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**The Effect of Unlimited Improvement On Education Service Quality: A
Research At Baghdad University**

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The Effect of Unlimited Improvement On Education Service Quality: A Research At Baghdad University

Mohammed Jaber MOHAMMED

Abstract

The researchers focused their studies on the use of continuous improvement in the educational process through a procedure adjustments and improvements to teaching performance by excluding traditional means and replacing them with modern means Such as the use of computer hardware, displays, laboratories and modern means of communication in a manner that leads to improvement The efficiency of teaching performance, which in turn is reflected in the educational process and efficiency of the outputs of this process. It was realized that educational institutions should adopt modern methods of learning in order to ensure keeping abreast of the scientific developments that serve the educational process, thus contributing to the speed of communication between the student and the teacher Helps to survive under technological developments. In the current research, the impact of unlimited improvement on service quality was statistically tested through the case study of Baghdad university. The findings through the regression analysis indicate a positive relationship between the two concepts.

Keywords: Unlimited Improvement, Service Quality, Higher education, Iraq

Jell Code: M11

I. Introduction

Adopting the concept of continuous improvement in university services is one of the strategies that aims to provide high quality outcomes with competitive advantage that enables graduates to face future challenges. Continuous development emerged in management, scientific and applied research, providing innovative environments and appropriate infrastructures. Modern teaching aids and the use of ICTs in the educational process contributed into Improving the interactive relationship between the student, the teacher and the management, contributed into enhancing the





effectiveness of learning, and increased the flexibility of the educational process. The continuous improvements in the educational process enabled the students to communicate efficiently, especially that the use of modern technologies in the educational process led to the increase of the mental abilities of the students through driving innovation. Such a process enforced new requirements from the management of the educational institutions to provide infrastructure to accompany these developments.

The problem addressed in this research is studying the effect of implementing the concept of unlimited improvement on the enhancing service quality through the context of higher education in a reputable Iraqi university. Unlimited improvement is a quality management concept that aims to ensure the continuity of quality enhancements, as well as extending quality management practices to all parts of the organization, its management and stakeholders. Service quality is a concept that was developed in the 1980s to address the gaps between the perceptions and the expectations of the management, employees and customers of the quality of the service provided by a business.

2. Literature Review

Parasuraman, Zeithaml and Berry conducted a study that determined ten dimensions of the quality of service that can be generalized to any type of service, it includes these dimensions: realism, reliability, responsiveness, competence, access, courtesy, communication, credibility, Security, and understanding. In addition, these ten dimensions have been reorganized into the five dimensions known in the SERVQUAL Model, which include: tangibles, empathy, reliability, responsiveness, and assurance (Parasuraman, Zeithaml, & Berry, 1985).

Another study was conducted to assess service expectations in higher education institutions from the point of view of professional service providers and students indicated that there is a difference between students' expectation of educational services in comparison with the expectations of faculty members. The researchers suggested that it is possible to manage student expectations through reducing the gap between both expectation, which will potentially lead to the increase in the quality of educational services and student satisfaction levels (Dervitsiotis, 2003).

Shago (2005) aimed to measure students' perceptions of their learning





experiences and needs at Tshwane University of Technology in terms of provided services to students, and how such information can be applied to improve the quality of teaching and learning at the university. The analysis focused on the areas that students rated as important, which they expressed satisfaction with, as well as those aspects that were of great importance, but were slightly satisfied with them (Evans & Dean, 2003).

Continuous improvement (CI) is a trial from some industrial companies to achieve continuous reduction in costs. The roots of the concept are traced to Japan, where the term was known Kaizen. The Japanese adopted production enhancements through gradual improvements and minor repairs in activities. The processes that the production units undergo, in particular and the amounts being spent during the year Perform continuous improvement Loss, damage and cuts can be made through Contributes to the attempt to achieve the desired goals (Hilton, 2005).

Unlimited Improvement is a philosophy developed by Taiichi Ohno to lead industrial enterprises and financial institutions, as well as their application in all aspects of life, based on analysis and process. In the field of business and industry, the word "Kaizen" usually refers to activities that continuously improve all aspects of work, such as industry and management, which improve standard activities and work methods. The Kaizen philosophy primarily works to prevent wasted energy, time and energy. The theory was applied in several fields during the re-reform of Japan after the Second World War and since then has spread in the fields of business all over the world, The process of unlimited improvement is the essence of TQM. It is the blood that is carried out in the veins of TQM. Its methodology is based on "continuous improvements in all areas of work in the organization, in order to adapt permanently to the changes that occur in the internal and external environment of the organization. Quality management, it aims to reach "full agreement through continuous improvement in the production processes of the organization While the process of continuous improvement of quality management is "to come up with the new and the better permanently, the new and better are the symbol of excellence and therefore survival and continuity, to stay on the old means the disappearance" (Evans & Dean, 2003).

Many researchers and writers have gone on a statement unlimited improvement Kaplan & Atkinson (1998) defined continual improvement as





"the technology that draws the attention of senior management to think about how it can motivate readers and their staff at all levels to find ways to reduce costs for the product or service". Weetman (2006) defined it as "the process of short-term improvements in small, repetitive items compared to large-scale long-term fundamental change events by reducing variable costs At certain rates". Mclancy (2007) defined Continuous improvement as "a method of continuously improving improvements in the cost profile through the process of manufacturing the product in such a way as to reduce the cost of the unit produced or The offered service".

3. Aim of Study

The aim of the study is to research the effect of unlimited improvement on service quality through an application on the students and staff of Baghdad University.

4. Scope and Methodology

The focus of this research is on unlimited improvement and the reality of educational services (service quality) in Iraqi universities. Due to the teaching experience the researcher has at the University of Baghdad, he has the ability to anticipate the issues and communicate with the students and faculty members for data collection. The acquired sample is expected to achieve a reliability of at least 95%, as per academic research conduct Küçük (2016a) stated that sample mass determination and sampling should be performed within systematic steps, which are:

- Definition of the main mass
- Sample frame
- Determination of sample size
- Determination of sampling method
- Selection of sample

The basic type of probability sampling is the random sample, in which every item in the relevant world has an equal opportunity of being selected. The research relies on the use of inductive and deductive methodology, and both approaches are considered. In an integrated approach, the inductive approach starts from the molecules to reach accredited colleges. The first is the observation of the phenomenon, to development of scientific hypotheses, and then the final stage of the curriculum. The extrapolation is a test of hypotheses, relying on the methodological deductive Stages. Note the





phenomenon under study, where the researcher extrapolated and reviewed studies, scientific research and periodicals related to subject, which helped to form a scientific background for different aspects of research (Küçük, 2016b: 68-81 and Küçük: 2021).

The development of scientific hypotheses for research was in light of the framework and the necessary data were identified through questionnaires taken by the staff and students at the University of Baghdad. The hypotheses are tested using SPSS Statistics 23.0 to reach search results and validation test to achieve and evaluate the research objectives, and to determine the possibility dissemination of research results to the study population. Data collection is the systematic approach to gather and measure information from variety of sources to get a complete and accurate picture of an area of interest. Data collection enables a person or organization to answer relevant questions, evaluate outcomes and make predictions about future probabilities and trends. Data were obtained to achieve the objectives of the study based on two sources; literature and data collected from the case study (Küçük, 2016a: 93-98 and Çağlayan, 2022).

5. Research Model

Quality management tools and frameworks have shown their impact on enhancing the level of the quality and positively impacting the professional practices within the organization. Therefore, it is important to understand the effect of each quality management concept on other concepts that are proven for positive impacts. Service quality has been marked as one of the most important quality management concepts through many studies (Liu & Wang, 2017). Moreover, the concept of unlimited improvement has been shown to enhance the performance of the organization (Benshina, 2018). Thus, studying the impact of unlimited improvement (Küçük, 2022) on service quality is significant in order to understand the relationship between the two concepts for a more efficient implementation.

The research model applied in this research is shown in Figure A, where the effect of unlimited improvement on service quality is tested. The concepts are evaluated on a 6-point Likert scale.





H1



Figure 1: Research Model

6. Hypothesis

Küçük (2016b) has developed a scale for unlimited improvement which consists of 19 indicators. The main aim of the concept is to ensure the extension of quality management practices to all organizational and operational aspects without limitation or exception. The unlimited improvement concept has several areas of focus that are not emphasized in other quality management frameworks, such as optimization, training and organization structure. In studying the relationships and effects of unlimited improvement, the majority of the studies focused on its correlation or influence on organizational performance. Ay and Nurov (2017) studied the impact of unlimited improvement on performance, where a positive effect was found. In studies that researched service quality, the main correlation established is with performance (Akroush and Khatib, 2009; Cheng and Lin, 2014). Other studies studied service quality and its impact on customer satisfaction (Ghimire, 2012).

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H1: Unlimited Improvement has an effect on Service Quality through the case of Baghdad University in Iraq

7. Data Analysis

Table 1 shows the demographic information that are provided by the study participants. In the gender criterion, 62.1% of the sample were males and 37.9% were females. The majority of the sample (60.3%) were students, and the majority of the sample has the age between 17 and 35 years old.





Table 1: Demographic information (n=116)

Criterion	Category	Count	Percent (%)
Gender	Male	72	62.1
	Female	44	37.9
Relation to Baghdad University	Management	6	5.2
	Staff	10	8.6
	Instructor/ Professor	30	25.9
	Student	70	60.3
Age	17 to 25 years	42	36.2
	26 to 35 years	40	34.5
	36 to 45 years	22	19.0
	46 years and more	12	10.3

In order to test the impact of the sample demographics on the results of the research, an ANOVA testing was conducted for gender and education level impacts, as shown in Table 2 and Table 4. Both gender and education level had no influence on the results to the $p < 0.05$ level. However, as shown in





Table 2: ANOVA testing for gender effect

		Sum of Squares	df	Mean Square	F	Sig.
UI	Between Groups	1,167	1	1,167	,851	,360
	Within Groups	76,772	114	1,371		
	Total	77,939	115			
Service Quality	Between Groups	,042	1	,042	,047	,830
	Within Groups	50,719	114	,906		
	Total	50,762	115			

Table 3, Service quality showed a significance difference according to the relation to the university of Baghdad.

Table 3: ANOVA testing for relation to Baghdad university effect

		Sum of Squares	df	Mean Square	F	Sig.
UI	Between Groups	7,818	3	2,606	2,007	,124
	Within Groups	70,121	112	1,299		
	Total	77,939	115			
Service Quality	Between Groups	7,899	3	2,633	3,317	,027
	Within Groups	42,863	112	,794		
	Total	50,762	115			





Table 4: ANOVA testing for age effect

		Sum of Squares	df	Mean Square	F	Sig.
UI	Between Groups	3,921	3	1,307	,954	,421
	Within Groups	74,017	112	1,371		
	Total	77,939	115			
Service Quality	Between Groups	,631	3	,210	,226	,878
	Within Groups	50,131	112	,928		
	Total	50,762	115			

A factor analysis was performed for the dimensions and indicators of service quality (results shown in Table 5). The KMO value found validates the factor analysis, which is a value of 0.880 and the eigen value was found greater than 1. This indicates the correlation between the different factors and the reliability of the results. All factors are above 0.4, which leads to the inclusion of all items in the analysis. Since the total variance explained is around 60%, this adds further validation to the results of the analysis (Küçük, 2016: 227-232).





Table 5: Factor Analysis for Service Quality (n=116)

		Factor Loading	Eigen value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
Service Quality			10.50	62.787	0.949	3.920	0.880
1	University has modern looking equipment	0.769				4.05	
2	University's physical facilities are excellent and visually appealing	0.726				3.78	
3	Employees of the university have neat appearance	0.619				4.76	
4	Educational products (books, desks, boards, notes, etc.) visually appealing	0.683				3.97	
5	The aims of the education are delivered as promised	0.679				3.97	
6	University attends to university and employees' problems with sincere interest	0.825				3.60	
7	University services	0.812				3.55	





Table 5: Factor Analysis for Service Quality (n=116)

		Factor Loading	Eigen value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
	are delivered right the first time						
8	University services are provided according to the set timeframes	0.718				3.88	
9	University insist on error free records	0.642				3.78	
10	Timeframes for university's services are clearly defined	0.678				3.86	
11	University attend to the needs of the students and employees promptly	0.823				3.59	
12	University is always willing to help students and employees	0.759				3.88	
13	University is never too busy to attend to students' requests	0.470				4.19	
14	University	0.474				4.00	





Table 5: Factor Analysis for Service Quality (n=116)

		Factor Loading	Eigen value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
	employee's behavior instill confidence in students						
15	Students feel safe that they are receiving the promised service at the promised quality	0.648				3.84	
16	University employees are courteous with students	0.550				4.26	
17	University employees have the required knowledge to answer students' questions	0.669				4.31	
18	University gives individual attention to every student	0.692				3.38	
19	University operating hours are convenient to all	0.577				4.26	





Table 5: Factor Analysis for Service Quality (n=116)

		Factor Loading	Eigen value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
	students						
20	University gives students personal attention	0.753				3.59	
21	University employees have students' best interest at heart	0.828				3.81	
22	University understand the specific needs of the students	0.701				3.95	

A factor analysis was performed for the dimensions and indicators of unlimited improvement (results shown in Table 6). The KMO value found validates the factor analysis, which is a value of 0.804 and the eigen value was found greater than 1. This indicates the correlation between the different factors and the reliability of the results. All factors are above 0.4, which leads to the inclusion of all items in the analysis. Since the total variance explained is around 60%, this adds further validation to the results of the analysis (Küçük, 2016: 227-232).





Table 6: Factor Analysis for Unlimited Improvement (n=116)

		Factor Loading	Self-value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
Unlimited Improvement			4.579	57.238	0.776	4.153	0.804
1	All managers attend trainings	0.712				4.03	
2	All managers are included in improvements	0.632				4.00	
3	All organization structure is included in improvements	0.608				4.24	
4	All employees are included in improvements	0.868				4.21	
5	All tools are included in improvements	0.959				4.07	
6	All operations are included in improvements	0.869				4.07	
7	All applications are included in improvements	0.913				4.00	
8	All suppliers	0.410				4.60	





Table 6: Factor Analysis for Unlimited Improvement (n=116)

	Factor Loading	Self-value	Total Variance Explained (%)	Cronbach Alpha	Mean Score	KMO
are included in improvements						

After validating the results in the factor analysis, a regression model was applied in order to study the impact of unlimited improvement on service quality, as per the aim of the study. Table 7 narrates the most important criteria of the regression analysis model, where the R square value is 0.337 and the positive relationship is found between the two concepts with a significance level of $0.000 < 0.05$. Table 8 shows the regression analysis of Service Quality based on unlimited improvement, where the R square value is 0.337, confirming the results of the first regression model (Küçük, 2016, pp. 250). Based on these results, the research hypothesis stating “H1: Unlimited Improvement has an effect on Service Quality through the case of Baghdad University in Iraq” is accepted.





Table 7: Unlimited improvement for service quality regression model (p<0.05)

Model	R Square	F	Standardized Coefficient Beta	t	Sig.
Unlimited Improve ment	,337	28,510	,581	5,339	,000

Table 8: Service quality for unlimited improvement regression model (p<0.05)

Model	R Square	F	Standardized Coefficient Beta	t	Sig.
Service Quality	,337	28,510	,581	5,339	,000

8. Result

Through the statistical analysis performed in this research, it was found that unlimited improvement has an impact on service quality. The regression analysis yielded an R square value of 0.337 with a significance at the 0.01 level. Moreover, the indicators of both concepts were validated through a factor analysis, which showed the intercorrelation of all factors with each other within each concept. The hypothesis tested in the study was accepted based on the case of Baghdad University in Iraq.





9. Discussion

As explained in the hypothesis construction section, literature research shows the correlation and effect of service quality on performance and customer satisfaction, which are important assessment factors in business organizations (Ghimire, 2012; Akroush and Khatib, 2009; Cheng and Lin, 2014). Moreover, similar research was carried out for unlimited improvement, where the relationship between the concept and performance was confirmed (Ay and Nurov, 2017; Benshina, 2018). Therefore, the results of the research come to complete the missing gap in the research through studying and confirming the relationship and effect of unlimited improvement and service quality concepts.

10. Recommendations

This research studied two of quality assessment and implementation frameworks that were developed by scholars and practitioners to enhance quality management in business organizations. The study main aim was to study the effect of unlimited improvement on service quality. Through a questionnaire methodology with 116 participants, the impact of unlimited improvement was found positive and estimated to be 33.6% on service quality. Based on the results of the factor analysis, it can be observed that service quality and unlimited improvement average mean score were around the 4th point of the 6-point Likert scale. Such a results shows a fair implementation of the concepts at Baghdad University in Iraq. It is recommended that further assessment to be performed using other quality evaluation tools, including total quality management, in order to ensure the full implementation of quality management in the institution. Moreover, the relationship between the concepts included in this research; service quality and unlimited improvement, can be researched in correlation with other quality management concepts for validation and discussion. The level of quality implementation can be further enhanced at Baghdad university through addressing the indicators that are below the average of the 6-point Likert scale.





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