



**Measuring the Performance of Human Services Providers using SERVQUAL Model:  
Study on governmental hospitals services at Ministry of Health –Khartoum state 2012**

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**ABSTRACT**

One of the most influential models in the service quality literature is the model of service quality gaps. In this study SERVQUAL as an effective approach to measure the quality of provided hospital services in Khartoum State was used and also analysis and results show the gaps between customer expectations and perceptions of the Ministry of Health services. The main objective of this paper is to highlight important service quality gaps associated with external customer services in governmental hospitals services at Ministry of Health –Khartoum state 2012. Moreover, is to point out how management of service improvement can become more logical and integrated with respect to the prioritized service quality dimensions. Findings of this study revealed significant statistical difference in governmental hospitals services at Ministry of Health –Khartoum state between overall Service Perception and overall Service Expectation under (0.05) level of significance where Patient's Service Expectations towards governmental hospitals services at Ministry of Health –Khartoum state 2012 was (70.7%) before consuming health services and their Service Perception was (66.9%) after consuming health services. This result show shortfall( 33.1%) in overall governmental hospitals services at Ministry of Health –Khartoum state 2012.

**المستخلص**

يعد نموذج جودة الخدمة من أهم النماذج التي تم استخدامها في معرفة فجوات جودة الخدمة . ولعلنا في هذه كأداة فعالة ونبراساً يضيء طريق ( SERVQUAL) الدراسة تلقي الضوء على منهجية جودة الخدمة المستشفيات الحكومية بولاية الخرطوم والجهات الخدمية الأخرى وصولاً إلى قياس جودة أدائها، وتحليله وتحسينه بتردم الفجوات السالبة والنتيجة عن توقعات العملاء (المرضى) وإدراكهم الحسي بجودة الخدمة المقدمة لهم. وعليه فإن الهدف الرئيس من هذه الورقة العلمية هو تسليط الضوء على الفجوات (السالبة والموجبة) في جودة خدمات مستشفيات ولاية الخرطوم الحكومية من خلال عين العملاء الخارجين (المرضى) خلال العام(2012). وفضلاً عن ذلك، تهدف الورقة إلى كيفية إدارة تحسين الخدمات الصحية وجعلها أكثر منطقية وشمولية من خلال دراسة أولويات أبعاد جودة الخدمة وفجواتها السالبة والموجبة. ومن أهم نتائج هذه الورقة العلمية، وجود فروق دالة إحصائية في خدمات المستشفيات الحكومية بولاية الخرطوم خلال العام (2012م) بين

المستوى الكلي لتوقعات العملاء (المرضى) لجودة الخدمات الصحية قبل استهلاكها وإدراكهم الحسي بجودة تلك الخدمات بعد استهلاكها عند مستوى معنوية (0.05)، حيث جاء مستوى توقعات العملاء (المرضى) لجودة خدمات المستشفيات الحكومية بولاية الخرطوم خلال العام (2012م) مساوياً لنسبة (70.7%)، في حين أن مستوى إدراكهم الحسي بجودة تلك الخدمات جاء مساوياً إلى نسبة (66.9%) مما يشير إلى عجز المستشفيات الحكومية بوزارة الصحة بولاية الخرطوم خلال العام (2012) عن تحقيق توقعات المرضى بمقدار (33.1%).

**KEYWORDS:** *Tangibles, Reliability, Responsiveness, Empathy, Assurance*

## INTRODUCTIONS:

Measuring the performance of human services providers( like health services) is a complex task. Statistician, Econometrician and management stakeholders developed different approaches to measure hu<sup>57</sup> service performance. One of these approaches is the Servqual approach which used as a tool to show the performance quality of human services providers (companies, industries, government agencies, hospitals, police services...etc). "Managers in the service sector are under increasing pressure to demonstrate that their services are customer-focused and that continuous performance improvement is being delivered" <sup>(1)</sup>. Therefore, the main question of this paper is how can the performance of Ministry of Health - Khartoum-State Hospital's Services be measured?. By answering this question, Government services, including the services covered in health sector, are vital to the community's wellbeing. Better information about Khartoum-State Hospital's Services improves government accountability and contributes to the wellbeing of all Sudanese by driving better government service delivery. Moreover, the main objective of this study is to highlight the way of measuring the Performance of Human Services Providers using SERVQUAL Model and measure governmental hospitals

services at Ministry of Health –Khartoum state 2012 as a case study through:

\*Identifying the levels of health service dimensions and examine the level of service quality?

\*Identifying the gaps between expectation and perception of the external customers towards Khartoum State governmental hospital services?.

\*Identifying differences in service quality dimensions Averages due to Gender, Qualifications, Khartoum State main areas and Hospitals. One of the studies tries to identify the most important dimension and to examine the level of service quality, expectation and perception of the external customers towards the Malaysian public services. Ten SERVQUAL instrument was distributed to each 300 public organizations throughout Malaysia. From 992 copies of usable questionnaire, the overall service quality is quite good. It is found that tangible is the most important dimension. It also has the lowest scores of perception. On the other hand, service quality gap is neither the lowest nor the highest. Finally, these external customers have the highest expectation on the reliability of the Malaysian public service <sup>(2)</sup>. Another study said that Human Resource Development (HRD) is an important area in which total progress and achievement of an organization

lies. A HR or HRD manager should have sound knowledge in various fields and he has to adopt different techniques for practical development purposes. The measurement of service quality is a problematic due to inherent peculiarities and fluctuations regarding human service involved. Several researchers has tried to find out solution for service quality measurement using normal scaling technique like Likert scale, Ordinal scale etc., but they have not yet succeeded to measure service quality in a real time basis. In this paper, he have shown how adopting Human Resource Development upgrade service quality by considering the most important three attributes like responsiveness, empathy and innovative power of the involved human beings (workers) in a real time basis. Measurement and analysis of service quality by the three attributes for different organizations are not enough, therefore this study took five main dimensions to measure Performance of Human Services Providers <sup>(3)</sup>. This study said that "Service Quality within retail units is pivotal for satisfying customers, retaining them and creating loyalty amongst customers. This research uses serqual to analyze the gap between perceptions and expectations of the customer, concerning with the service at retail units in the South Indian state of Andhra Pradesh. Customer Satisfaction level is assessed for the services offered at selects retail units in the city of Hyderabad. Five dimensions in service quality (servqual), tangibility, reliability, responsiveness, empathy, and assurance have been considered for this empirical research <sup>(4)</sup>. General purpose of this research is to know some factors that impact customer satisfaction. The purposes are: (1) To describe applied of service quality (servqual) dimension in retail Business (2) To know service quality (servqual) dimensions that make customers satisfied, and (3) to know service quality (servqual) dimensions that are dominant in influencing customersatisfaction. The research

methodology was carried out in a survey cross-sectional applied to 369 respondents. The data obtained was analyzed by using reliability method, correlation and regression. Result of research showed that services offered by retail units have positive impact and are significant in building customer satisfaction. Findings of this empirical research reiterate the point of view that Service Quality dimensions are crucial for customer satisfaction in retailing – a burgeoning sector with high growth potential and opportunities in fast growing economies like India<sup>(5)</sup>. Moreover, one of the studies mentioned that The State government of Western Australia is currently working through a significant program of local government reform that has as a core objective a reduction in the number of local councils. The perception that there are economies of scale in service delivery is a key reason behind the State governments desire to see a reduction in the number of councils in Western Australia. The following article uses the technique of Data Envelopment Analysis to measure the technical and scale efficiency of councils in Western Australia. The average pure technical efficiency score for Western Australian councils was found to be 83 per cent, and the average scale efficiency score was found to be 94 per cent. This suggests that pure scale effects are not a major source of inefficiency. Detailed returns to scale analysis for the 73 councils where complete data was available revealed that 17 councils were operating at the optimal scale, 26 were operating below the optimal scale, and 30 were operating above the optimal scale <sup>(6)</sup>. On the other hand, a study compared the productive efficiencies of four models of primary care service delivery in Ontario, Canada, using the data envelopment analysis (DEA) method. Particular care is taken to include quality of service as part of our output measure. The influence of the delivery model on productive efficiency is disentangled from patient characteristics using regression analysis. Significant

differences are found in the efficiency scores across models and within each model. In general, the fee-for-service arrangement ranks the highest and the community-health-centre model the lowest in efficiency scoring. The reliance of our input measures on costs and number of patients, clearly favors the fee-for-service model. Patient characteristics contribute little to explaining differences in the efficiency ranking across the models<sup>(7)</sup>. A published dissertation discussed the evaluation of the performance of health services in Khartoum locality using Data Envelopment Analysis (DEA). The dissertation used the number of clinical centers, private health institution, number of vaccination and nutrition centers and numbers of reproductive health units as inputs. On the other hand, the dissertation used number of pharmacies and health services (Blood Bank, Radiology, Laboratories, Ultrasound) and number of coming units for each locality as outputs, during the period 2007-2009. The dissertation used input oriented and output oriented models and discovered inequality distribution of inputs and outputs between health services in Khartoum localities during the period 2007-2009. Therefore, the dissertation recommended redistribution of health resources in all localities so as to maximize its utilities and recommended more studies to be conducted in the future to know the real reasons of inefficiency in some localities and the effect of external factors that create inefficiency rates<sup>(8)</sup>. One of researchers said that despite its appeal for improving government, many state and local governments in USA have not developed performance-measurement systems, and even fewer use these systems to improve decision making. This study examines the factors that affect the utilization of performance measurement, based on the results of a national survey of state and local government officials. The goals of the study were to provide better information on the patterns of usage of performance measurement and to use this

information to develop an elaborated model of the factors presumed to affect utilization. Using distinctions from the policy and evaluation literature, hypotheses were tested and confirmed: Policy adoption is driven more heavily by factors from rational and technocratic theory, whereas actual implementation is influenced by factors addressed by political and cultural considerations<sup>(9)</sup>.

## **MATERIALS AND METHODS:**

SERV-QUAL methodology and its instrument was used as a tool to measure the performance of governmental hospitals services at Ministry of Health –Khartoum state 2012. The SERV-QUAL instrument ascertain any actual or perceived gaps between customer expectations and perceptions of the service offered. Parasuraman mentioned ten factors for evaluating service quality (including tangible, reliability, responsiveness, courtesy, credibility, security, accessibility, communication and understanding the customer)<sup>(10)</sup>. These ten factors are simplified and collapsed into five factors. These five factors According to this model, SERVQUAL scale has proposed by Parasuraman thereafter for measuring 5 main Gaps<sup>(11)</sup>. Dimensions of these gaps are stated as follows<sup>(12,13)</sup>: 1) Tangibles. Physical facilities, equipments and appearance of personnel. 2) Reliability. Ability to perform the promised service dependably and accurately. 3) Responsiveness. Willingness to help customers and provide prompt service. 4) Assurance (including competence, courtesy, credibility and security). Knowledge and courtesy of employees and their ability to inspire trust and confidence. 5) Empathy (including access, communication, understanding the customer). Caring and individualized attention that the firm provides to its customers. The SERVQUAL approach contains a questionnaire that evaluates five generic service dimensions or factors through 22 questions, evaluating both expectation and performance using a Five point Likert scale. This approach evaluates service quality by calculating difference (gap) between

customer expectations and perceptions (service quality= (P – E). 'P' denotes customer perception of service or performance and 'E' denotes expectations before a service encounter deliver the actual service <sup>(14)</sup>. If the answer is negative, then dissatisfaction occurs, otherwise, the Service Quality is achieved. This equation is usually called gap analysis <sup>(15)</sup>, but as it was emphasized, this approach only measures (5) main gap of service dimensions in governmental hospitals services at Ministry of Health –Khartoum state 2012 and the results will be compared with other similar studies.

### Study Population

every and each governmental hospital (48 hospitals) at Khartoum State is considered to be an element under study, and hence all patients who get treatments from these hospitals are elements of the population to be studied.

### Sample size & Sampling Method

To measure the performance of hospitals through using Serv-Qual methodology, (15) proportional Hospitals from (Khartoum, Khartoum North, Oumdruman) were selected randomly from (48) hospital. and a sample size (450) patients were selected randomly from the population stated above by using the sample size equation under level of precision equals (e = ±5%), Confidence Level is 95% and P=0.5 & q =0.5. Since the expected number of Khartoum Hospitals patients is more than 100,000 patients the representative minimum sample size is (400) patient. On the other hand, Cluster Random Sampling method was used. Khartoum state will be divided into three categories: Khartoum North, Omdurman and Khartoum. Thereafter the sample size of(400) patients + 50 will be distributed according to the proportional number of hospitals within every and each category Table (1) shows the names of hospital that selected randomly and proportionally from each category

Table (1) Sample Size of Hospitals

Ser	Hospital Sample	sample size(patients)
1	Academy	30
2	Azonn, Anf & Hangara	30
3	Sharig Al- Nile	30
4	Ibn - Sina	30
5	Oamadopan	30
6	Omdurman Al-talimy	30
7	Abusad	30
8	Bahri Al-talimy	30
9	Alkbashi	30
10	Al- mantig Al-hara	30
11	Al-Srorab	30
12	Jabal- Aolia	30
13	Al-Turky	30
14	Hawadis Al-afal	30
15	Alno	30
Sample Size		450

### Data collection

An international designed questionnaire (Serv-Qual) was selected, and amendment has been made after testing the validity by distributing it to different specialist in the field of health, statistics and administration. Pretest for the questionnaire has been made by distributing (30) questionnaire to different patients within the sample to measure the Reliability and the following table (2) shows the reliability coefficients of tangibility, reliability, responsiveness, empathy, and assurance for both perceptions and expectations. These very high reliability coefficients is an indication of a very high consistency in the questionnaire and that it is suitable for measuring the functional quality of health services in Khartoum State.



**Table (2)** Questionnaire reliability coefficients

Factors	reliability coefficients	
	Perceptions	Expectations
Tangibility	0.9302	0.9210
Reliability	0.9382	0.9210
Responsiveness	0.9317	0.8716
Empathy	0.9193	0.9026
Assurance	0.9516	0.9339
Total	0.9808	0.9736

**Statistical Analysis:** The Fifth Likert Scale was remedied and transferred from ordinal variable to be continuous variable so as to enable parametric analysis as follows:

To get the percentages of the averages, Ordinal Data of Likert Scale to Continuous Category

Not very satisfied = 1	to	1 -----1.79	61
Not satisfied =2	to	1.8 -----2.599	
Satisfied to some extend = 3	to	2.6 -----3.399	
Satisfied = 4	to	3.4-----4.199	
Very satisfied = 5	to	4.2----- 5	

the following equation was used:

$$\frac{Average-1}{Range} \times 100\% \text{ where Range} = 5 - 1 = 4$$

Thereafter Paired Samples T-Test, Independent T- Test and Analysis Of Variance were used to Discover significant statistical difference in governmental hospitals services at Ministry of Health –Khartoum state with respect to Demographic Characteristics.

**Response Rate:**

Moreover, the response rate equals (99%) that about (446) questionnaire were received out of (450) questionnaire distributed. The majority respondents with percentage of (39.9%) is from Omdurman, (33.4%) from Khartoum, and (26.7%) from Khartoum North respectively. The percentage of Females respondents is (58.5%) and males respondents with (35.2%) and about (6.3%) represents the missing values of gender. The percentage of Secondary school or less participated in this study represent (61.4%) of (446) , and Baccalaureate participant represents (28.5%), Master participants represent (6.7%) , Ph.d participants represent (0.9%) and other qualifications represent (2.5%). The following table (3) shows the distribution of (446) respondents due to different hospitals, where the highest number of participants (31) at Al- mantig Al-hara and Oamadopan hospitals, and the lowest is (28) at Al-Srorab Hospital. From these (15) hospitals sample, this study will generalize the gap between the perception and expectation of health services in State of Khartoum Ministry of Health.

**Analysis and Results:**

**1- Serv-Qual Descriptive Analysis:**

**Paired Samples T-Test**

The finding of table (4) below show significant statistical difference in governmental hospitals services at Ministry of Health –Khartoum state between overall Service Perception and overall Service Expectation under (0.05) level of significance where Patient’s Service Expectations towards governmental hospitals services at Ministry of Health –Khartoum state 2012 was (70.7%) before consuming

Table (3) Distribution of sample size on Khartoum State Hospitals

Hospital	Frequency	Percent	Hospital	Frequency	Percent
Jabal- Aolia	29	6.5	Alkbashi	29	6.5
Sharig Al- Nile	30	6.7	Al-Turky	30	6.7
Oamadopan	31	7.0	Al- mantig Al-hara	31	7.0
Alno	30	6.7	Omdurman Al-talimy	30	6.7
Abusad	30	6.7	Ibn - Sina	30	6.7
Bahri Al-talimy	29	6.5	Academy	30	6.7
Al-Srorab	28	6.3	Hawadis Al-afal	29	6.5
Azonn, Anf & Hangara	30	6.7	Total	446	100.0

health services and their Service Perception was (66.9%) after consuming health services. This result show shortfall( 33.1%) in overall governmental hospitals services at Ministry of Health –Khartoum state 2012. On the other hand, patient’s Service Perception of governmental hospitals services at Ministry of Health –Khartoum state 2012 represented different levels where Assurance Dimension represents(73.2%), Empathy Dimension represents (69.7%), Tangibles Dimension represent(66.4%), Reliability Dimension represents (63%)

and Responsiveness Dimension represents (61.2%) respectively . In more detail the shortfall in Responsiveness Dimension represents (38.8%), Reliability Dimension represents (37%), Tangibles Dimension represents (33.6%), Empathy Dimension represents (30.3%), Assurance Dimension represents(26..8%) respectively.

**2-Independent T-Test to Discover Differences Due to Gender Is there Differences in service Quality Dimensions Averages due to Gender?**

The following table (5) shows no statistical significant differences in all service dimensions due to Gender under (0.05) level of significance. That means males(M) and females(F) attitude towards hospitals are the same. Therefore, the differences between male and female revealed in the table is due to sampling error or chance.

**3- Analysis Of Variance to Discover Differences Due to Khartoum State main Areas: Is there Differences in service Quality Dimensions Averages due to Khartoum State main Areas?**

The table No.(6) below shows statistical significant differences in overall dimensions of service perception due to Khartoum State main Areas under (0.05) level of significance ( $0.02 < 0.05$ ). That means health service perception is highest in Omdurman area (71.1%) and next in Khartoum North(65.5%) and in Khartoum (62.8%) respectively. On the other hand, also there is statistical significant differences in overall dimensions of service Expectations due to Khartoum State main Areas under (0.05) level of significance ( $0.01 < 0.05$ ) which means that health service Expectations is highest in Omdurman area (75.5%) and next in Khartoum (73.8%) and in Khartoum (72.5%) respectively . look at table(6) to see the difference per each and every service dimension within Khartoum State areas.

#### **4- Analysis Of Variance to Discover Differences Due to Respondent's Qualifications:**

The table No.(7) below shows very high statistical significant differences in overall dimensions of service perception

due to Respondent's Qualifications under (0.05) level of significance ( $0.000 < 0.05$ ). That means health service perception is highest in respondents who possess Secondary or less certificate (73.3%) and next in respondents who possess Phd and Master (57.6%) and in respondents who possess Baccalaureate (55.7%) respectively. On the other hand, also there is very high statistical significant differences in overall dimensions of service Expectations due to Respondent's Qualifications under (0.05) level of significance ( $0.000 < 0.05$ ) which means that health service Expectations is highest in respondents who possess Secondary or less certificate (74.8%) and next in respondents who possess Phd and Master (68.9.%) and in respondents who possess Baccalaureate (62.8%) respectively . look at table(7) to see the difference per each and every service dimension within Respondent's Qualifications.



**Table 4** Serve – qual Descriptive Analysis

Ser	Variables	P= Service Perception			E= Service Expectation			Gap Analysis	
		Mean	S.d	%	Mean	S.d	%	P-E	Sig
<b>Dimension1: Tangibles</b>									
1	Excellent hospitals will have modern looking equipment.	3.64	1.456	66%	3.59	1.45	64.7%	+(0)	0.435
2	The physical facilities at excellent hospitals will be visually appealing	3.71	1.394	67.7%	3.73	1.34	68.2%	-(0)	0.828
3	Personnel at excellent hospitals will be neat in appearance	3.71	1.411	67.7%	3.75	1.30	68.7	--(0)	0.487
4	Materials associated with the service(such as pamphlets or statements) will be visually appealing in an excellent hospital	3.56	1.472	64%	3.70	1.43	67.5%	-	0.029
<b>Total</b>		<b>3.6562</b>	<b>1.28686</b>	<b>66.4%</b>	<b>3.6910</b>	<b>1.25</b>	<b>67.3%</b>	<b>-- (0)</b>	<b>0.453</b>
<b>Dimention2: Reliability</b>									
5	When excellent hospitals promise to do something by a certain time they will do so	3.64	1.46	66%	3.78	1.39	69.5%	-	0.016
6	When a patient has a problem excellent hospitals will show a sincere interest in solving it	3.58	1.43	64.5	3.80	1.35	70%	-	0.000
7	Excellent hospitals will get things right the first time	3.42	1.46	60.5%	3.83	1.36	70.7%	-	0.000
8	Excellent hospitals/clinics will provide their services at the time they promise to do so	3.34	1.5	58.5%	3.64	1.452	66%	-	0.000
9	Excellent hospitals will insist on error-free records	3.67	1.4	66.7%	3.78	1.35	69.5%	-	0.037
<b>Total</b>		<b>3.5216</b>	<b>1.24</b>	<b>63%</b>	<b>3.77</b>	<b>1.20</b>	<b>69.2%</b>	<b>-</b>	<b>0.000</b>
<b>Dimension3 Responsiveness</b>									
10	Personnel in excellent hospitals will tell patients exactly when services will be performed	3.67	1.427	66.7%	3.77	1.391	69.2%	-(0)	0.076
11	Personnel in excellent hospitals will give prompt service to patients	2.96	1.652	49%	3.50	1.566	62.5%	-	0.000
12	Personnel in excellent hospitals will always be willing to help patients	3.68	1.414	67%	3.80	1.360	70%	-	0.043
13	Personnel in excellent hospitals will never be too busy to respond to patients'	3.58	1.455	64.5%	3.81	1.358	70.2%		

	requests							-	0.000
<b>Total</b>		3.4747	1.27	61.2	3.7190	1.29	68%	-	0.000
<b>Dimension 4: Assurance</b>									
14	The behavior of personnel in excellent hospitals will instill confidence in patients	4.02	1.219	75.5%	4.14	1.063	78.5%	-	0.006
15	Patients of excellent hospitals will feel safe in their dealings with the hospital	3.85	1.273	71.2%	3.98	1.219	74.5%	-	0.011
16	Personnel in excellent hospitals will be consistently courteous with patients	3.91	1.301	72.7%	4.06	1.207	76.5%	-	0.007
17	. Personnel in excellent hospitals will have the knowledge to answer patients' questions	3.93	1.288	73.2%	3.98	1.250	74.5%	_(0)	0.345
<b>Total</b>		3.9285	1.11	73.2%	4.0405	1.07	76.01	-	0.006
<b>Dimension 5 : Empathy</b>									
18	Excellent hospitals will give patients individual attention	3.90	1.304	72.5%	4.00	1.209	75%	-	0.049
19	Excellent hospitals will have operating hours convenient to all their patients	3.72	1.350	68%	3.88	1.335	72%	-	0.003
20	Excellent hospitals will have staff who give patients personal attention	3.81	1.252	70.2%	4.01	1.132	75.2%	-	0.000
21	Excellent hospitals physicians will have the patients' best interests at heart	3.90	1.279	72.5%	3.91	1.332	73%	_(0)	0.963
22	The excellent hospitals introduce services to patients at the same level & without nepotism and favoritism	3.61	1.542	65.2%	3.80	1.434	70%	-	0.000
<b>Total</b>		3.7896	1.19	69.7%	3.9183	1.18	73%	-	0.002
<b>Overall Total</b>		3.6743	1.12	66.9%	3.8292	1.13	70.7%	-	0.000

**Table (5)** Independent T- Test to Discover Differences Due to Gender

Dimensions	Perceptions					Expectations				
	M ( $\bar{y}$ )	%	F ( $\bar{y}$ )	%	Sig	M ( $\bar{y}$ )	%	F( $\bar{y}$ )	%	Sig
Assurance	3.89	72.3	3.96	74.0	0.556	4.03	75.7	4.06	76.5	0.775
Empathy	3.67	66.7	3.86	71.5	0.111	3.83	70.7	3.99	74.9	0.149
Tangibles	3.58	64.6	3.73	68.3	0.246	3.62	65.5	3.78	69.4	0.207
Reliability	3.43	60.8	3.61	65.4	0.146	3.72	68.1	3.83	70.8	0.376
Responsiveness	3.38	59.5	3.57	64.2	0.148	3.59	64.7	3.83	70.9	0.056
Overall Total	3.59	64.7	3.75	68.7	0.157	3.76	69.0	3.90	72.6	0.197

**Table No. (6)** Analysis Of Variance to Discover Differences Due to Khartoum State main Areas

Dimensions	Perceptions							Expectations						
	Khartoum		Omdurman		Khartoum North		Sig	Khartoum		Omdurman		Khartoum North		Sig
	( $\bar{y}$ )	%	( $\bar{y}$ )	%	( $\bar{y}$ )	%		( $\bar{y}$ )	%	( $\bar{y}$ )	%	( $\bar{y}$ )	%	
Tangibles	3.5	62.4	3.8	70.5	3.6	65.3	0.07	3.6	66.2	3.9*	71.6	3.5*	62.2	0.03
Reliability	3.3*	57.4	3.8*	69.5	3.4	61	0.00	3.7	66.5	3.9	73.1	3.7	66.5	0.09
Responsiveness	3.3	57.5	3.6	65.7	3.5	61.6	0.07	3.5*	63.4	3.94*	73.7	3.6	65.1	0.01
Assurance	3.9	71.4	4.1	76.4	3.8	70.7	0.14	3.9*	72.5	4.21*	80.4	3.9	73.8	0.02
Empathy	3.6	65.7	3.9	73.2	3.7	69.6	0.08	3.8*	69.9	4.13*	78.4	3.8	68.8	0.01
Overall Total	3.5*	62.8	3.8*	71.1	3.6	65.5	0.02	3.7	67.7	4.02*	75.5	3.69	67.3	0.01

**Table No. 7** Analysis Of Variance to Discover Differences Due to Respondent's Qualifications

Dimen sions	Perceptions							Expectations						
	Phd and Master		Baccalaureat e		Secondary or less		Sig	Phd and Master		Baccalaureate		Secondary or less		Sig
	( $\bar{y}$ )	%	( $\bar{y}$ )	%	( $\bar{y}$ )	%		( $\bar{y}$ )	%	( $\bar{y}$ )	%	( $\bar{y}$ )	%	
Tangib les	3.1	51.8	3.1 1	52.6	3.98*	74.7	0.00	3.5 4	63. 4	3.34	58.5	3.88 *	72.1	0.00
Reliab ility	3.2	54.6	3.0	50	3.82*	70.5	0.00	3.5 8	64. 4	3.45	61.1	3.94 *	73.6	0.00
Respo nsiven ess	3.1	53.9	3.0 3	50.7	3.74*	68.5	0.00	3.6 8	67. 1	3.34	58.6	3.91 *	72.7	0.00
Assura nce	3.7	68.4	3.5 9	64.7	4.11*	77.8	0.00	4.1 3	78. 3	3.75	68.9	4.17 *	79.3	0.01
Empat hy	3.4	59.7	3.4 4	61	4.02*	75.4	0.00	3.8 7	71. 6	3.66	66.5	4.05 *	76.3	0.01
Overall Total	3.3	57.6	3.2 3	55.7	3.93*	73.3	0.00	3.7 6	68. 9	3.51	62.8	3.99 *	74.8	0.00

**5- Analysis Of Variance to Discover Differences Due to Respondent's Hospital:**

The table No.(8) below shows very high statistical significant differences between Khartoum State Hospital's health service perception and expectations under (0.05) level of significance ( $0.000 < 0.05$ ), Where Al-Srorab Hospital got the highest health service perception (89.5%) in Khartoum State and Jabal- Aolia Hospital got the lowest health service perception and expectations in Khartoum State(15.1%)

and (21.6%) respectively. There is very high significance differences between every Hospital perceptions and Expectations (the difference is negative P-E= Negative Sign) which means that there is a shortfall in Khartoum State health services according to the perspectives of patient's satisfaction. Look at table (8) to see the difference between each and every hospital's health service perception and expectations and differences within hospitals.

**Table No. (8) Analysis Of Variance to Discover Differences Due to Respondent's Hospital**

Hospitals	Perceptions*			Expectations*		
	Sample Size	( $\bar{y}$ )	%	Sample Size	( $\bar{y}$ )	%
Al-Srorab	28	4.5812	89.5	28	4.6061	90.2
Sharig Al- Nile	30	4.3939	84.8	30	4.4318	85.8
Abusad	30	4.3652	84.1	30	4.6409	91.0
Al- mantig Al-hara	31	4.1584	79.0	31	3.9677	74.2
Academy	30	4.1152	77.9	30	4.3985	85.0
Hawadis Al-attfal	29	4.0925	77.3	29	4.5752	89.4
Oamadopan	31	4.0587	76.5	31	4.1613	79.0
Ibn - Sina	30	4.0500	76.2	30	4.8106	95.3
Azonn, Anf & Hangara	30	4.0424	76.1	30	3.4394	61.0
Alkbashi	29	4.0329	75.8	29	3.9216	73.0
Al-Turky	29	3.6850	67.1	29	3.9828	74.6
Omdurman Al-talimy	30	3.5091	62.7	30	3.8894	72.2
Alno	29	2.3605	34.0	29	2.4781	36.9
Bahri Al-talimy	29	1.9530	23.8	29	2.2006	30.0
Jabal- Aolia	29	1.6050	15.1	29	1.8636	21.6
Overall Total	444	3.6743	66.8	444	3.8292	70.7
Sig		0.000		Sig	0.000	

\* There is very high significance differences between every Hospital perceptions and Expectations( the difference is negative P- E= Negative Sign)

## DISCUSSION :

It is found that Service Perception of Assurance Dimension (73.2%) versus Service Expectation (76.01%) is an opportunity for governmental hospitals services at Ministry of Health –Khartoum state to be a base for improving its services by filling the significance negative gap that revealed under (0.05) level of significance and to improve shortfalls levels in Responsiveness Dimension (38.8%), Reliability Dimension (37%), Tangibles Dimension (33.6%), Empathy Dimension (30.3%). The results showed that there was no statistical significant differences in all service dimensions due to Gender under (0.05) level of significance. That means males (M) and females (F) attitude towards hospitals are the same. Respondents who possess (Phd and Master). and Baccalaureate provided a very low evaluation towards health service perception in Khartoum State (57.6%) and (55.7%) respectively, and this result necessitated an urgent improvement to health services in Khartoum State. The findings of this study told us that there were high expectations and perceptions on the assurance dimension, whereas one of the studies found that external customers have the highest expectation on the reliability of the Malaysian public service<sup>[5]</sup>. On the other hand, some of the previous studies concentrate on studying technical efficiency using data envelopment analysis as tool to measure hospital performance and we use Serv-Qual to measure performance, but here we can say that it is very important to merge both technical efficiency, Serv- Qual and strategic plans approaches in one single approach to measure governmental human service providers in future researches.

## CONCLUSIONS

As conclusion the findings of this study have important practical implications in the field of health and management of quality in all governmental service providers . This study provided the usefulness of the

SERVQUAL approach as a measure of service quality and patient feedback for quality assurance. Our final recommendation is that officials and stakeholders of governmental hospitals services at Ministry of Health –Khartoum state must train their staff to be more professional and courteous when dealing with patients. The best way is for the management to look at improving on aspects such as improving physical facilities(tangibles), training of staff to be more responsiveness and communicating precise information on all health activities.

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