	07 (q16-q22)	0.862	01 (q22)	06	0.920
Reliability	06 (q23-q28)	0.911			
Tangibility	09 (q29-q37)	0.931			
Responsiveness	08 (q38-q45)	0.937			
Bakhsheesh	02 (q46-q47)	0.130	02	00	
Communication	05 (q48-q52)	0.923			
Overall Reliability	52	0.975	03	49	0.980

Table v: Reliability analysis of dimensions with respective items/statements of Patient's expectation

Dimension Name	No. of Items used	Cronbach Alpha value	Items deleted	Remaining Items	Improved Alpha Value
Assurance	15 (q58-q72)	0.935			
Empathy	07 (q73-q79)	0.887	01	06	0.900
Reliability	06 (q80-q85)	0.875			
Tangibility	09 (q86-q94)	0.902			
Responsiveness	08 (q95-q102)	0.913			
Bakhsheesh	02 (q103-q104)	0.229	02	00	
Communication	05 (q105-q109)	0.901			
Overall Reliability	52	0.952	03	49	0.972

Table vi: Respondent's Demography

Demography	Attributes	N(%)
Age	<17	46(5.6)
	17-25	184(22.5)
	26-35	215(26.3)
	36-45	138(16.9)
	>45	234(28.6)
Gender	Male	394(48.2)
	Female	423(51.8)
Education	< Junior high school	132(16.2)
	High school	185(22.6)
	Higher secondary school	144(17.6)
	Graduate	209(25.6)
	Post graduate	147(18)
Occupation	Business/Self Employed/ Entrepreneur	112(13.7)
	Civil servant	38(4.7)
	Employee	147(18)
	Housewife	381(46.6)
	Others	139(17)
Hospital Ownership	Public hospital	480(58.8)
	Private hospital	337(41.2)

Hospital Department	Surgical services	499(61.1)
	Accidents and Emergency	124(15.2)
	Diagnostics (laboratory and radiology)	194(23.7)
Relationship of attendant with Patient	Parents	44(5.4)
	Siblings	108(13.2)
	Spouse	74(9.1)
	Children	151(18.5)
	Others (Self/Relatives/Friends etc.)	440(53.9)
Length of Stay	1-3 hrs.	160(19.6)
	5-7 hrs.	97(11.9)
	Whole Day	91(11.1)
	2-5 days	257(31.5)
	> 5 days	212(25.9)

Table vii: Expectations and Perceptions of respondents with respective composite variables

Item	Expectation (E) Mean ±SD	Perception(P) Mean ±SD	Perception–Expectation (P-E) Mean ±SD	P-Value
PE01	4.68±0.80	4.41±1.00	-0.27±1.108	≤ 0.001
PE02	4.66±0.80	4.24±1.07	-0.42±1.15	≤ 0.001
PE 03	4.60±0.85	3.93±1.29	-0.66±1.37	≤ 0.001
PE 04	4.67±0.78	4.17±1.14	-0.50±1.20	≤ 0.001
PE 05	4.67±0.78	4.11±1.20	-0.57±1.27	≤ 0.001
PE 06	4.78±0.59	4.37±1.06	-0.42±1.04	≤ 0.001
PE 07	4.75±0.67	4.18±1.10	-0.57±1.11	≤ 0.001
PE 08	4.75±0.65	3.84±1.26	-0.91±1.30	≤ 0.001
PE 09	4.72±0.74	3.53±1.43	-1.19±1.54	≤ 0.001
PE 10	4.67±0.79	3.56±1.38	-1.11±1.50	≤ 0.001
PE 11	4.69±0.78	3.57±1.38	-1.12±1.47	≤ 0.001

Table vii: Expectations and Perceptions of respondents with respective composite variables

Item	Expectation (E)	Perception(P)	Perception–Expectation (P-E)	P-Value
	Mean ±SD	Mean ±SD	Mean ±SD	
PE 12	4.65±0.84	3.87±1.22	-0.78±1.28	≤ 0.001
PE 13	4.62±0.86	3.76±1.35	-0.85±1.46	≤ 0.001
PE 14	4.62±0.83	3.94±1.16	-0.68±1.24	≤ 0.001
PE 15	4.65±0.81	3.86±1.29	-0.79±1.32	≤ 0.001
PE 16	4.65±0.82	3.78±1.32	-0.88±1.40	≤ 0.001
PE 17	4.62±0.83	3.78±1.31	-0.85±1.41	≤ 0.001
PE 18	4.68±0.78	4.22±1.13	-0.46±1.26	≤ 0.001
PE 19	4.67±0.77	4.00±1.15	-0.66±1.23	≤ 0.001
PE 20	4.64±0.77	3.70±1.30	-0.94±1.41	≤ 0.001
PE 21	4.65±0.81	3.72±1.31	-0.93±1.44	≤ 0.001
PE 23	4.69±0.80	3.86±1.30	-0.83±1.39	≤ 0.001
PE 24	4.65±0.78	3.78±1.24	-0.86±1.35	≤ 0.001
PE25	4.62±0.84	3.85±1.24	-0.76±1.33	≤ 0.001
PE 26	4.64±0.81	3.71±1.26	-0.93±1.39	≤ 0.001
PE 27	4.65±0.79	3.98±1.16	-0.67±1.27	≤ 0.001
PE 28	4.68±0.75	4.10±1.16	-0.58±1.20	≤ 0.001
PE 29	4.72±0.77	3.89±1.30	-0.83±1.34	≤ 0.001
PE 30	4.63±0.81	3.82±1.27	-0.81±1.35	≤ 0.001
PE 31	4.67±0.79	3.77±1.33	-0.90±1.41	≤ 0.001
PE 32	4.69±0.74	3.78±1.31	-0.91±1.39	≤ 0.001
PE 33	4.67±0.79	4.05±1.20	-0.62±1.30	≤ 0.001
PE 34	4.69±0.77	3.28±1.58	-1.41±1.68	≤ 0.001
PE 35	4.67±0.77	3.74±1.27	-0.94±1.38	≤ 0.001
PE 36	4.57±0.93	3.42±1.38	-1.15±1.54	≤ 0.001

Table vii: Expectations and Perceptions of respondents with respective composite variables

Item	Expectation (E)	Perception(P)	Perception–Expectation (P-E)	P-Value
	Mean ±SD	Mean ±SD	Mean ±SD	
PE 37	4.64±0.84	3.95±1.32	-1.22±1.49	≤ 0.001
PE 38	4.55±0.98	3.88±1.28	-0.60±1.38	≤ 0.001
PE 39	4.54±0.94	3.70±1.32	-0.66±1.34	≤ 0.001
PE 40	4.53±0.94	4.06±1.16	-0.83±1.44	≤ 0.001
PE 41	4.66±0.83	4.00±1.16	-0.59±1.24	≤ 0.001
PE 42	4.66±0.83	3.75±1.27	-0.65±1.29	≤ 0.001
PE 43	4.66±0.82	3.87±1.27	-0.91±1.41	≤ 0.001
PE 44	4.67±0.80	3.85±1.27	-0.80±1.39	≤ 0.001
PE 45	4.63±0.86	2.94±1.61	-0.79±1.41	≤ 0.001
PE 48	4.66±0.86	3.95±1.24	-0.59±1.34	≤ 0.001
PE 49	4.66±0.83	4.02±1.19	-0.70±1.34	≤ 0.001
PE 50	4.68±0.75	4.09±1.14	-0.65±1.26	≤ 0.001
PE 51	4.69±0.76	4.09±1.14	-0.59±1.21	≤ 0.001
PE 52	4.69±0.75	3.69±1.38	-0.99±1.48	≤ 0.001
Total	4.66±0.57	3.51±0.75	-0.74±0.77	≤ 0.001

*PE stands for perception and expectation

Table viii: Discriminant validity estimation

Dimension Name	No. of Items retained	Cronbach Alpha Value	Discriminant Validity (Cronbach's alpha – average correlation between other constructs)
Assurance	03	0.827	0.47
Reliability	02	0.715	0.55
Aesthetics	02	0.754	0.35
Food	02	0.816	0.43
Responsiveness	03	0.887	0.52
Promptness	05	0.878	0.40
Communication	03	0.870	0.50

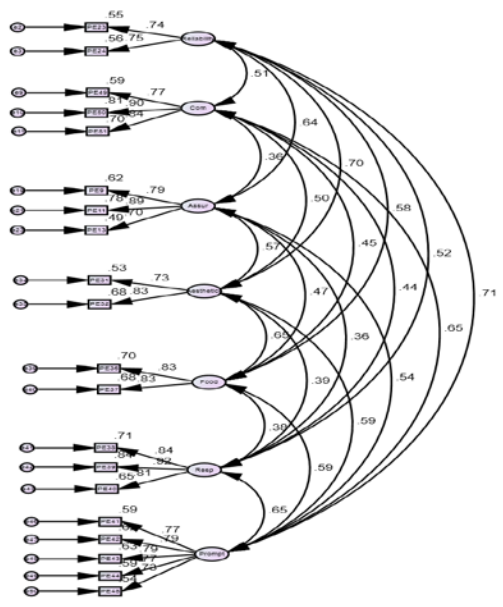


Figure i: Identification of patient's perspective based dimensions using structure equation modeling

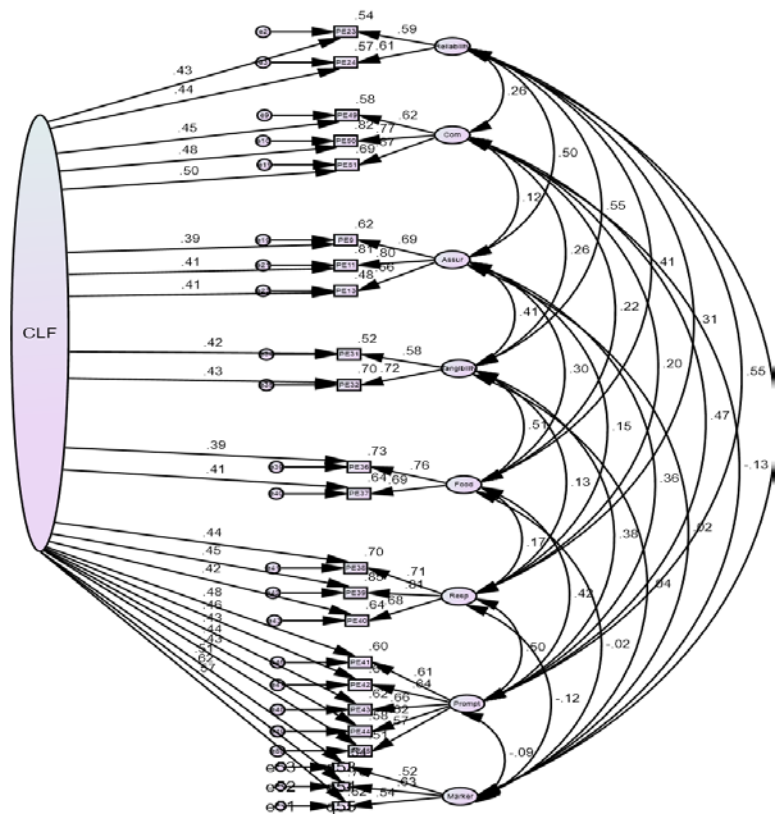


Figure ii: Determination of common method bias

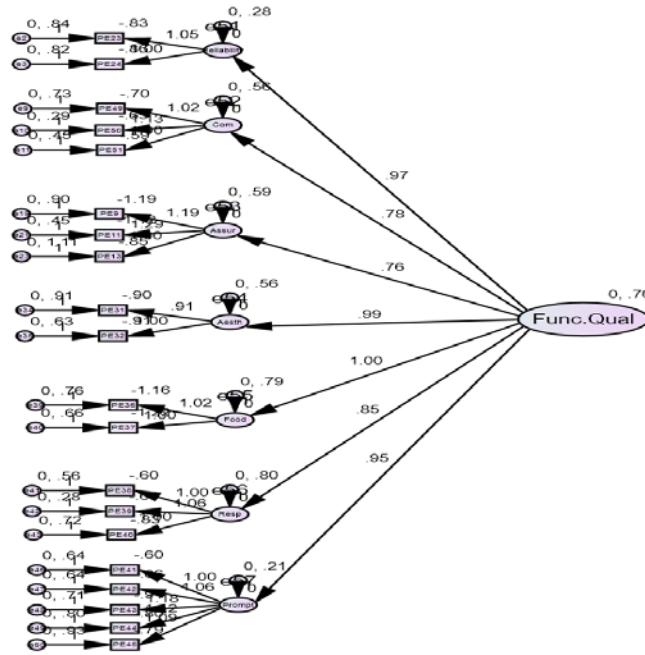


Figure iii: Development of Func.Qual based on second order factor model

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