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## **The Impact of Recruitment and Selection on Job Satisfaction: Evidence from Private School in Erbil**

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**Abstract:** This paper is to examine the effect of recruitment and selection practices on job satisfaction at Ihsan Dogramci Bilkent Erbil College. A quantitative method used to analyze this study. The study was carried out at Ihsan Dogramci Bilkent Erbil College. 149 questionnaires have been gathered and analyzed. The researchers used multiple regression analysis in order to test whether research hypothesis. In terms of recruitment factor, Beta = .062 which means that recruitment has significantly predicted job satisfaction since .062 is  $<.001$  therefore, recruitment has direct positive impact on job satisfaction; accordingly first research hypothesis was supported. Concerning selection Beta = .927 which means that selection has significantly predicted job satisfaction since .927 is  $<.001$  therefore, selection has a direct positive impact on job satisfaction. Therefore, second research hypothesis was supported. Since the higher value was for selection process, therefore, the researchers came to conclude that an effective selection process which will assist a College management to increase level of job satisfaction and needs, also enhancing business' market value.

**Keywords:** Recruitment, Selection, Job satisfaction, Ihsan Dogramci Bilkent Erbil College

### **1. Introduction**

Private schools have generally had a significant role in the reproduction of the ruling classes in Erbil. However, there are some contemporary researches as to how these private schools impose recruitment and selection process. This research investigates the impact of recruitment and selection as Human resource management practices on job satisfaction at Ihsan Dogramci Bilkent Erbil College. According to the Ministry of education, IDBEC is the top private primary school in both academic years (2011-2012) and (2012-2013). Recruitment process is extremely reliant on job analysis to determine business's needs (Asiedu-Appiah, et al., 2013). On the other hand, selection is another significant human resource management practice, according to (Rowley, et al., 2004), defined a selection as a process of selecting a qualified individual who is available to fulfill the vacant position within an organization. Locke, (1976) defined the job satisfaction as a positive feeling consequence from the assessment of an individuals' job (Mohamad, 2009).

## 2. Literature Review

### 2.1 Recruitment

Recruitment starts with an established statement of organizational objectives, according to the sort of skills, capabilities, characteristics and knowledge that an organization will need (Kumari, 2012). Recruitment process consists of two types of labor market, either internal labor market or external labor market or both types of labor market within an organization (Ployhart, 2006).

Recruitment is a process that obtains and seeks possible job applicants in necessary and adequate quality and numbers to accomplish the current vacancy and to achieve organizational needs and objectives (Rasouli, et al., 2013). Recruitment policy considers an essential element to business; meanwhile, recruitment policy reflects a business' general strategy (Scholarios, 2003). Recruitment is defined as a process of attracting and seeking a pool of individuals to choose qualified candidates for available position within an organization (Vlachos, 2009). Vlachos (2009) stated that selective hiring can confirm that the right person, with the abilities, knowledge, qualifying characteristics and skills are in the right position, so that, they able to adapt with the organizational culture and environment. Furthermore, recruiting the right workers would minimize employee's turnover. Moreover, Schuster (1986) discussed that recruitment is a main practice among HRM practices that increase level of job satisfaction. There are two types of factors that effects recruitment, these factors are internal and external factors. For instance, labor market, trade union and government are considered as external factors of recruitment process. On the other hand, business' image and business policy are considered as internal recruitment factors. As mentioned earlier that recruitment approaches are numerous from both external and internal characteristics. (Begum, et al., 2014) Stated that internal recruitment characteristics, the present workers are permitted to apply for their preferred vacant available, transfer from one department to another department consider as internal recruitment. When it comes to external recruitment methods such us; employment consultants, employment agencies, advertisements, online recruitment and school recruitment, online recruitment considered a common method at the present time, and most of businesses are creating online careers in order to attract applicants. An electronic recruitment is a convenience and cost effective method for applicants.

An effective recruitment program depends on the followings (Guarino, 2006):

- Developing an attractive benefits
- Rapid responses to workers needs
- Providing an accurate information and knowledge to applicants
- Auditing recruitment process
- Providing an effective training

In order to enhance and create an effective recruitment process within an organization. Organization should use a realistic job preview. It is a process of providing understandable and

clear information and stating both negative and positive aspects regarding the vacant (Zaheer, et al., 2010).

Accordingly the researchers created first research hypothesis:

H1: There is a positive impact of recruitment on Job satisfaction.

## **2.2 Selection**

When recruitment process is successfully took place, and then the selection process will start. A selection is a process of selecting an individual from a pool of candidates. This individual is expected to be the best to fit the selection criteria for the vacant available (Omolo, et al., 2012). The most common method used in selection process is; background checks, references and interviews. Furthermore, most organization use a test after recruitment process is successfully took place. A method of selection should be related to the job itself, providing an effective utility to the selected candidate and method should be legally acceptable. An effective human resource management should be able to choose suitable employees and then put them into the right place within an organization (Raeissi, 2012). Selection is a significant component in human resource functions; the reason is that the chosen candidate will have a strong association with business development. A selection is a method of obtaining knowledge and information in order to make decision that will be in a specific position within an organization (Olusegun, 2013). There are two types of factors that affect employee selection. Internal and external factors, in terms of internal factors such as the selection source that used to recruit an employee, organization's types and size, on the other hand, external factors that affect selection method within an organization such us; labor market and legislation (Kumari, et al., 2010).

A method of interview as mentioned earlier considers a common method used in selection process. An interview could be structured, semi- structure and unstructured interview. A method of interview provides human resource manager a clear image of the applicants. Normally, in many organizations selection process starts with the accomplishment of the application form by the candidate. The second stage of the selection process within an organization is initially screening interview which only few qualified candidates will be screened. Interviews could be in various method; structured, semi structured and unstructured. The third stage of selection process within an organization is testing a candidate, for instance; skill tests, ability test, psychomotor capability, emotional intelligence, personality and integrity tests. The next step of selection process is checking recommendation letters and references that are provided by the candidate itself. The final recruitment decision is took place according to the outcome of the selection process. Furthermore, there are few sources that could be used in selection process for instance, evaluation centers and samples or work sample. Regarding of the work sample considers as a selection method that needs the applicants to illustrate and prove their effective performance. In terms of evaluation centers, it measures and asses the degree of capability in order to perform a particular task (Nyambegera, et al., 2000).

Accordingly the researchers created first research hypothesis:  
H2: There is a positive impact of selection on Job satisfaction

### 2.3 Job Satisfaction

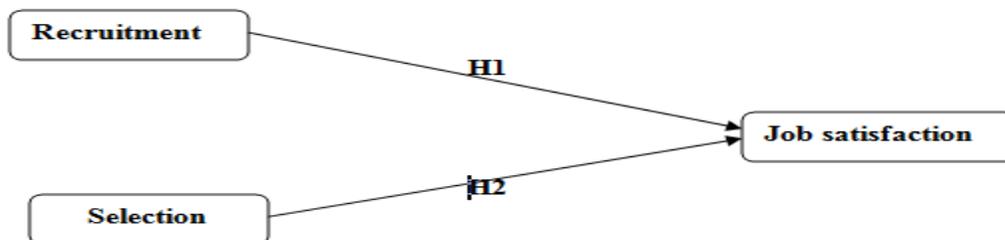
Sowmya and Panchanatham, (2011) defined job satisfaction as emotion or feeling that an employee has regarding current job. Also, they pointed out that many academic scholars tried to determine several job satisfaction components, assess relative significance for each job satisfaction components and investigate the influence of all these job satisfaction components on employee's satisfaction and productivity.

Robbins, (1999) defined job satisfaction as person's overall attitude toward job (Khare and Chaudhary, 2013). Mullins (1993) stated that inspiration is closely associated to job satisfaction (Katou and Budhwar, 2009). Many factors are related to job satisfaction for instance, social relationships, job analysis, employee training, desires and needs, recruitment and selection, orientation, working conditions, development and quality of management (Absar, et al., 2010).

### 3. Methodology

The purpose of this study is to examine the effect of recruitment and selection on Job satisfaction at Ihsan Dogramaci Bilkent Erbil College (IDBEC). A quantitative method used in order to analyse data gathered by the researchers. The researchers used questionnaire in order to be able to analyse the current study. A random sampling method used, where almost all students will have equal chances of being selected for the sample. The researchers gathered 161 questionnaires, however 12 questionnaires were invalid and 149 questionnaires were properly completed. The questionnaire structured in the form of multiple choice questions. The participants were asked to mark each item on five point scales ranging from definitely agree to do not agree at all. The questionnaire was adopted from three different sources (khan, et al., 2012), (Roberts-Lombard, 2013) and (Myloni, et al., 2004).

Research model



### 3.1 Research Hypothesis

According to the research model and literature review the researchers created the following hypothesis:

H1: There is a positive impact of recruitment on Job satisfaction.

H2: There is a positive impact of selection on Job satisfaction.

### 3.2 Data Analysis

Table-1- Demographic analysis

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	116	78
Female	33	22
<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
18-25	27	18.1
26-32	40	26.8
33-38	48	32.2
39-45	23	15.4
45 and above	11	7.4
<b>Experience</b>	<b>Frequency</b>	<b>Percent</b>
1-2	37	24.8
3-4	50	33.6
5-6	39	26.2
7-8	14	9.4
More than 8 years	9	6.0
<b>Education</b>	<b>Frequency</b>	<b>Percent</b>
Diploma	21	14.1
B.A	111	74.5
Master	17	11.4

Table (1) shows demographic analysis of participants participated in this study. In terms of participants' gender 78% were male and 22% were female. In terms of participants' age, 18.1% of participants fall into group 18-25 years old, 26.8% of participants fall into group 26-32 years old, 32.2% of participants fall into group of 33-38 years old, and 15.4% of participants fall into group of 39-45 years old and 7.4% of participants fall into group of 45 years old and above. In terms of year (s) of experiences 24.8% of participants had 1-2 years of experience(s), 33.6% of participants 3-4 years of experiences 26.2% of participants had 5-6 years of experiences, 9.4% of participants had 7-8 years of experiences and 6% of participants had 8 years and above of

experiences. And finally, concerning participants' level of education, 14.1% of participants had obtained diploma certificate, 74.5% of participants had obtained bachelor degree and 11.4% of participants had obtained Master degree.

Table-2-Reliability test

<b>Recruitment</b>	
Cronbach's Alpha	Number of items
.9933	9
<b>Selection</b>	
Cronbach's Alpha	Number of items
.9718	4
<b>Job satisfaction</b>	
Cronbach's Alpha	Number of items
.9864	6

Table (2), shows reliability analysis for Recruitment and selection as independent factor, also job satisfaction as dependent factor. According to the data analysis, the researcher found out Cronbach's Alpha for recruitment factor =.9933 for which is greater than .7 this means that items of recruitment factor were reliable for this study, Cronbach's Alpha for selection factor =.9718 for which is greater than .7 this means that items of selection factor were reliable for this study and Cronbach's Alpha for job satisfaction factor = .9864for which is greater than .7 this means that items of job satisfaction factor were reliable for this study.

Table-3-Correlations

		Recruitment	Selection
Job satisfaction	Pearson Correlation	.976(**)	.988(**)
	Sig. (2-tailed)	.000	.
	N	149	149

\*\* Correlation is significant at the 0.01 level (2-tailed).

As seen in table (3), R=.976\*\* for recruitment factor, this means that recruitment has significantly correlated with job satisfaction and R=.988\*\* for selection factor, this means that recruitment has significantly correlated with job satisfaction.

Table-4-Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988(a)	.976	.976	.14393

a Predictors: (Constant), Selection, recruitment

Table -5-ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.116	2	61.558	2971.686	.000(a)
	Residual	3.024	146	.021		
	Total	126.141	148			

a Predictors: (Constant), Selection, Recruitment

b Dependent Variable: Job satisfaction

Table -6- Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.029	.053		.553	.581
	Recruitment	.062	.079	.062	.785	.434
	Selection	.930	.079	.927	11.763	.000

a Dependent Variable: Job satisfaction

### 3.3 Discussion and Conclusions

The current research is investigating the impact of recruitment and selection on job satisfaction in Ihsan Dogramaci Bilkent Erbil College (IDBEC). In this section, the researchers discuss the main research findings. In terms of reliability tests, the researchers found that two variables of recruitment and selection factors were reliable. The researchers developed a research model consisting of two independent variables and one dependent variable. Meanwhile, the researcher set two hypotheses in order to measure job satisfaction at Ihsan Dogramaci Bilkent Erbil College (IDBEC). Cronbach's alpha used to measure the reliability of instruments in this research. Cronbach's alpha when is greater than 0.6 considers as an acceptable instrument while analyzing the research. Therefore, according to data analysis, the researchers found that the reliability test for all factors or variables were above 0.6 which means recruitment and selection

used in this research were accepted. According to research hypothesis, the study attempted to find the effect of requirement and selection on job satisfaction. Therefore, the research used multiple regression analysis in order to find out whether each hypothesis supported or not. In terms of recruitment factor, Beta=.062 as seen in table (6) which means that recruitment has significantly predicted job satisfaction since .062 is  $<.001$  therefore, recruitment has direct positive impact on job satisfaction, accordingly the first research hypothesis was supported. Concerning the selection Beta= .927 as seen in table (6) which means that selection has significantly predicted job satisfaction since .927 is  $<.001$  therefore, selection has a direct positive impact on job satisfaction. Therefore, second research hypothesis was supported. After analyzing data, the researchers found that selection factor had higher value comparing with recruitment factor. Accordingly, the researchers came to conclude that an effective selection process which will assist a College management to increase the level of job satisfaction and enhancing business' market value.

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## **An Assessment of Performance Management in Six Higher Education Institutions in Erbil - Kurdistan Region**

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**Abstract:** In this research, the aim is to identify the extent to which Performance Management is used in six (three private- three-public) universities in Erbil – Kurdistan Region. Six universities used as samples of the study. Through this research, the researcher attempted to enable Higher Education Institutions to improve and develop their Performance Management by using current trends of Performance Management approaches and methods and dispensing with old ones. Qualitative research methodology adopted for conducting this research, using structured interview data collection, non-observation participation and document analysis techniques. Twelve managers were interviewed in six higher education institutions. Findings showed that the phenomenon of performance management was not fully understood amongst most of the managers interviewed in the six universities, and there was confusion between the concepts of Performance Management and Performance Appraisal. The results showed that only one of the six universities officially practices Performance Management, and the three other universities practice Performance Appraisal only, and two of the universities do not even practice any of Performance Management policy. This research recommends the six universities to implement Performance Management to improve the performance of individuals and align individual goals and objectives with the university strategic goals and to improve the overall performance of the university to achieve its strategic goals.

**Keywords:** Higher Education Institutions, Performance Management, 360° Appraisal, Balanced Scorecard, Performance Appraisal

### **1. Introduction**

Kurdistan Regional Government (KRG), after gaining semi-autonomy and establishing regional government, KRG have achieved notable development in sectors of construction, lifestyle, technology and building infrastructure. In addition, KRG needs to further develop the fields of science, technology, and management. Investment in human capital and increasing the ability of human capital should be one of the priorities of the KRG, thus universities and institutes of higher education will play a major role in this task (MHESR, 2009). Evidently, universities are playing a dynamic role in evolving human capital in the economic and development growth of nations (Jalaliyoon & Taherdoost, 2012). Therefore, universities play a fundamental role in the future of nations and their position in the world economy through labor productivity, quality of

life and strengthening of civil society (Sherwani, 2014). Higher Education Institutions (HEI) have to adopt and introduce modern management approaches (Bendaraviciene, 2010). Consequently, for universities to increase and manage their performance, they need to implement Performance Management (PM) policy to improve the performance of individuals and the overall performance (Sherwani, 2014).

In 2009, Ministry of Higher Education and Scientific Research (MHESR) adopted a new roadmap to reform the higher education system whose mission to achieve quality in HEIs, because the old model of managing universities was not adaptable with current developments and its improvements were limited (MHESR, 2009). In the reformation packages, MHESR introduced new new methods for accountability, from these methods were (Total Quality Assurance, Student Feedback Forms for Academic Instructor, Continous Academic Development, and adjustment of university structure (MHESR, 2009). The aim of introducing such methods as Total Quality Assurance means to provide a system for evaluating performance (Khailany & Linzey, 2011). Certainly, the introduction of such methods, pressured and created demands for accountability in universtities and that influenced the behavior of the lecturers to show their best skills to enhance their performance and satisfy students.

## **2. Literature Review**

### **2.1 Higher Education Institutions in Erbil, Iraq**

Higher Education Institutions are multi-product organizations, which produce two different outputs, research and teaching by using multiple inputs (Warning, 2004). In Kurdistan Region, and most of Middle-East countries, in different situations, in 2006, MHESR was established in Erbil, and it was mirror to the system of managing HEIs in the Federal Government of Iraq but past experiences has shown that this model was bureaucratic (MHESR, 2009) and criticized by non-existence of performance monitor (Khailany & Linzey, 2011). Therefore, in 2009, Ministry recognized and analyzed the weaknesses of the old system and adapted a new system for reforming the HEIs in Kurdistan Region (Ala'Aldeen, 2009). Currently, in Erbil city there are public and private universities with plans of opening new private universities in the near future.

The reformation program signed off by MHESR in 2009, initiated considering improvements in performance to develop and provide a point of differentiation between universities. However, the universities of Kurdistan Region and Erbil city specifically are not highly recognized internationally. Nevertheless, they are developing rapidly due to the competition among these universities, which has made the issue crucial for each university to perform better to gain a higher position among other universtities. In the reformation package, Total Academic Deveopment was one of the important methods provoked universities to start documenting the activities, and motivating lecturers to begin developing their performances. Moreover, MHESR recommended the univesity staff to evaluate their performance against the Key Performance Indicators annually to attract admirable attention in their performance (Khailany & Linzey,

2011). In addition, universities in Erbil have different sources for being accountable and manage performance. First source is obliged by MHESR which is called External, and the second obligated and designed within the university Line Managers (top managers) or Human Resources Department is called Internal source. Clearly, it can be noticed MHESR underpins HEIs and recognized the significance of their outcomes on region's growth and development. However, HEIs need to introduce various performance management practices for motivation in order to cope with development and demands to be more result-oriented for overall improvement of university performance (Decramer et al, 2008).

## **2.2 Performance Management**

Performance Management (PM) has been defined differently by many authors and there is no standard definition of PM. However, it is defined as “process for establishing shared understanding about what is to be achieved and how it is to be achieved, and an approach to managing and developing people that improves individual, team and organizational performance” (Armstrong, 2009). PM is the main pillar of human resource management and the most difficult system to be implemented (Pulakos, 2009) due to its complexity in reality (Den Hartog et al, 2004; CIPD 2013; Abdulkareem & Oyeniran, 2011) therefore, in some situations it is necessary to use coercive pressures to puruse and implement the system.

PM is considered as a continous or cyclical process by many authors (Mathis & Jackson, 2003; Stewart & Brown, 2009; Verweire & Den Bergh, 2004; Briscoe, Schuler, & Claus, 2009; Smither & London, 2009), and considered as a process of alinging or integrating organizational and individual objectives to achive effectiveness (Armstrong, 2009). In the literature, there are many discussions on interchangability of names between PM and Performance Appraisal (PA), and it is a common mistake, when an organization only implements PA, and assumes that they have PM (CIPD, 2012). PA is defined as “the formal assessment and rating of individuals by their manager at, usually, an annual review meeting” (Armstrong, 2006). In fact, PA is a major part of the broader context which is performance management (Armstrong & Appelbaum, 2003; Den Hartog et al, 2004). It is critical to create a PM system, in HEIs to better understand through measures and rewarding individuals through accurate evaluation, but PM must be redefined to function effectively in HEIs (Deshmukh, 2010).

In fact, the focus of PM should be on development and motivation of academics and administratives, but the current PM practices failed to satisfy them , the reason is because there is a disconnect between rhetoric of PM and the reality it is being experienced in universities (Morris et al, 2011). However, it is still believed the concet of PM is applicable in the segment of HEIs as it is in profit-oriented enterprises but it needs to be redefined to modified to suit HEIs situation that allows institutional transformation and systematic adjustment (Serdar, 2010; Sherwani, 2014; Abdulkareem & Oyeniran, 2011). Likewise, PM aims to establish a culture in which individuals take responsibility for continous improvement of business process, own

skills, behavior and contribution (CIPD, 2013), PM is important for organization in the areas of managing strategically, administration, communication, development, organizational maintenance, and documentation (Smither & London, 2009). The system of PM is starting with planning, acting, monitoring and reviewing the performance, but characterized by a continuous cycle for continuous improvement and creating a culture of taking responsibility and coordination (Armstrong, 2009). Moreover, PM needs to be characterized by providing information on important matters that promote appropriate behavior and mechanism for accountability and control (Melo et al, 2008).

In measuring institutional and individual performance, universities may not need to measure performance only, but also to manage the performance based on the measurements to anticipate the needed changes in the strategic direction (Beardwell & Claydon, 2010). Balanced Scorecard (BSC) is one of methods of measuring performance that is progressively used in HEIs, and it is endorsed by some authors as (Wang, 2010; Jalaliyoon & Taherdoost, 2012). BSC is a tool of PM could be implemented at HEIs, and it is a strategic weapon for them and well suited to HEIs situation to improve communication and provide feedback mechanism to foster universities overall performance (Pingle & Natashaa, 2011). In order to be able to compare performances and measure the success and improvement, HEIs need to create indicators of performance to measure the outcomes by referencing to key performance indicators (KPI). In University context, performance appraisal goes through three functions which are identifying and evaluating individual performance, providing incentives, and monitoring university's progress to attain the goals (Dilts et al, 1994). The recent model of performance appraisal is 360° appraisal, it is a process that by which the performance of an individual is evaluated by all the individuals he/she is working with, includes manager, subordinates, and customers (Armstrong, 2009).

Line Manager's role is crucial in the delivery of PM and in fact, PM is what managers do, because they are there to achieve the results through people and other organizational resources (CIPD, 2009). Without line manager's support and cooperation, it is unlikely that a performance management can be implemented successfully and PM should be owned by Line Managers (Carter & McMahon, 2005). Likewise, PA is typically owned and seen as a function of Human Resources Department (Thrope & Holloway, 2008). Hoare in 1995 published a report which indicated some key principles for the best use of PM in HEIs, and they are: having a clear relationship between performance of individual and strategic direction, inform and provide feedback on the level of performance, identifying areas to be developed in the future, and collecting data to make decision (Hoare, 1995 as cited in Morris et al, 2011).

### **3. Method**

The methodology of this research is qualitative by reviewing existing literature and an empirical study by conducting three methods which are structured-interviews with non-participant

observation and document review in Erbil universities. The approach to this research is inductive and the main goal of the research is to assess the use and definition of PM by six HEIs in Erbil – Kurdistan Region. The first stage of the research started with a preliminary investigation to get better insights into the existence of PM practices currently implemented in universities and to identify whether the selected six universities in Erbil use PM Policy. After the identification, interviews conducted with the relevant managers of PM of the HEIs. The desired outcome of the research is a comprehensive understanding of the current PM practice in the six Erbil – Kurdistan Region universities. In depth-interviews chosen to understand the use, purpose, definition, approaches and perceptions of using PM by specific managers responsible for managing performance in HEIs.

Moreover, The interviews in average took almost one hour each. Likewise, English and Kurdish language are used during the interviews, the interviews are recorded and transcribed. Besides structured interviews, the interviews supplemented with non-participant observation, document review and analysis. Twelve managers interviewed, while this is limited in number. However, these participants were key players in their respective universities and they were able to provide critical insights into the study. The respondents in the interviews were from different levels of positions in the management of their HEIs and purposive sampling is used. Qualitative researches must be evaluated on its own merits in terms of validity and reliability (Rolfe, 2006). In this study, several strategies have been taken to increase the qualitative research validity and reliability. In particular, strategies to increase the trustworthiness, authenticity and rigor of the research were undertaken. These include Respondent Validation or Member Checking, Peer viewing Debriefing, Validation of the Interview, Thick Descriptions, and Audit trail. Furthermore, the whole process documented in details to increase reliability as advised by (Flick, 2009).

Ethics in this study considered and participation was the interviewee's desire to participate in the study and it depended upon the participant's willingness to share his/her experience. Participants were not obligated, forced or pressured to partake in this research. In addition, during the interviews the researcher was clear about his role and was aware of sensitive issues and potential conflicts (Orb et al, 2001; Saunders,i et al.i, 2009). To avoid unethical issues, the researcher used and applied ethical principles as informed consent, anonymity, and confidentiality.

#### **4. Findings**

In the interviews with line managers or Quality Assurance Unit Directors of six HEIs in Erbil, the findings based on the interviews indicated the following headlines. The phenomenon of PM was not fully understood among most of the managers interviewed in the six universities and there was a great confusion between PM and PA. In most of the HEIs, when they have been asked the question “whether they have PM officially in the university”, most of the managers

thought they have PM, only when they have PA. In the six universities, the managers identified the sources and obligations stimulate the university to use PM, the answers divided into two sections, there were external sources and internal sources.

The list of external sources and obligations that are applied by Quality Assurance Unit are:

- 1- Student Feedback for Academic Instructor and Academic Instructors Feedback for Head of Department: they are appraisal forms organized by MHESR during the reformation. The forms are prepared for private and public universities of Kurdistan Region to evaluate the performance of lecturers in students' perspective and to evaluate the performance of Head of Departments in the lecturers' perspective. At the end of each semester, the appraisal forms are controlled and distributed by a member of the Quality Assurance Committee in each department of the university and the results of the appraisal are returned to the line managers of the university.
- 2- Quality Assurance Assessment Procedures: as known as the "50 point of Quality Assurance". The procedure organized by the MHESR. The procedure obliges the academics in the private and public universities to collect 50 points during the academic year. The points obtained through organizing, attending or presenting in seminars or conferences, writing journal articles or any academic related activity. The aim of the procedure is to stimulate the academics to increase their performance and academic activities, and measures their performance during the year using their points as an indicator.

The appraisals and procedures recommended by MHESR to be documented and kept in the academics personal files called "Staff Portfolio" for each lecturer as evidences of academic activities. However, there are also internal sources and incentives that are applied by the universities to review, manage and to increase performance.

One of the private universities uses the following tools:

- 1- Academic Incentives for Academic Lecturers: this program financially rewards and compensates academics when they publish a book, article or journal, attend a conference, claim a patent or participate in scholarly activities. This program helps the academics to increase their academics performance and reduces the financial hinders face them while doing the academic activities by compensating the costs of the activity.
- 2- Success Course Statistics: the program is based on statistical measures of the performance of lecturers and students, by using the criteria of how many student failed or passed students are in every single course of the university. The program aims to help the line managers recognize and analyze the deficiencies and it helps the university to monitor and review the overall performance of its faculties.

Some other tools used by another private university are:

- 1- Assessment of Abroad Senior Lecturer: the assessment includes a senior lecturer from another university to assess the quality of work in the university, checks whether the department develop and work properly, and share the experiences to improve the overall performance.
- 2- Internal Group Assessors: the program includes a group of lecturers of the university leads by the Quality Assurance Unit Director. Their aim is to evaluate the performance of a specific department in the university.
- 3- Peer-to-Peer Evaluation: a specific lecturer in one department is assessing the performance of another lecturer in the same department confidentially based on an appraisal form.

Three universities out of the six universities have PA, internally to evaluate the performance of the academics and administrators, based on different PA forms. Out of the universities that currently apply PA, two of them apply PA once in the employee's career in the university, and the other, at the end of every academic year. One of these three universities has probation period besides PA. The probation period is only in the fixing period and it is only once in the employee's career in the university. The probation is three stages; an appraisal of performance after two months, six months, and one year after the employment date. Findings indicate that the use of PM was only existed in one university, three universities were only using PA, and two universities were not using any policy of PM.

The current approaches to PM by the universities were: Performance Appraisals, Probation. In the two universities that did not have PM, nor PA, the reasons for not having PM was asked, one of the managers stated that, "PM policy should be implemented in our coming early academic year, but due to the new establishments and ignorance we couldn't have such a policy". Another manager said, "We used to have a performance appraisal from top-down of the university, but after the reformation and establishment of Quality Assurance, we cancelled it, because we thought that it would be an extra practice". Among the six universities, two universities managers said they intend to use 360° appraisal in the near future.

## **5. Discussion**

From the research findings, it can be noticed that among the six universities, only one university has a fully recognized PM Policy, in percentage this is only 14%. The major problem found in the study is the confusion between PM and PA. Most of the managers thought when they have a PA that means they have PM but that is not accurate. Moreover, literature supports the idea that, PA is a major part of PM (DeNisi, 1996). The internal and external obligations in some of the universities are mainly used to appraise performance of the academics lecturers to find the poor

performers. However, there was no link between PA and rewards or effective training and development programs. Thus, that is what makes the PA become a tool for eliminating and changing, but the practice such as Peer-to-Peer, Academic Incentives for Lecturers and Course Success Statistics are good tools of PA of academics in universities to appraise the performance of academics.

Furthermore, one of the good practices of PM policy used by the university that has PM is a probation period and the continual PA. Because, when the employee is going through three different stages of probations, it helps to identify the employee's deficiencies and efficiencies, and then the probation follows continuous PA, training and development programs. In the findings, the relationship between Human Resources Department and Performance Management can be perceived. In universities that possess a well-functioning HR department, the possibility to have a PM policy or at least a PA increases. Accordingly, in the study, PA was possessed mostly by the universities that had a HR department. The approaches to PM used by the six universities were (Performance Appraisal and Probation), but there are other tools of PM and Performance Review that is not utilized by the universities. However, one of the tools of PM that is in the future plans of two of universities is 360° appraisal, because it can reduce bias of subordinates, it produces information from multi-source and that makes the information more reliable.

Moreover, none of the universities reported Balanced Score Card used currently as an approach neither to PM nor in their future plans, BSC could be implemented at HEIs as a strategic weapon and it is well suited to a HEI situation. Performance Development Plans (PDP) is another approach to PM can be used by universities to help the employees set their own development plans and it helps the managers to understand the employee's needs.

## **6. Conclusion**

The universities need to recognize and differentiate the differences between Performance Management and Performance Appraisal, and the terms should not be used interchangeably. Public and private universities need to implement PM Policy to improve the performance of individuals and align individual goals and objectives with the university strategic goals to improve the overall performance of the university to achieve its goals. PM should not be a tool to control, punish and dismiss the employees, but it should be a tool for improvement, support and a better communication between managers and employees. It should provide required training and development programs to improve the skill-set of the current and future workforce. PA in universities should appraise the performance of everyone in the university including academics and administrators, the focus should be equally on both academics and administrators but with different key performance indicators. Availability of a well-functioning Human Resource Department in a university can be very beneficial to the university to implement and

design an effective PA and review and to keep the records of the results. Universities can take advantage of the recent trends of Performance Management such as 360° Appraisal and Balanced Score Card, to manage the performance of the university more effectively.

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## Forecasting Brazil's Per Capita GDP Growth

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**Abstract:** Brazil, a country of a massive land areas and a population of 202 million, is endowed with an immense range of diversified natural resources including metallic minerals and oil reserves. For the last decade, Brazil became an attraction for international investors and foreign direct investment initiatives due to rapid industrialization and accelerated rates of growth. In 2012, Brazil's economy was classified by the International Monetary Fund (IMF) as the world's seventh largest economy, both in terms of nominal Gross Domestic Product (GDP) and Purchasing Power Parity (PPP) (IMF Annual Report, 2012). To predict Brazil's potential economic growth, this paper used a regression forecasting model to forecast Brazil's per capita GDP annual percentage growth rate as a function of fixed capital formation growth rate, growth rate of the labor force population, and inflation measured by the annual growth rate of the GDP implicit deflator. The regression model used a growth equation that was derived from a study conducted by the International Monetary Fund to measure economic growth in New Zealand. The data was taken from the World Bank's database of World's Development Indicators during the period between the years 1971-2010. The model's validity test reported that it did not violate any of the classical linear model assumptions for time series regression. Thus, the estimated coefficients are the Best Linear Unbiased Estimators (BLUE) of the population coefficient. The regression forecast of 2010 per capita GDP growth rate approximately equaled 8%. The forecast's 90% confidence interval ranged between a minimum value of 4.7683996, and a maximum value of 11.193217. Brazil's 2010 per capita GDP annual percentage growth rate was also forecasted using an Autoregressive Integrated Moving Average (ARIMA) Model. The dependent variable's time series was transformed by taking the first difference to overcome the problem of non-stationarity. The autocorrelation and the partial autocorrelation functions indicated that the ARIMA model should include one Moving Average (MA) term. The ARIMA 2010 forecast approximately equaled 6% annual growth rate. The forecast's 90% confidence interval ranged between a minimum value of -4.769585, and a maximum value of 7.851028.

**Keywords :** GDP per capita, Time-Series Analysis, Forecasting Models, ARIMA Forecasts

### 1. Introduction

Upon outperforming Russia for the first time in terms of economic competitiveness, and rivaling with other BRIC economies like India and China, Brazil was classified as the "top country in upward evolution of competitiveness" by the World Economic Forum in 2009. Brazil

competitiveness fundamentals have been significantly boosted since 1990s upon taking serious measures towards fiscal sustainability and economy's liberalization, thus providing a friendly atmosphere for private-sector entrepreneurial initiatives.

Brazil, a country of a massive land areas and a population of 202 million, is endowed with an immense range of diversified natural resources including metallic minerals and oil reserves. It became a leading exporter of automotive products and a major force in civil aircraft production industry. Brazil now operates at the cutting edge of certain technological fields like offshore oil exploration and genomic sequencing (Amann, 2005). For the last decade, Brazil became an attraction for international investors and foreign direct investment initiatives due to rapid industrialization and accelerated rates of growth. In 2012, Brazil's economy was classified by the International Monetary Fund (IMF) as the world's seventh largest economy, both in terms of nominal Gross Domestic Product (GDP) and Purchasing Power Parity (PPP) (IMF Annual Report, 2012).

This paper provides an economic forecasting for Brazil's economic growth. Brazil's per capita GDP annual percentage growth is forecasted as a function of fixed capital formation growth rate, growth rate of labor force population, and inflation rates. The regression model used in this paper is derived from a study conducted by the International Monetary Fund to measure economic growth in New Zealand. The dataset is derived from the World Bank's database of World's Development Indicators during the period between the years 1971-2010. In addition to the single regression equation forecasting method, an MA(1) model is used to conduct ARIMA forecast of per capita GDP annual percentage growth rate for the year 2010. The data were analyzed using STATA software. Both of the models forecasts succeeded the 90% confidence interval. ARIMA forecast were more accurate. But the regression forecast reported a narrower confidence interval.

## **2. Literature Review**

Throughout the economic literature, economic growth has been depicted by a regression equation where the dependent variable is growth rate of GDP per capita, and the independent variables are of a particular importance to the economy under analysis. Inflation rate has frequently been used as an independent variable in forecasting models that predict economic growth.

An IMF study conducted by Dunaway et al (2004) included inflation rate as an independent variable in the regression equation that measures economic growth in New Zealand. The study provides a comparative analysis for the sources of economic growth in some OECD countries compared to New Zealand which experienced an accelerated rate of economic growth for the last decade. Yet, these rates of economic growth were not high enough to put New Zealand per capita GDP up to the level of the top half of the Organization of Economic Cooperation and Development's (OECD) countries. Upon evaluating the importance of some macroeconomic

variables as main determinants of GDP per capita growth, Dunaway et al (2004) show that New Zealand geographical isolation is a significant variable in determining its level of economic growth. Dunaway *et el* used a reduced form of growth equation to evaluate the contribution of some macroeconomic policy measures, institutional structural reforms, and the geographical isolation to economic growth. Despite the extensive structural reforms undertaken in New Zealand since the mid-1980s, per capita GDP could not rival with the rest of OECD countries. Thus, New Zealand geographical location turned to be a significant obstacle to economic growth. Besides, the study shows that at low levels of inflation, a small increase in inflation rate has positively impacted growth rates. However, once a certain threshold level of inflation is crossed over, then this effect starts to be negative.

In my study, I will follow the same approach of Dunaway *et el* by estimating a reduced form of growth equation for Brazil's economy represented by the annual percentage growth rate of Brazil's per capita GDP. As described by Edmund Amann, Brazil is "one of the great enigmas of the global economy" (Amann, 2005). In his paper, *Brazil's Economy under Lula*, he addressed the paradox of the Brazilian economy who continued to push below its weight despite the economy's huge endowments of natural resources, human capital and high level of technical expertise, and large entrepreneurial initiatives. He argued that Brazil will have to take a series of reforms to overcome the structural impediments hindering sustainable and equitable growth. He attributed the failure in achieving the ultimate economic potentials to the government's commitment to pursue fiscal and monetary orthodoxy. The former government of President Lula Da Silva has identified the policy measures necessary to face up these challenges; however, it has severely limited the scope for putting these policies into practice. While many studies analyzed the forecasts of two or more macroeconomic variable individually, for instance real GDP growth and inflation rate separately, Sinclair *et al* provided a method for jointly assessing the direction of the change in the projections of these variables (Sinclair, Stekler, & Kitzinger, 2006). Their study attempts to forecast the direction of change in the projected behavior of two correlated variables. Sinclair *et al* developed a methodology to jointly evaluate the accuracy of the forecasts of a single variable to include simultaneously an analysis to the forecasts of other relevant variables. They conclude that such methods provide more accurate forecasts for decision makers than the ones undertaken separately.

### **2.1 Determinants of Economic Growth – Regression Model**

The model employed in this paper is derived from the IMF analysis conducted by Dunaway *et al* of the sources of economic growth in New Zealand (Dunaway, Kronenberg, Ramakrishnan, Salgado, Sanhadji, & Zhang, 2004). A reduced form growth equation which is typically derived from an aggregate production function as follows:

$$Y_t = A_t F(K_t, L_t) \quad (1)$$

Where  $Y_t$  is GDP per capita measured by purchasing power parity (PPP),  $A_t$  represents factor productivity,  $K_t$  represents capital stock, and  $L_t$  represents employment, all in year  $t$ .

Differentiating equation (1) with respect to time  $t$  results in an equation (2) that represents GDP per capita growth on a PPP basis as a function of growth rate of factor productivity, growth rate of capital stock, and growth of employment rate:

$$Y_t = a_t + f(k_t, l_t) \quad (2)$$

In an attempt to forecast Brazil's economic growth, a single regression equation forecasting method is constructed upon the above mentioned equation where the dependent variable, Brazil per capita GDP percentage growth, is regressed on Brazil's fixed capital formation growth rate, growth rate of labor force population, and inflation rates. One of the limitations of this study is that the model developed does not account for the variable that represents the growth of productivity due to the difficulty in approximating this factor.

## 2.2 Data Source & Description

The dataset used in this paper was taken from the World Bank's database of World's Development Indicators during the period between the years 1971-2010. The variables included in this model are described as follows:

### 2.2.1 GDP per Capita Growth (annual %):

GDP per capita growth (annual %) measures the annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. It is used as the dependent variable in the regression model to forecast GDP economic growth. Per capita GDP annual percentage growth rate fluctuated between a minimum value of -6.600777 and a maximum value of 11.31396 during the period between the years 1971-2010 with an average value of 2.258955.

### 2.2.2 Gross Fixed Capital Formation Growth (% of GDP):

Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. It is used as an independent variable in the regression model to capture the growth rate of fixed capital stock as a percentage of GDP. This variable is expected to positively affect per capita GDP annual growth. Fixed capital purchases, whether by the public or private sector, is expected to boost the

economy, to create job opportunities, to boost consumption, and to positively affect the standards of living. The percentage of gross fixed capital formation to GDP fluctuated between the minimum value of -16.09837 and the maximum value of 22.98004 during the period between the years 1971-2010 with an average value of 4.091361.

### **2.2.3 Population, Total:**

Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The values shown are midyear estimates.

### **2.2.4 Population, Age 15-64 (% of total):**

The population between the ages of 15 and 64 as a percentage of the total population. Both of the above mentioned variables were used to create the variable employed in the regression model as an independent variable to capture the growth in the labor force. This variable attempts to approximate the growth in total employment due to the fact that there is no access for data on employment rates and labor force participation in Brazil in the period between the years 1971-2010. The following equations was used to calculate the variable:

Total Population 15-64 = Total Population\* Population 15-64 Percentage of Total Population

Percentage Growth Rate of Population between 15-64 =

$$\frac{(Tot\ Pop\ 15 - 64)_t - (Tot\ Pop\ 15 - 64)_{t-1}}{(Tot\ Pop\ 15 - 64)_{t-1}}$$

Though total population growth is expected to negatively affect per capita GDP growth, the growth in labor force population, represented by growth in population between the ages of 15 and 64 as a percentage of the total population, is expected to have a positive effect on per capita GDP especially when it is accompanied by growth in fixed capital formation and job opportunities. The percentage growth rate of the population between the ages of 15 and 64 fluctuated between the minimum value of .0129066 and the maximum value of .0318539 during the period between the years 1971-2010 with an average value of .023307.

### **2.2.5 Inflation, GDP Deflator (annual %):**

Inflation measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.

The economic theory implies that the increased rates of inflation may negatively affect economic growth. Thus high rates of inflation are expected to negatively affect the growth of GDP per capita. Recent research that examined relationship between inflation and economic

growth indicated that at low levels of inflation, a modest increase in inflation may positively impact growth. However, inflation starts to hurt growth once a certain threshold level of inflation has been crossed. Inflation measured by the annual growth rate of the GDP implicit deflator fluctuated between the minimum value of 4.235904 and the maximum value of 2735.488 during the periods between the years 1971-2010 with an average value of 307.0091. This variable recorded its highest values during the period between the years 1980-1995 with high degree of variation. Then it recorded decreases in later years.

Table 1 shows the summary statistics of each above mentioned variables.

Table 1 Summary Statistics

The variables are measured in percentages.

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP_Per_Capita_Gr	40	2.258955	4.002771	-6.600777	11.31396
Gross_Fixed_K	40	4.091361	9.514693	-16.09837	22.98004
LFPopGr	39	.023307	.0058416	.0129066	.0318539
Inf_GDP_Def	40	307.0091	668.3922	4.235904	2735.488

Estimates – Regression Results

Table 2 summarizes the regression results:

Table 2 Regression Results

Dependent Variable GDP_Per_Capita_Gr		
Independent Variables	Estimated Coefficient	Standard Error
Gross_Fixed_K	0.3612893	0.0291172
LFPopGr	95.87149	46.92367
Inf_GDP_Def	(0.0008883)	0.0004079
Constant	(-1.233255)	1.138595
Number of Observations	39	
<b>R<sup>2</sup></b>	0.8288	
Adjusted <b>R<sup>2</sup></b>	0.8141	
RMSE	1.6893	

### **2.2.6 Interpretation of the Estimated Coefficients:**

**Gross\_Fixed\_K:** This variable represents growth of fixed capital stock as a percentage of GDP. The variable's estimated coefficient has a positive sign. Everything else equal, a one percent increase in gross fixed capital growth as a percentage of GDP contemporaneously increases the annual percentage growth rate of GDP per capita by 0.36. The coefficient's sign is consistent with the economic theory. The coefficient's t-statistic is larger than the critical values at both 5% and 10% significance levels and 35 degrees of freedom. So the null hypothesis that estimate is statistically insignificant is rejected.

**LFPopGr:** This variable represents the percentage growth rate of the population between 15-64 years old. The variable's coefficient has a positive sign. Everything else equal, a one percent increase in the labor force population growth contemporaneously increases the annual percentage growth rate of GDP per capita by 96.87. The coefficient's sign is consistent with the economic theory. The coefficient's t-statistic is larger than the critical values at 10% significance level and 35 degrees of freedom, and slightly higher than the critical value at 5% significance level. So the null hypothesis that estimate is statistically insignificant is rejected at 10% significance level. However, the coefficient is barely significant at 5% significance level.

**Inf\_GDP\_Def:** This variable represents inflation measured by the annual growth rate of the GDP implicit deflator. The variable's coefficient has a negative sign. Everything else equal, a one percent increase in inflation rate measured by annual growth rate of GDP implicit deflator contemporaneously decreases the annual percentage growth rate of GDP per capita by 0.000888. The coefficient's sign is consistent with the economic theory. The coefficient's t-statistic is larger (in its absolute value) than the critical values at both 5% and 10% significance levels and 35 degrees of freedom. So the null hypothesis that estimate is statistically insignificant is rejected.

### **2.2.7 The Model's Goodness of Fit Characteristics:**

The model reported high values of R-squared and adjusted R-squared measures of goodness of fit. The model's R-squared reports that 82.88 % of the variation in the dependent variable is explained by the variation in the independent variables. The model's adjusted R-squared reports that 81.41% of the variation in the dependent variable is explained by the variation in the independent variables upon adjusting for the degrees of freedom.

The Root Mean Squared Error (RMSE) value is 1.6893, reflects the variation in the dependent variable which is not explained by the independent variables. Upon comparing the value of RMSE to the mean value of the dependent variable, the annual percentage growth rate of GDP per capita that equals 2.2589, the value of RMSE is not sufficiently low, the thing that may cast some doubts on the model's goodness of fit characteristics.

**2.2.8 Testing the Model’s Validity:**

The following tests were conducted to examine the model’s validity. The model was examined for the existence of a multi-collinearity problem, a serial correlation problem, and a heteroskedasticity problem. Besides, a test to examine whether the model is misspecified or any significant variable is omitted was also conducted. The tests reported that none of the above mentioned problems was traced in the model. The regression model does not violate any of the classical linear model assumptions for time series regression (Wooldridge, 2009). Thus, the model’s estimated coefficients are the Best Linear Unbiased Estimators (BLUE) for the population’s coefficients.

**2.2.9 Testing for Multi-collinearity:**

Upon applying the Variance Inflation Factor (VIF) test (Wooldridge, 2009), each of the coefficient’s VIF and the Mean VIF, which is 1.01, are lower than 10. Besides, as the model’s estimated coefficients are all statistically significant and their signs are consistent with the economic theory, there are no symptoms of a multi-collinearity problem in the regression model (as shown below).

Variable	VIF	1/VIF
Inf_GDP_Def	1.01	0.989400
Gross_Fixe~K	1.01	0.989793
LFPopGr	1.00	0.999504
Mean VIF	1.01	

**2.2.10 Testing for Serial Correlation:**

Upon applying both the Durbin’s Alternative and the Breusch-Godfrey tests for serial correlation (Wooldridge, 2009), both tests reported remarkably high p-values of 0.3587, and 0.3316 respectively. Thus, the null hypothesis of no serial correlation is not rejected. The regression model does not suffer from any autocorrelation problem.

Durbin's alternative test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	0.842	1	0.3587

H0: no serial correlation

Breusch-Godfrey LM test for autocorrelation

---

lags(p)	chi2	df	Prob > chi2
1	0.943	1	0.3316

---

H0: no serial correlation

### 2.2.11 Testing for Heteroskedasticity:

Upon applying Breusch-Pagan test for Heteroskedasticity (Wooldridge, 2009), the test reported a remarkably high p-value of 0.3653. Thus, the null hypothesis of homoscedasticity is not rejected and the regression model does not suffer from heteroskedasticity problem.

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of GDP\_Per\_Capita\_Gr

chi2(1) = 0.82

Prob > chi2 = 0.3653

### 2.2.12 Misspecification Test:

By applying the Ramsey's Regression Specification Error (RESET) test for model misspecification (Wooldridge, 2009), the test reported a high p-value of 0.4083. Thus, the null hypothesis that the model has no omitted variable is not rejected.

Ramsey RESET test using powers of the fitted values of GDP\_Per\_Capita\_Gr

Ho: model has no omitted variables

F(3, 32) = 0.99

Prob > F = 0.4083

### 2.2.13 Regression Forecast and Confidence Interval:

In order to forecast per capita GDP annual percentage growth rate for the year 2010, the regression model was rerun after excluding the year 2010 and resulted the following regression equation (3):

$$\text{GDP\_Per\_Capi\_Gr} = -0.9643674 + 0.3682839 \text{ Gross\_Fixed\_K} + 84.88602 \text{ LFPopGr} - 0.0009008 \text{ Inf\_GDP\_Def} + e_t \quad (3)$$

The forecast of per capita GDP annual percentage growth rate for the year 2010 equals 7.9808084, that approximately equals 8% annual growth rate. It is calculated via inserting the values of the independent variables for the year 2010 in equation (3).

$$\text{GDP\_Per\_Capi\_Gr} = -0.9643674 + (0.3682839 * 21.3340731364) + (84.88602 * 0.01290663) - (0.0009008 * 8.2285350577) + e_t$$

**2.2.14 Confidence Interval Calculations:**

The following equation (4) is used to calculate the confidence interval at  $\alpha$  significance level (Wooldridge, 2009):

$$y_{t-1} \pm t_\alpha * s_f \quad (4)$$

Where:

- $y_{t-1}$  : Is the point forecast.
- $t_\alpha$  : The critical  $t$  value at  $\alpha$  significance level.
- $s_f$  : The forecast's standard error.

The 90% confidence interval where  $t = 1.690$  at 35 degrees of freedom is:

$$7.9808084 \pm (1.690 * 1.9008336) \longrightarrow [4.7683996, 11.193217]$$

The regression model's forecast succeed the 90% confidence interval as actual value of GDP per capita annual growth rate in the year 2010 is 6.59596271689. The actual value falls within the confidence interval's range.

**2.2.15 Autoregressive Integrated Moving Average (ARIMA) Model:**

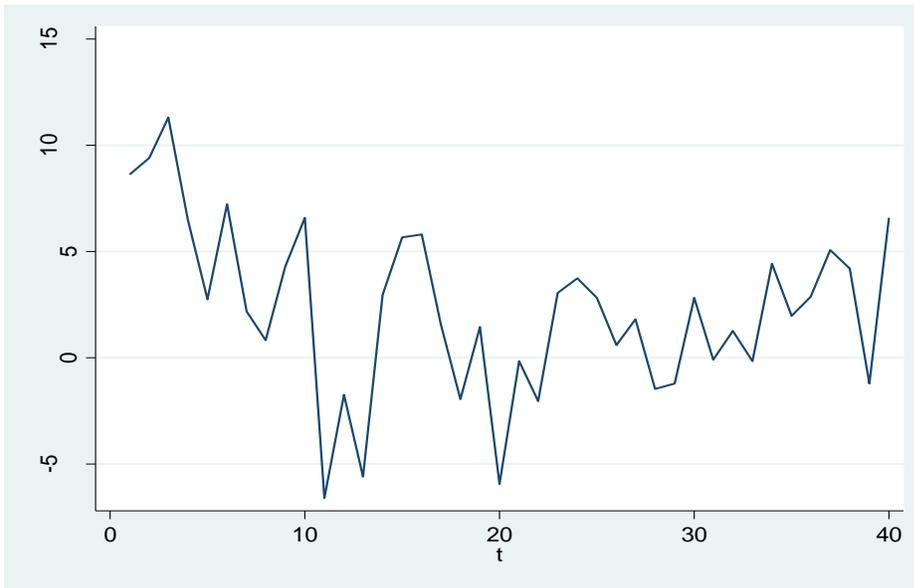
The other method used to forecast 2010 per capita GDP annual growth rate is an Autoregressive Integrated Moving Average (ARIMA) Model (Wooldridge, 2009). In order to decide the optimal number of Autoregressive (AR) and/or moving average (MA) terms used in the model, the time series dataset was first tested for stationarity. To examine whether the dataset is stationary or not, the time series was represented by a graph to capture the pattern that the dependent variable follows over time. Besides, a Dickey-Fuller test for unit root was also conducted (Wooldridge, 2009). As the time series was found to be a highly persistent one, it is transformed by taking the first difference to overcome the problem of non-stationarity. The transformed time series dataset was also tested for stationarity, and the transformed form of the time series turned to be weakly dependent. Then both the autocorrelation and the partial

autocorrelation correlograms of the transformed form was examined to decide on an MA(1) ARIMA model.

**2.2.16 Testing the Time Series for Stationarity:**

Figure 1 represents the pattern that the dependent variable, GDP per capita annual growth rate, takes over time. The figure shows that the time series neither has a constant mean nor a constant variance with time progress. Thus, the time series turned to be a highly persistent one.

Figure 1 – GDP Per Capita Annual Percentage Growth:



However, the Dickey-Fuller test for unit root that tests the null hypothesis of non-stationarity reported a p-value of 0.0007 and a test statistic of -4.169 which is statistically different that zero and less than the critical value of -2.961. Thus the null hypothesis that the data is highly persistent is rejected. The Dickey-Fuller test showed that the time series data is weakly dependent. This result contradicts the information extracted from the above Figure 1.

```
. dfuller GDP_Per_Capita_Gr, lags(0)
```

Dickey-Fuller test for unit root                      Number of obs =    39

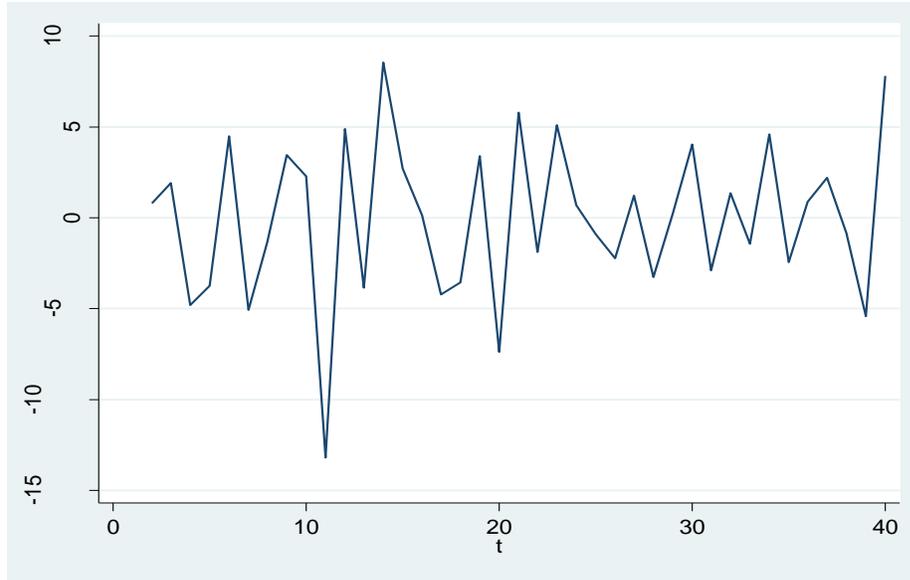
----- Interpolated Dickey-Fuller -----

Test	1% Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t)	-4.169	-3.655	-2.613

MacKinnon approximate p-value for Z(t) = 0.0007

The time series was transformed by taking the first difference to overcome the problem of non-stationarity. The transformed form of the time series is presented in Figure 2 which shows the pattern that the transformed form of the time series follows over time. The figure shows some outliers, but a better behavior of the economic variable towards a constant mean and a constant variance.

Figure 2 – Transformed Time Series – First Difference – GDP Per Capita Annual Percentage Growth



The Dickey-Fuller test for unit root that tests the null hypothesis of non-stationarity reported a p-value of 0.0000 and a test statistic of -9.307 which is statistically different that zero and is less than the critical value of -2.964. Thus the null hypothesis that the data is highly persistent is rejected. Thus, the transformed form of the time series data is weakly dependent.

. dfuller d.GDP\_Per\_Capita\_Gr, lags(0)

Dickey-Fuller test for unit root                      Number of obs =    38

----- Interpolated Dickey-Fuller -----				
Test	1% Critical	5% Critical	10% Critical	
Statistic	Value	Value	Value	
Z(t)	-9.307	-3.662	-2.964	-2.614

MacKinnon approximate p-value for Z(t) = 0.0000

**2.2.17 Autocorrelation and Partial Autocorrelation Functions:**

Both the autocorrelation and the partial autocorrelation functions of the transformed form of the time series were examined to decide the number of autoregressive and/or moving average terms that need to be included in the ARIMA model.

Table 3 shows a rapidly declining the autocorrelation histogram where the autocorrelation coefficient declines to zero at the second lag. It also shows a rapidly declining partial autocorrelation histogram where the partial autocorrelation coefficient also declines to zero at the second lag.

A one high autocorrelation coefficient followed by an autocorrelation coefficient near zero indicates that the ARIMA model should include a moving average term, meanwhile no autoregressive term should be included (Oppenheim, 1978).

Table 3 Autocorrelation & Partial Autocorrelation Functions

```
. corrgram d.GDP_Per_Capita_Gr
          -1   0   1 -1   0   1
LAG   AC   PAC   Q  Prob>Q [Autocorrelation] [Partial Autocor]
-----
```

LAG	AC	PAC	Q	Prob>Q	[Autocorrelation]	[Partial Autocor]
1	-0.4183	-0.4584	7.3641	0.0067	---	---
2	0.0760	-0.1247	7.6138	0.0222		
3	-0.1390	-0.1939	8.472	0.0372	-	-
4	0.0588	-0.1120	8.6302	0.0710		
5	-0.2033	-0.3349	10.574	0.0605	-	--
6	0.1227	-0.1884	11.303	0.0794		-
7	0.1472	0.1271	12.386	0.0886	-	-
8	-0.1474	-0.1456	13.507	0.0955	-	-
9	0.2102	0.1452	15.861	0.0698	-	-
10	-0.1991	-0.0025	18.046	0.0542	-	
11	0.1492	0.0467	19.317	0.0556	-	
12	-0.2103	-0.1200	21.936	0.0382	-	
13	0.2066	0.1726	24.56	0.0264	-	-
14	-0.1699	0.1307	26.407	0.0230	-	-
15	0.1500	0.3584	27.905	0.0222	-	--
16	-0.0889	0.0788	28.455	0.0279		
17	0.0167	0.1998	28.475	0.0397		-



### 2.2.19 Confidence Interval Calculations:

Equation (4) is also used to calculate the confidence interval at  $\alpha$  significance level (Wooldridge, 2009):

The 90% confidence interval where  $t = 1.690$  at 37 degrees of freedom is:

$$6.3103065 \pm (1.690 * 3.7339092) \longrightarrow [-4.769585, 7.851028]$$

The ARIMA model's forecast succeed the 90% confidence interval as actual value of GDP per capita annual growth rate in the year 2010 is 6.59596271689. The actual value falls within the confidence interval's range.

### 3. Conclusion

Brazil's per capita GDP annual percentage growth rate was forecasted using both a single regression equation forecasting model and ARIMA forecasting model. The ARIMA model predicted more accurate forecast in the sense that it is closer to the actual value of GDP per capita growth rate recorded on 2010. But the ARIMA 90% confidence interval has a remarkably wide range. Meanwhile, the regression forecasting model over-predicted the value to a little extent, but reported a narrower 90% confidence interval.

The regression model reported few shortcomings. The model is derived from the growth equation employed in the literature, so should include a variable that approximate the growth in economic productivity. Though the Ramsey mis-specification test reported that the regression model has no omitted variable, the model lacks the productivity growth variable. Besides, the labor force growth was calculated via using population growth variables due to the fact that there is no access for labor force participation growth rates for the period between the years 1971-2010. Another limitation is that the model reported high values of both R-squared and adjusted R-squared. However, the RMSE value was not sufficiently low when compared to the mean value of the dependent variable, the thing that casts some doubts on the model's goodness of fit characteristics.

As for the ARIMA model, the dependent variable's time series data was found weakly dependent using the Dickey-Fuller test. However, depicting the dependent variable's pattern over time via a graph showed that the time series needs to be transformed by taking the first difference in order to construct a proper ARIMA forecasting model.

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## **Implementation of Enterprise Resource Planning (ERP) Software in Medium and Large Companies: Case Study of a Private Company in Erbil**

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**Abstract:** The aim of writing this paper is to analyze how ERP system directly and effectively implemented into organization. The researchers discussed the way how ERP software implemented to the medium and large sized organizations. ERP software puts together and integrates various parts of organization to take high quality, efficiency and performance. High level of using data and information with computer based system is one of the keys to success for any organization. Another point of view in this research is that researchers focused the high risk of this software implementation to the medium organization. The ERP implementation process is a difficult and complex system because it directly affects the framework of organization. During this research, researchers interviewed with Chairman of Malatya Pazari Merchandise Company in Erbil and got his opinion and ideas about the requirements of ERP system to Malatya Pazari Merchandise Company. Qualitative study was conducted by the researchers by using personal interview technique. This research may help individuals, vendors and organizations which they want to use ERP software in their organizations. ERP software implementation leads to better strategic planning. ERP system ensures certain methodology and systematic way for organization.

**Keywords:** Enterprise Resource Planning (ERP) Software, Implementation, Systems, Erbil

### **1. Introduction**

In the globalized business environment, organizations need to improve, develop and become competitive in different markets. Organizations should research and find out better solutions to carry on their businesses since 1960s as many computers based business solutions were being used. Computerization brought significant benefits to the organization to achieve in their goals.

Organizations must adapt changes to survive by taking radical steps and decisions. Organizations under the name of institutionalization have to generate new ideas and perform long term strategic plan for the future, and using limited resources more efficiently and effectively. Today's competitive environment, firms aim to become preferred company to its clients where firms have led to development, but it depends on many factors such as quality, price, delivery time, customer relationships. ERP system provides superiority to companies in

term of these factors. ERP systems are more powerful, intellectual and complex software system where they play an important role in organization as well as organizations' life cycle. ERP provides effectiveness to organization. They combine and pick up each departments functionality and activities like production, service, communication, sales, logistic, IT etc. ERP systems lead the best way that can help companies to become more competitive, improved and sophisticated.

ERP is the package which includes different kinds of modules for each profit and nonprofit organization such as hospitals, restaurants, hotels and other institutions. The purpose of ERP and their modules provide many alternatives and choices for customers to efficiently and effectively use their resource to achieve goals, influentially challenge and compete with other competitive firms. Many small, medium and multinational corporations use ERP software to collect more information and use their knowledge more efficiently and actively. Corporations become more valuable in front of vendors and customers by using ERP software system.

Our aim in this study is to show how ERP system affects organizations' performance. In this research we analyzed and evaluated the structure of organization before and after ERP implementation period, advantages and disadvantages that ERP brings to organization. The last part of the study is the case study for Malatya Pazari Company. The case study is covered how ERP system implement to the organization in the beginning of period till the final stage of the implementation process.

## **2. Literature Review**

Advantages of ERP system made SMEs to adopt and provide better services to existing customers as well as future customers. According to Ngai, et al., 2008, Rabah, 2012, Business Process Reengineering, cooperation and the perception of top management, entanglement of users, knowledge and training of employees, efficacious project management and cooperation from the vendors play key role in implementing ERP systems. Cloud computing in integration of ERP is difficult to SMEs as this involves huge cost. Usage of clouds for activities in computation can be a revolution in Information Technology which happened after invention of e-Commerce and Web as per McKinsey.

ERP implementation avoids difficulty in coordinating with other departments within the organization as it integrates all departments without having separate software for their requirements which results in splitting of information and impossible to get correct information in a timely manner. ERP integrates all departments in an organization with centralized database which gives access to the users as per the request and authority on information. The market of ERP would the biggest, rapid growing, prominent in industry of applications as per one of the famous market analyst firm AMR.

As per Raymond et al., (2001), technology adoption is challenging to SMEs. ERP implementation Cost is more to SMEs than big organizations and they cannot afford rigorous training. The difference between big companies and SMEs should be defined transparently to get positive results of ERP systems according Huin, S. F. (2004). It is the responsibility of vendors to create customized products and organizations are also able to identify their need which can solve confusion between them. According to (Saumyendu Ghosh, 2002), the advantages of implementing ERP are different from one function to other.

The study conducted by Upadhyay and Dan identifies the factors of implementing ERP successfully are clear goals and objectives of implementation, sufficient training to users, efficient team of project implementation, accepting the change, sufficient support from vendors and involvement of outside consultants. According to Gable et al, 1998, less expensive hardware like cables, switches and servers, database in software have decreased. According this, SMEs may benefit with this trend due to heavy competition among vendors of ERP and their insight to cater the needs of SMEs.

### **3. Research Methodology**

In this work, researchers used qualitative research method. The goal of this research is to demonstrate financial position of a company (Malatya Pazari) before and after ERP implementation process. The qualitative research determines to the explanation part and study. In the explanation part, we studied on ERP implementation process and steps. In the second part of research, we focused on Malatya Pazari Company's position while implementing ERP system and integration of existing system with ERP software.

### **4. ERP Implementation Process**

The implementation process is started after installation of ERP system. The implementation process comprise from the beginning of choosing proper hardware, planning, integrating, training until the system is in use. The implementation of ERP is the most difficult and complicated portion for organization. ERP implementation takes time to install and apply to the project (Chau, Davison, Scarbrough and Wong 2005). Many projects during the implementation of ERP package has collapsed because of lack of basic strategic planning, inadequate expression from vendors to customers, selecting wrong ERP package and system software. The slump rates of ERP change from 35% to 65% percent. (Parthasarthy 2007,35). In addition ERP implementation can be very difficult, complexity, costly and time consuming for special large corporation, if they cannot take professional support from ERP suppliers or technicians. For organizations purchasing ERP system is not meaning key to success or perceived. A good implementation plan is the key to success for organization.

ERP implementation steps include:

1. Examine and analyze all organization skeleton and system. Make sure the system skeleton has been successfully completed and ensure all conditions to implementation success are in place.
2. Chose and install proper hardware for system. Before trying to setup software, its necessary to confident that the safety and reliability of the hardware.
3. Technical support service must install software and make sure that the software run and installed correctly, then tested a few times.
4. Technical support team must teach and train users about the software and transactions needed to run the system.
5. Identify and create safety, orders and significant permission to the users, and make sure that the system efficiently and effectively used by users.
6. Make sure that all data and information are powerfully and righteously used.

## **5. Advantages of ERP Implementation**

The benefits of the ERP software system have been abutment according to the area of finance, accounting and management information. ERP software provides integration between each department in any organization, ERP increase coordination between various departments. An ERP system improves fertility, efficiency and productivity of accounting, financial, managerial and statistical reports in corporation. It provides easy and new technique for creating reports with better righteous data. ERP systems help institution to get rid of manual accounting systems because manual accounting system reduces time efficiency and make more mistakes. Computer based system (ERP) reduce cost and make organization more attractive for customers. ERP systems help us to use data and information more efficiently and effectively because customers usually want to know what and when they have stocked products and how long it will take to arrive. ERP software is important for organization in their daily business activities. “Operational benefits are gained by automating business processes and enabling process changes, they can offer benefits in term of cost reduction, cycle term reduction, productivity improvement, quality improvement and improvement customer service (Kurtulus, 2007).

In figure 1 it shows that, how ERP system effect on companies performance before, during and after implementation process. In the figure 1 the performance of companies are going to reduce during the implementation process because the structure of company all changed, before ERP the structure of company was centralized. Also the adaptation procedure creates problem for employees of organization. After implementation & during training process the performance of organization rapidly become more efficient than before ERP implementation because decision makers make better controlling, planning and forecasting. After implementation process all information on database is become accurate and reliable.

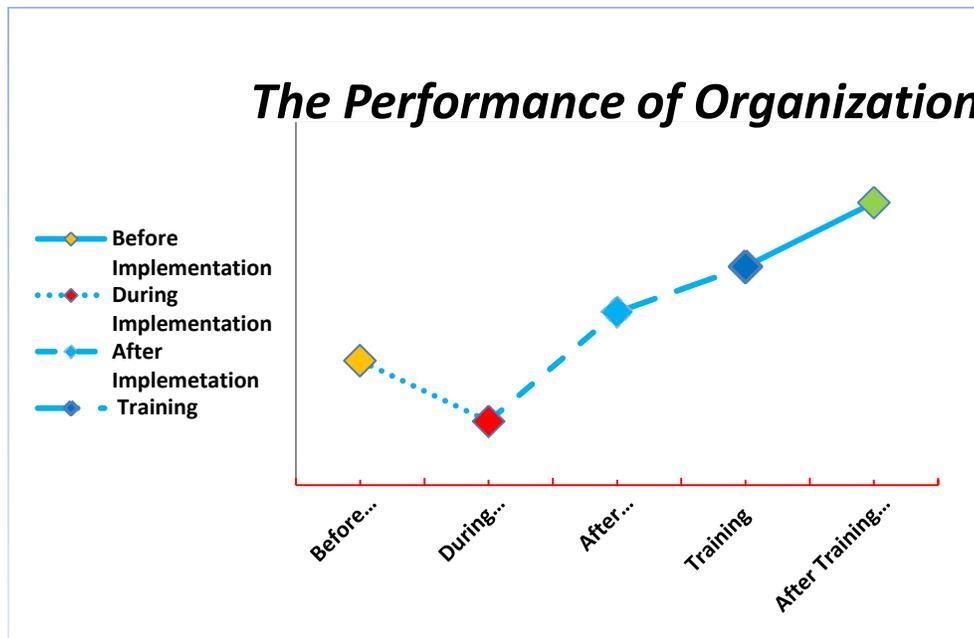


Figure 1: The Performance of an organization before and after ERP implementation. Parthasarathy, S. 2007, p.42

## 6. Disadvantages of ERP implementation

Although ERP system offers many significant advantages, there are a number of disadvantages as well. One of the main disadvantages of ERP is the cost. Therefore only large and multinational corporations can take benefits of this technology. Many small and medium sized companies they cannot benefit from this technology. Many large companies challenge other companies when they implement ERP system correctly. Another disadvantage of ERP is that after establishing software the employee of organization inefficient and ineffectively use this technology because companies have trying to save money by reducing the cost of training. The success of this technology depends on how the employees adapt and realize it. The implementation of ERP software to the organization may take several month and required huge amount of money for implementation. Apart from those disadvantages another main problem is that many large and small companies they cannot successfully implement ERP system because of its so complexities and expensive. Because ERP implementation process covers large outgoing for the getting of the software, implementation, training, maintaining and consulting costs (Davenport, 2000; Mckie, 1998). Another point is that during the adaptation process the structure of organization moves to the new system environment, workers of organization need to change working style according to the new system; apart from this it affects employee relationship and sharing information among departments and taking extra responsibilities (Appleton, 1999).

## **7. ERP Implementation at (MALATYA PAZARI) Company and Interview with Chairman:**

(Malatya Pazari) is a merchandise and distribution company established in Erbil (2012). Approximately it has 30 employees. The company staffs scope the chairman, financial manager, production managers, book keeper and business managers. They do not have enough knowledge about ERP software. The relationship between the company's staff has built on trust and faith and fully authorized by chairman. The company accepted standard module which generally suitable for small and medium sized companies used such as stock, sales, financial and accounting statement and production.

### **1. What type of ERP modules was chosen?**

As we are a merchandise company, the ERP package contains all modules for merchandise business. Inventory management, purchase, sales and distribution, finance and general ledger modules are being used effectively at the moment. As most of our customers are not using computers, we are not using the order module in sales and distribution module although we have implemented.

### **2. How long does it take to implement the ERP to entity?**

Actually, the implementation of ERP is directly related with the volume of the entity, and business field. Because before the implementation there are some steps of determination like the structure of the organization, usage levels and areas of Information Technologies which is being used and which will be used after implementation will be important and these steps will make the implementation period take a bit much. Generally for a medium size company, implementation process takes between 3 – 6 weeks to finish completely.

### **3. How long does it take your employee in adapting to this system?**

After implementation process, the training period begins. Sometimes during the implementation period, help is taken from the accounting department of entity to train them and reduce the implementation period. Time period of adaptation of employee is related to how they were close to the former/traditional system. It may take much time to force people to leave habits and start working with new procedures after using traditional system for several years. Small and medium size companies' employees take around 8 weeks for adaptation of new process.

### **4. How did ERP system affect your organization structure?**

Organization structure must be separated into before ERP and after ERP period. Because with trial of implementation of ERP, Accounting Information System was also developed, and today for most of the organizations which are using ERP and information technologies, accounting department is working like data process department of entity. With the implementation of ERP,

structure of organization will change completely. Before implementation of ERP, structure was centralized and information technologies were being used less but after implementation structure became decentralized and information technologies became more used.

**5. What are your weaknesses with previous system?**

Previous system was based on trust. It was all manual and we did not have much chance than trusting the employees. Because any transaction forgotten to be recorded on system was impossible for us to be determined, because the system was not double entry system, and such mistakes were impossible to determine. But ERP brought the double entry system to entity and any mistake at recording of transactions could be found, determined easily because of this entry system.

**6. What are your strengths with new system?**

We make better controlling, planning and forecasting. Today, after ERP implementation, we are closing daily transactions every day. And because of that all information on database is accurate and reliable. This is giving us more chance at effective controlling. And when we are sure about the results of controlled amounts, planning and forecasting became easier for us. This is the strengths of the new system.

**7. What were the benefits of ERP system that bring to your organization?**

First of all, the ERP brought automation, an updated organization structure with decentralization, access to the information / data is more easy and accurate. Preparation of financial statements and reports takes much less time than manual accounting.

**8. Did the ERP system satisfy your organization requirements?**

Because of some technical difficulties in Erbil, still we cannot use 100% of ERP structure. But if we compare before and after, of course ERP is satisfying us.

**9. What kind of disadvantages and risk that ERP system brings to your organization?**

ERP means keeping all information and data in digital world. Today if you don't invest in digital world, it means your data and information is not secure. ERP brought additional investment costs to information technologies at our entity although we are a small sized company. Risk is; as we are small sized company, we have a limited budget and we cannot afford the amount required by the ERP consultant to keep our data all secure and this is making our data a bit insecure. I can say that that is the only disadvantage of ERP implementation for our entity at the moment. But it is not much important when we compare with the advantage of the ERP and we have some precautions for these issues like backup of database for every 10 minutes

**10. What kinds of problems were faced before the implementation of ERP software to your organization?**

Before ERP implementation, it was taking much time for us to prepare the financial reports. As this entity is Partnership Company, we had to prepare some financial reports to discuss about the financial status of the company for decision making. And we were not sure about how the information of reports was accurate and reliable. But after implementation of ERP it is taking less time to prepare the financial reports and we know that the information of the reports are accurate and reliable, because during the accounting period all information which is being recorded on database is being check at least twice by different departments, employees of the entity.

**11. What kinds of problems were faced during the implementation ERP software to your organization?**

We decided to implement the ERP after starting our business. Actually this was a mistake, because till the implementation period around 2 fiscal years were passed and accounting department of entity was out of control for the amounts of accounts. Before implementation, one by one, we had to control the ending balances of accounts on chart of accounts to be sure that they were accurate and reliable, than for beginning balances of inventory cost was restructured and all these were done while the entity was continuing its business transactions. This was the most important problem for us during the implementation of ERP.

**12. What kinds of problems were faced after the implementation ERP software to your organization?**

Traditions, actually this is the highest handicap in business life. Even you believe that the system you finished to implement is the most effective for your business, your employees will not think like that and it will take much time for them to leave their traditions. And this period decreases the effectiveness of the ERP and new implemented system. Our aim was previously to reduce this time period.

**13. Did you believe that training program provided adequate information to your employee during ERP implementation?**

Yes, after the training program all employees started to work on ERP without any problem freely.

**14. How would describe your company's financial position before and after ERP implementation?**

Financial position before and after ERP is directly related with data processing. Before the ERP implementation, all records were kept manually and there was no integration between the departments of the entity, and that was causing duplicate entries, and loss of control at financial

structure of the entity. But after implementation of ERP, accessing the information came easier and the information/data became more accurate and reliable. This made the financial status of entity more accurate now. We know the information about the inventory, cost of inventory, cost of the goods sold and balances of accounts, amounts of receivables and payables are reliable, and reliability of these amounts are what an investors want to have.

**15. What are the differences between current position and new position of your company?**

We can focus on the financial status of entity more after implementation of ERP than before. With this implementation, we have more information on inventory control, receivables control and cost of inventory. All these controls give us to have more chance on the competitive business field, and this took us to upside from our current financial position.

**16. Why do you want to use ERP software?**

Generally ERP is being used at most of the entities in Turkey, and when we transferred our business to Kurdistan, we decided to continue with traditional system, but after the growth of business and other conditions of Kurdistan, forced us to implement ERP as soon as possible. And of course as I mentioned above we know that after ERP implementation, we are going to have more control on the process of information and data, and this will affect decision making and forecasting positively. These issues forced us to use ERP.

**8. Discussion and Conclusions**

In Iraq many individuals and entities are usually unconscious about ERP because of ERP projects are long term projects, the installation and implementation ERP software package take long time to get efficiency, also another reason is that the lack of communication and trust between customers and vendors and the cost of the ERP project.

In this Research, we discussed and demonstrated how ERP software integrated and implemented to the Malatya Pazari merchandise and distribution company. We can say that Malatya Pazari is medium sized merchandise company, so the duration of the installation and implementation of ERP software for medium sized companies a bit complex (Yin, 1994). We analyzed the previous condition of Malatya Pazari before and after installation and implementation of ERP system. Technical service team focused on the main problems which occurred in the previous system, and they identified and analyzed the company's financial condition, and they determined ERP modules which needed for Malatya Pazari. After analysis and selection of ERP package, we discussed about the significant implementation steps during ERP installation part. Finally we interviewed with chairman of Malatya Pazari, and he shared his ideas, requirements, and opinions about the company and employee condition before and after ERP implementation process.

According to chairman of the company, Company decided to install and implement ERP software to the system, during the implementation process, it came across significant problems such as lack of company's substructure, inadequate and ineffective company's hardware system, lack of knowledge about accurate and reliability of company's previous information, data and reports, incorrectly recorded balance sheet and chart of account in previous system. Before the new system, all records were kept manually and there was no integration between the departments of the company. After ERP implementation, some problems occurred such as the company employees did not adapt and adopt the new system quickly and take time during employee training, the deficiency of willingness and effectiveness of employee at the beginning of implementing new system.

After the hard and long implementation process, the company and their personnel adapt the new process and they take benefits of the ERP system, such as the new system gave them high quality of financial reports and effectively and efficiently use company's scarce resources. ERP system made company more attractive to customers and became more competitive against competitors.

In the last stage of implementation process, ERP system modified the company structure. Decision makers did not take financial reports righteously and on time with previous system, but after implementing the new system, the company's financial and managerial reports became more reliable and effective, established new roadmap for company and cost of production was reduced. The main point of the new system was reduction of frauds in the company. Finally in this study, we demonstrated how ERP software implemented and impact to the Malatya Pazari manufacturing and distribution company. In briefly we mentioned the financial and managerial framework before and after implementation ERP system to the Malatya Pazari.

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## **Impact of Porter's Generic Competitive Strategies on the Competitive Advantage in Investment**

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**Abstract:** The ever shifting competitive business environment stance main challenges to investment companies and particularly banking sectors like any other business in Kurdistan region of Iraq and business managers have been struggling to compete positively. Porter proved that greater competitive advantage can be attained by implementing a competitive generic Strategy. This study is to find out the impact of Porter's generic strategies on competitive advantage in investment industries and particularly in banking sectors. Also to find out which strategy is better than other to win competitive advantage in investment industries? A Qualitative method used in this study to analyze data. A random sampling method used to gather data from private banks in Erbil city. The population of this study was approximately 210 units and the sample size of this study was 128 units. The researcher developed three research hypothesis, according to multiple regression analysis the researcher found out the cost leadership has significantly predicted competitive advantage (Beta is weight 0.708,  $p < .001$ ) this indicates that cost leadership strategy will have a direct positive impact on competitive advantage based on this results the first hypotheses was supported. In terms of second research hypothesis, differentiation strategy has significantly predicted competitive advantage (Beta is weight 0.180,  $p < .001$ ) this indicates that differentiation strategy will have a weak positive impact on competitive advantage based on this results the second hypotheses was supported, and in terms of third research hypothesis, focus strategy has significantly predicted competitive advantage (Beta is weight 0.102,  $p < .001$ ) this indicates that focus strategy will have a weak positive impact on competitive advantage based on this results the third hypotheses was supported.

**Keywords:** Porter's Generic Strategy, Cost Leadership, Differentiation, Focus, Investment, Banking Sector

### **1. Introduction**

Recently the demand of investment industries increased considerably. In the predictable future it is expected that investment industries will continue to be the main country's economy source. This study focuses on banking investment in Kurdistan region of Iraq. Banking industries are

one of the most prominent and fast growing industries in Kurdistan Region of Iraq. Recently, Iraq's Kurdistan has been one of the hottest spots for the global investments.

The size of the banking market is in constantly growth and every day is being more and more attractive for investment (Ruiz-Vanoye, et al. 2012). This is considered to be one of the strongest contributions to the economy of countries and more and more banks are in the region for investment. Many of banks are in take off stage, and the region itself is in developing stage and stepping newly into the global world standards (Torgovicky, et al. 2005).

Currently, banks are in need of a clear direction and clear strategy. The banks are striving to meet the deadlines set by the local authorities of the region and start serving customers as soon as possible (Saadeghvaziri, et al. 2012). Competition between banks has grown and entering new potential banks is competitive. Therefore, strategies have become a very essential management at the current competitive environment (Sohail and Al-Ghamdi 2012). A strategic management shows the main direction to the business and includes organizational goals, developing plans and policy in order to attain these goals and resource allocation in order to implement a set of plans (Bordean, et al. 2010).

This study uses the strategies, which enable banks to win a competitive advantage in the market place by concentrating on Porters' generic strategy model which compromises, cost leadership strategy, focus strategy and differentiation strategy.

## **2. Research Objectives**

The main research objective was to find out the impact of Porter's generic strategies on competitive advantage in investment industries and particularly in banking sectors. To attain this research objective, the study particularly required to find out the impact of three generic strategies on competitive, firstly the impact of cost leadership strategy on competitive advantage, secondly the impact of differentiation strategy on competitive strategy and finally focus strategy on competitive advantage. Also to find out which strategy is better than other to win competitive advantage in investment industries?

## **3. Literature Review**

### **3.1 Generic strategy**

According to Porter (1991), strategy could be defined as creating a great protection against the five competitive forces (Furrer, et al. 2008). To allow a business to deal successfully with the porter's five competitive forces and therefore create a sustainable competitive advantage, the business is need to develop an insecure position in Oil and Gas industries through competitive strategy (Baroto, et al. 2012).

Although a firm can have numerous strengths and weaknesses vis-à-vis its competitors, the firm can have only one of two basic types of competitive advantage: low cost or differentiation (Bülbul 2011). As Porter (1996) stated that strategy is the establishing a valuable and unique position including many activities (Chen, et al. 2011). A business requires making a decision, to be either differentiator or a cost leader; it is not possible to do both at the time. The two kinds of competitive advantage integrated with the scope of competitive activities which the business attempts to obtain them lead to three generic strategies outperforming rivals (Brafu-Insaidoo and Ahiakpor 2011).

1. Cost leadership
2. Differentiation
3. Focus

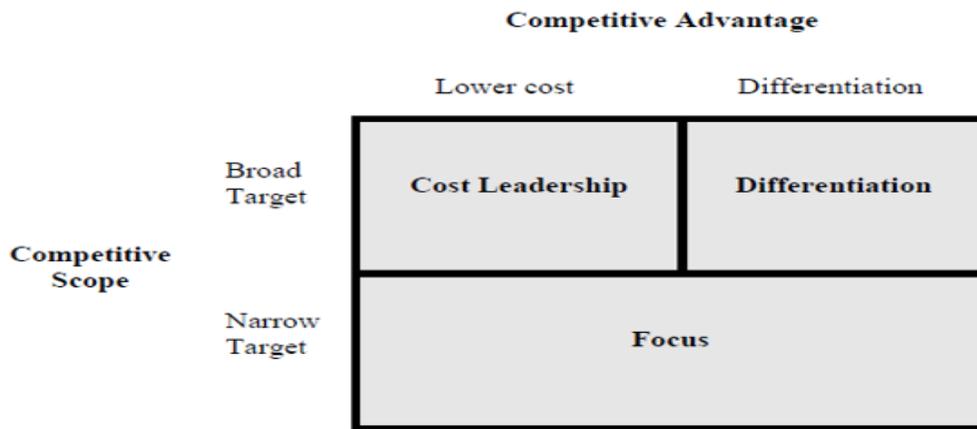


Figure 1-Generic competitive strategy, Porter (1980)

As seen in figure (1) the generic competitive strategies. Three kinds of strategies are considered as generic, the reason is because all three strategies apply into different types of businesses (Salimian, et al. 2012). Every business should apply only one of those generic strategies, in case if a business fails with all three strategies this means that the business has no advantages. Each of the generic strategies involves a different route to competitive advantage (Bolo 2011). Cost leadership strategy connects the business to be the lowest cost seller or producer within the industry with the same potential profit (Chen and Chang 2011). Differentiation strategy makes the business to produce or sell unique products or services. Focus strategy that makes the business to efficiently serve a specific customer or market segment (Mahdi, et al. 2011).

**Cost Leadership Strategy:** This strategy concentrates on low cost in terms of businesses' activities and could functionalized as low pricing, low input, experience, the design of the products, economies of scale and the design of the process (Kuzmanovic, et al. 2011). Concerning low pricing is the process of creating similar product in terms of features to

competitors but in lower price. While low input including having inexpensive labour and location is closer to the raw materials and storage. In terms of experience, more experience will have positive impact on effectiveness and efficiency. Economies of scale needs larger scale operations and the design of the process/ the design of the product effect effectively through creating goods from lower price (Hajipour, et al. 2011).

**Differentiation strategy:** This sort of strategy concentrates on product or service uniqueness, which provides consumer with valuable product (García-Pérez-de-Lema, et al. 2012.). The differentiation can be done by special features, brand name/image, technology, supplier or distributors, marketing message or advertising (He, et al. 2012).

**Focus strategy:** This strategy concentrates on specific target or market segment. In case of that differentiation strategy failed or cost leadership strategy failed also, then organization can adapt focus strategy (Pirvu,et al. 2012). Also this strategy can be implementing for time limitation product or services (Huang, et al. 2011).

### 3.2 Conceptual Review

Figure (2) shows the conceptual framework of this study. The researcher identified two variables in below research model, competitive advantage as dependent variable on the other hand, generic strategies ( focus, differentiation and cost leadership) as independent variables. The framework is according to the research hypothesis that adoption of Porter's generic strategies in order to gain competitive advantage in the marketplace.

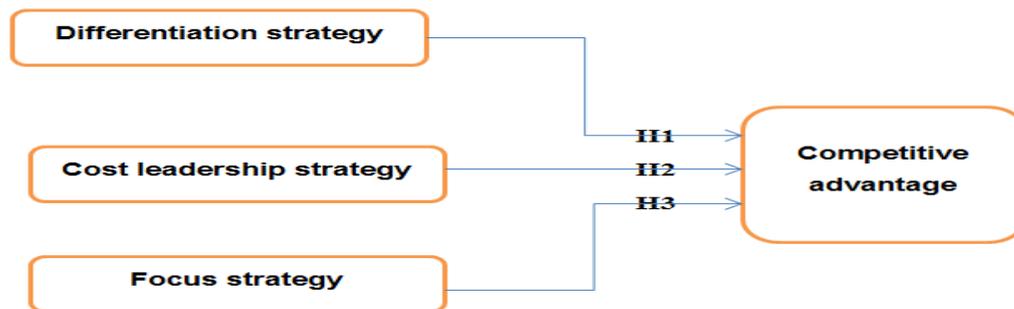


Figure (2), research model, created by the researcher

Research hypothesis:

H1: There is a positive impact of differentiation strategy on competitive advantage

H2: There is a positive impact of cost leadership strategy on competitive advantage

H3: There is a positive impact of focus strategy on competitive advantage

## 4. Methodology

This section introduces the design of the study, sampling size, target population and instruments.

### 4.1 Design of the study

Qualitative method used in this study to analyze data. The researcher used a questionnaire and distributed in four banks in Erbil city. The questionnaire consisted of two sections; first section was demographic questions (participants' background information). The demographic questions consisted of participant's age, gender, level of education and year(s) of experience. The second section of the questionnaire was questions regarding of Porter's three generic strategies (Cost leadership strategy, differentiation strategy and focus strategy). In terms of differentiation strategy, the researcher asked 6 questions, focus strategy 13 questions, cost leadership 8 questions and competitive advantage 6 questions.

### 4.2 Sampling size and target population

The researcher used random sampling method in order to gather data from private banks in Erbil city. The population of this study was approximately 210 units. The target population was 142 units. The researcher distributed 150 questionnaires at four different private banks, from 150 questionnaires; the researcher was able to gather 128 questionnaires that have been completed properly. Accordingly, the sample size of this study was 128 units.

### 4.3 Instruments

The questionnaire was designed in a multiple choice questions. The respondents were asked to mark each question on five scales ranging from strongly disagree to strongly agree. The questionnaire was adapted from two different sources (He, et al. 2012) and (Kinyuira 2014).

### 4.4 Data analysis

Table (1) Demographic analysis

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	84	65.6
Female	44	34.4
<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
20-29	42	32.8
30-39	51	39.8
40-49	22	17.2
50-59	12	9.4
60 and above	1	.8
<b>Education</b>	<b>Frequency</b>	<b>Percent</b>
Bachelor	121	94.5

master	5	3.9
PhD	2	1.6
<b>Experience(s)</b>	<b>Frequency</b>	<b>Percent</b>
Less than a year	1	.8
1-2	23	18
3-4	24	18.8
5-6	33	25.8
7-8	18	14.1
9-10	17	13.3
11 and over	12	9.4

Table (1) explain demographic analysis for respondents participated in this study. As seen in the above table 84 male participants participated in this study and 44 participants participated in this study. 42 respondents fall into a group of 20-29 years old, 51 respondents fall into a group of 30-39 years old, 22 respondents fall into a group of 40-49 years old, 12 respondents fall into a group of 50-59 years old and only one participant fall into group of 60 years old and above. 121 participants had bachelor degree, 5 participants had Masters degree and 2 participants had PhD degree. Only one participant had less than one year experience, 23 participants had 1-2 years of experiences, 24 participants had 3-4 years of experiences, 33 participants had 5-6 years of experiences, 18 participants had 7-8 years of experiences, 17 participants had 9-10 years of experiences and 12 participants had 11 years of experiences and over.

Table 2 Reliability test

<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>Number of items</b>
<b>Differentiation</b>	.776	6
<b>Focus</b>	.960	13
<b>Cost leadership</b>	.975	8
<b>Competitive advantage</b>	.823	6

Table (2), shows reliability analysis for three independent variables and competitive advantage as dependent variable, According to the reliability analysis, the researcher found out Cronbach's Alpha for differentiation factor =.776 for which is greater than .7 this means that items of differentiation factor were reliable for this study, Cronbach's Alpha for focus factor = .960 for which is greater than .7 this means that items of focus factor were reliable for this study, Cronbach's Alpha for cost leadership factor = .975 for which is greater than .7 this means that items of cost leadership factor were reliable for this study and Cronbach's Alpha for competitive

advantage factor = .823 for which is greater than .7 this means that items of competitive advantage factor were reliable for this study.

Table (3) Correlation analysis

Correlations				
		Costleadersip	Differentiation	Focus
Costleadersip	Pearson Correlation	1	.564**	.470**
	Sig. (2-tailed)		.000	.000
	N	128	128	128
Differentiation	Pearson Correlation	.564**	1	.544**
	Sig. (2-tailed)	.000		.000
	N	128	128	128
Focus	Pearson Correlation	.470**	.544**	1
	Sig. (2-tailed)	.000	.000	
	N	128	128	128
Competitive advantage	Pearson Correlation	.627**	.865**	.572**
	Sig. (2-tailed)	.000	.000	.000
	N	128	128	128

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Correlations analysis presents the values of the identified correlation tests; Table (3) shows the correlations between the scales using person correlation. Correlation analysis is determined the strength of relationship between variables. The researcher correlated Cost leadership strategy, differentiation strategy and focus strategy as independent variables with competitive advantage as dependent variable. According to correlation test, the researcher found out that cost leadership strategy has significant correlation ( $r=.627^{**}$ ,  $p<0.01$ ) with competitive advantage. Concerning the strength of the linear relationship is moderately strong between cost leadership strategy and competitive advantage, also differentiation strategy has significant correlation ( $r=.865^{**}$ ,  $p<0.01$ ) with competitive advantage. Concerning the strength of the linear relationship is moderately strong between focus strategy and competitive advantage, and focus strategy has significant correlation ( $r=.572^{**}$ ,  $p<0.01$ ) with competitive advantage.

Regression analysis

Table (4) Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886 <sup>a</sup>	.784	.779	.360
a. Predictors: (Constant), Focus, Costleadersip, Differentiation				

Regression analysis is analyzing relationships among factors.  $Y=f(x_1, x_2...X_c)$ . Regression analysis is to estimate the how Y will influence and change X and predict. In this research cost leadership strategy, differentiation strategy and focus strategy as independent variables and competitive advantage is dependent. The competitive advantage's overall difference could be measured by its variance. The differences are measured as the sum of the square between participant's forecasted competitive advantage values and the total mean divided by the number of participants. After division it will clarify variance by the total variance of competitive advantage, the researcher found out the amount or the number of total difference or variance that is accounted based on regression calculation. The number should vary between 0 -1 and is symbolized by R Square. Table (4) shows the value of R square = .784 this indicates that 78% of total variance has been explained.

Table (5) ANOVA

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.488	3	19.496	150.351	.000 <sup>b</sup>
	Residual	16.079	124	.130		
	Total	74.568	127			
a. Dependent Variable: competitiveadvantage						
b. Predictors: (Constant), Focus, Costleadersip, Differentiation						

Table (6) Coefficients

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.537	.179		2.999	.003
	Cost leadership	.682	.053	.708	12.959	.000
	Differntiation	.150	.043	.180	3.465	.001
	Focus	.072	.036	.102	1.997	.048
a. Dependent Variable: competitiveadvantage						

Table (6) explains the result of research hypotheses, in terms of first research hypothesis, cost leadership has significantly predicted competitive advantage (Beta is weight 0.708,  $p < .001$ ) this indicates that cost leadership strategy will have a direct positive impact on competitive advantage based on this results the first hypotheses was supported. In terms of second research hypothesis, differentiation strategy has significantly predicted competitive advantage (Beta is weight 0.180,  $p < .001$ ) this indicates that differnation strategy will have a weak positive impact on competitive advantage based on this results the second hypotheses was supported, and in terms of third research hypothesis, focus strategy has significantly predicted competitive advantage (Beta is weight 0.102,  $p < .001$ ) this indicates that focus strategy will have a weak positive impact on competitive advantage based on this results the third hypotheses was supported.

## 5. Conclusion

Generally most organizations have different strategies to to gain and win competitive advantage. Micheal ported developed generic strategies such us cost leadership, differentiation and focus strategy in order to enable organization to gain competitive advantage. However, previous researches have explained that there is an association between porter's generis strategies and competitive advantage. The current research evidence demonstrated the positive association between porter's generic stratgegies (cost leadership, differentiation and focus) with firm's competitive advantage. The finding of this research was based on three different strategies and its relation with competitive advantage, the first factor is cost leadership, the correlation of cost leadership strategy as independent variable with competitive as dependent variable. According to correlation test, the researcher found out that cost leadership strategy has significant correlation ( $r = .627^{**}$ ,  $p < 0.01$ ) with competitive advantage. Concerning the strength of the linear relationship is moderately strong between cost leadership strategy and competitive advantage. The result of first research hypothesis, cost leadership has significantly predicted competitive advantage (Beta is weight 0.708,  $p < .001$ ) this indicates that cost leadership strategy

will have a direct positive impact on competitive advantage based on this results the first hypotheses was supported. In terms of differentiation strategy, the researcher found out that differentiation strategy has significant correlation ( $r=.516^{**}$ ,  $p<0.01$ ) with competitive advantage. Concerning the strength of the linear relationship is moderately strong between differentiation strategy and competitive advantage. The result of second hypotheses, differentiation strategy has significantly predicted competitive advantage (Beta is weight 0.180,  $p<.001$ ) this indicates that differentiation strategy will have a weak positive impact on competitive advantage based on this results the second hypotheses was supported. In terms of focus strategy the researcher found out that focus strategy has significantly predicted competitive advantage (Beta is weight 0.102,  $p<.001$ ) this indicates that focus strategy will have a weak positive impact on competitive advantage based on this results the third hypotheses was supported. According to the multiple regression analysis, the researcher found out that the highest value was for cost leadership strategy, accordingly it concluded that a successful investment company should adapt cost leadership strategy in order to be able to gain competitive advantage in the marketplace.

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## **The Impact of Quality Management Dimensions on Healthcare System: A Study of Private Hospitals in Kurdistan Region of Iraq**

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**Abstract:** At the present time, there are many arguments in terms of the quality of health care and its eight dimensions of quality management. Hospitals are organizations operating in the health business and in which all types of illnesses, injuries and any other health problems are treated in order to improve the people health and that's at differentiated cost patterns. The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals' effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. The outcome of this study will serve private hospitals in Erbil with further quality improvement of its services. A quantitative method used to analyze this study. 234 participants from six private hospitals were involved in this study. A multiple regression analysis used to analyse the current study, however, the findings revealed that the highest value was for system approach to management; therefore hospitals' management should be able to manager, recognize and identify a system of interconnected and organized process as a system participates to the hospitals efficiency and effectiveness in attaining its hospitals' goals.

**Keywords:** Quality Management Dimensions, Effectiveness, Private Hospitals

### **1. Introduction**

It is no longer possible to avoid the matter of quality in health care. Hospitals struggle to provide all patients with timely, safe, efficient and effective. Recently, there are many arguments regarding the quality of health care and its principles of quality management practices. In these arguments of quality in health care focused on the relationship between hospitals' effectiveness and principles of quality management. Hospitals are organizations operating in the health business and in which all types of illnesses, injuries and any other health problems are treated in order to improve the people health and that's at differentiated cost patterns. This study investigates the impact of quality management principles on hospitals' effectiveness. Although concepts of quality management principles are truly already decades old, restrictions to recognizing the effect of principles of quality management are still evident in improving organizational effectiveness. Despite quality management had important attention for the last decades and its advantages and positive influence on organizational effectiveness however, numerous questions have remained unanswered. This study participates through

understanding of the very significant theoretical question: “do dimensions of quality management have positive impact on organizational effectiveness? The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals’ effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. The outcome of this study will serve private hospitals in Erbil with further quality improvement of its services.

## **2. Literature Review**

### **2.1 Quality Management**

Quality management defined according to (Lakhe,R.R. and Mohanty,P.R, 1994) as the implementation of quality management system in order to obtain the supreme satisfaction of its customers with the ability of obtaining the lowest cost to the entire business whereas continuing in improving the process.

Quality management system defined according to (Miller,et al., 2009) as a process of formulizing system which enable management to assign procedures, duties and structure to attain effective quality management (Beshah and Kitaw, 2014). On the other hand, total quality management is a management method which concentrates on long term achievement through increasing the level of customer satisfaction (Becket and Brookes, 2008). In the total quality management method all employees are contributing in enhancing services, products, organizational culture and process within work place (Yaacob, 2010).

### **2.2 Quality Management in Health Care**

Quality is defined by (Ikorok,et al.) As "a matter of decisions with respect to specific properties dimensions or ingredients, characteristics, of a practice called health service. Quality is defined by (Donabedian, 2005) as a consideration of objectives and values of a health system, in terms of patients’ expectation. Quality considers as the degree to which health services for humans and populations increase the possibility of effective health consequences and are reliable with present specialized knowledge. According to (Moonsamy,V. and Singh,S., 2012) defined quality management in the health care system as all actions taken to enhance, promote, protect and establish the quality of health care. Management of health care generally combines medical objectives of patients with the real potentials regarding of resources time and assess the definite practice (Tsai, et al., 2012). Moreover, According to (Chang, 2011), the concept of quality management might lead to create a misperception among health care staff, the hospital management is often linked with the administration of the hospital, and the administration of the hospital is most likely linked by medical doctors with constrains on their specialized practices.

### 2.3 Quality Management Dimensions

According to (Garvin, 1987), there eight quality dimensions as follow:

1. **Customer focused organization:** hospitals relied on their patients; hence management should be able to recognize their existing and future patients' needs. Moreover, hospitals' management should be able to meet its patients' expectation and requirement.
2. **Leadership:** managers in hospitals should have leadership behaviour; therefore they should be able to set unity of directions and purpose. Leaders should be able to maintain and develop the internal business environment in which individuals could be able to become engaged in attaining organizational goals.
3. **Involvement:** individuals within the entire organization are essence of the business and their engagement motivates and enables their skills and capabilities to be used for hospitals' benefit.
4. **Process approach:** a preferred outcome is attained more efficiently when individuals' capabilities, activities and skills are managed as a business process.
5. **System approach to management:** managing, recognizing, and identifying a system of interconnected and organized process as a system participates to the hospitals' efficiency and effectiveness in attaining its goals.
6. **Continual improvement:** Continual improvement is a process hospitals' performance.
7. **Factual approach to decision making:** Operative decisions are according to the diagnosing the information and data obtained.
8. **Mutually beneficial supplier relationships:** suppliers' of hospitals are dependent and commonly shared benefits association improves the capability of both to develop a value.

### 2.4 Conceptual Framework

The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals' effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. The researcher used eight dimensions of quality management as independent factor and effectiveness as dependent factor as shown in figure (1):

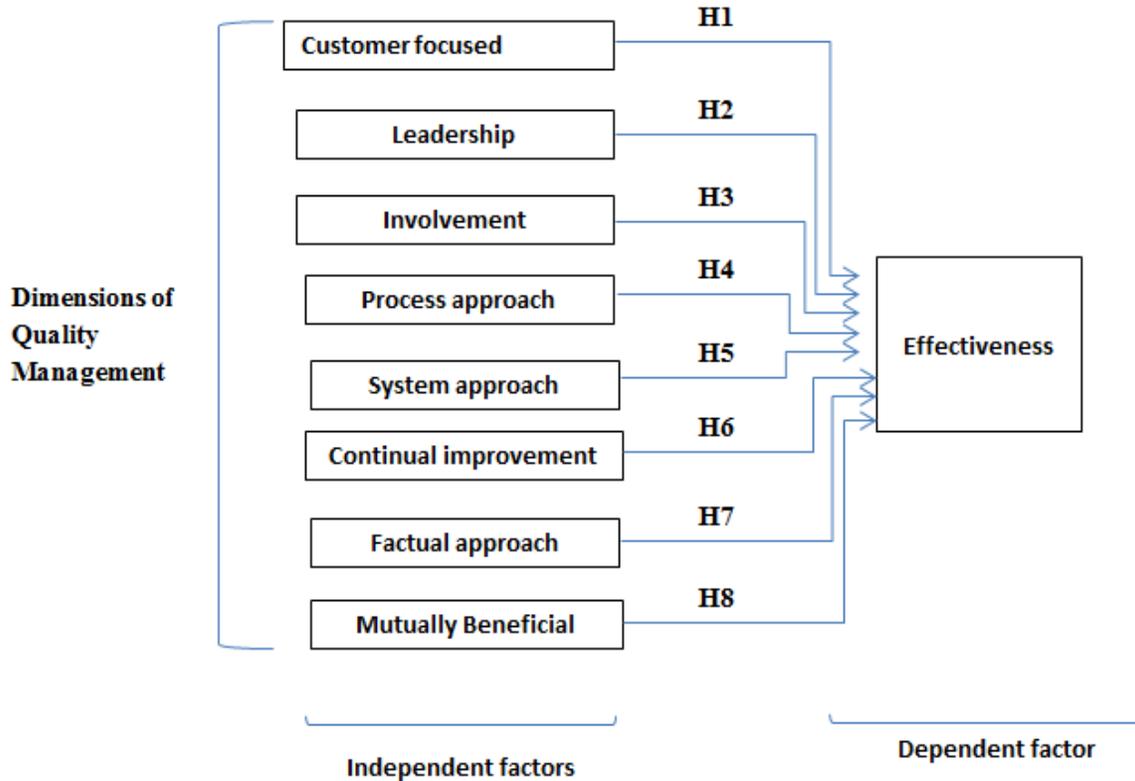


Figure (1), Research model

### 3. Methodology

The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals' effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. The purposes of methodology are to explain research methodology, clarify the procedures that used in this research, define the measurements used in planning the instrument, explain data collection, and to provide a clear clarification of the statistical method used in order to analyse data. A quantitative method used in order to analyse data gathered by the researcher. This section is divided into four sections, the first section consists of research design, the second sections consists of the duration of the study, the third section consists of the sample size and population and the fourth section consists of instruments for measuring items.

#### 3.1 Design of the Study

The researcher used questionnaire in order to be able to analyse the current study. The questionnaire was divided into two sections, the first section consisted of demographic questions; starting with respondent's age, gender, level of education, years of experience and

status. The second part of questionnaire consisted of eight independent factors and one dependent factor. In terms of independent factors; first independent factor was customer focused organization which consisted of five questions; second independent factor was leadership which consisted of five questions, third independent factor was involvement which consisted of five questions, fourth independent factor was process approach which consisted of five questions, fifth independent factor was system approach to management which consisted of five questions, sixth independent factor was continual improvement which consisted of five questions, seventh independent factor was factual approach to decision making which consisted of five questions, and last independent factor was mutually beneficial supplier relationships which consisted of six questions.

### **3.2 Duration of the Study**

The researcher distributed questionnaires in hard copies in six private hospitals in Erbil. The researcher started gathering data from November 25, 2014 till January 3<sup>rd</sup>, 2015.

### **3.3 Sampling Size and Target Population**

The aim of sample design is to clearly determine set of objective; the sampling technique was random sampling method, where all employees in six private hospitals had equal chances of being selected for the sample. The population of this study was approximately 480 participants from six private hospitals and the sample size of this study was 234 participants.

### **3.4 Instrument for Measuring (Scales)**

The questionnaire structured in the form of multiple choice questions. The participants were asked to mark each item on five point likert scales.

### **3.5 Data Analysis and Results**

The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals' effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. As it mentioned previously total of 234 respondents were involved in completing the survey. The current study deals with eight dimensions of the quality management as independent factors (Customer focused organization, Leadership, Involvement, Process approach, System approach to management, Continual improvement, Factual approach to decision making, Mutually and beneficial supplier relationships) on the other hand private hospitals' effectiveness as dependent factor.

The following tables show the statistical results of this study using SPSS version 20 program:

Demographic analysis

Table (1), Demographic analysis

Items		Frequency	Percent
Age	20-29	28	12
	30-39	92	39.3
	40-49	76	32.5
	50-59	34	14.5
	60 and above	4	1.7
Gender	Male	190	81.2
	Female	44	18.8
Education	Bachelor	147	62.8
	Master	49	20.9
	PhD	38	16.2
Experience	< a Year	3	1.3
	1-2	69	20.5
	3-4	64	27.4
	5-6	42	17.9
	7-8	18	7.7
	9-10	17	7.3
	11 +	21	9
Status	Single	84	35.9
	Married	150	64.1

Table (1), shows the demographic analysis for participants involved in this study. As seen in the above table the frequency and percentage of participants' age involved in this study. 12% of participants were 20-29 years old, 39.3% of participants were 30-39 years old, 32.5% of participants were 40-49 years old, 14.5% of participants were 50-59 years old and 1.7% of participants were 60 years old and above. In regard of participants' age involved in this study; 81.2% of participants were male and 18.8% of participants were female. In regard of participants' level of education; 62.8% of participants had obtained bachelor honour, 20.9% of participants had obtained master degree and 16.2% of participants had obtained PhD degree. In regard of participants' years of experience in the hospitals; 1.3% of participants had experience less than a year, 20.5% of participants had 1-2 years of experience, 27.4% of participants had 3-4 years of experience, 17.9% of participants had 5-6 years of experience, 7.7% of participants had 7-8 years of experience, 7.3% of participants had 9-10 years of experience and 9% of participants had 11 years and above of experience. Finally, in terms of participants' marital status; 35.9% of participants were single and 64.1% of participants were married.

Table (2), Reliability analysis

Factor	Cronbach's Alpha	N of Items
Customer focused organization	.801	5
Leadership	.625	5
Involvement	.830	5
Process approach	.941	5
System approach to management	.949	5
Continual improvement	.980	5
Factual approach to decision making	.963	5
Mutually beneficial supplier relationship	.659	3
Effectiveness	.890	7

As seen in table (2), the findings of reliability test for all variables in this study. In terms of customer focused organization variable the Cronbach's Alpha for five items was .801 (.801>.6) this indicates that items used for customer focused organization were reliable. The Cronbach's Alpha for leadership variable by measuring five items was .625 (.625>.7) this indicates all items used for leadership factor were reliable. The Cronbach's Alpha for involvement variable by measuring five items was .830 (.830>.7) this indicates all items used for involvement factor were reliable. The Cronbach's Alpha for process approach variable by measuring five items was .941 (.941>.7) this indicates all items used for process approach factor were reliable. The Cronbach's Alpha for system approach variable by measuring five items was .949 (.949>.7) this indicates all items used for system approach factor were reliable. The Cronbach's Alpha for continual improvement variable by measuring five items was .980 (.980>.7) this indicates all items used for continual improvement factor were reliable. The Cronbach's Alpha for factual approach to decision making variable by measuring five items was .963 (.963>.7) this indicates all items used for factual approach to decision making factor were reliable. The Cronbach's Alpha for mutually beneficial supplier relationship variable by measuring three items was .659 (.659>.7) this indicates all items used for mutually beneficial supplier relationship factor were reliable and the Cronbach's Alpha for effectiveness variable by measuring three items was .890 (.890>.7) this indicates all items used for effectiveness factor were reliable.

Table (3), Correlation analysis

Correlation analysis		Effectiveness
customer focused	Pearson Correlation	.859**
	Sig. (2-tailed)	.000
	N	234
leadership	Pearson Correlation	.674**
	Sig. (2-tailed)	.000
	N	234
involvement	Pearson Correlation	.845**
	Sig. (2-tailed)	.000
	N	234
process approach	Pearson Correlation	.941**
	Sig. (2-tailed)	.000
	N	234
system approach	Pearson Correlation	.949**
	Sig. (2-tailed)	.000
	N	234
continual improvement	Pearson Correlation	.700**
	Sig. (2-tailed)	.000
	N	234
factual approach	Pearson Correlation	.702**
	Sig. (2-tailed)	.000
	N	234
Mutually beneficial	Pearson Correlation	.173**
	Sig. (2-tailed)	.008
	N	234

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Correlations test provides the values of the identified correlation tests; as seen in table (3) the correlations between independent factors and dependent factor. The correlation between customer focused organization and hospital's effectiveness, the R value =.859\*\* which is <0.01 means that there is strong correlation between customer focused organization and hospital's effectiveness. The correlation between leadership dimension and hospital's effectiveness, the R value =.674\*\* which is <0.01 means that there is a correlation between leadership dimension of

quality management and hospital's effectiveness. The correlation between involvement dimension and hospital's effectiveness, the R value =.845\*\* which is <0.01 means that there is a strong correlation between involvement dimension of quality management and hospital's effectiveness.

The correlation between process approach dimension and hospital's effectiveness, the R value =.941\*\* which is <0.01 means that there is a strong correlation between process approach dimension of quality management and hospital's effectiveness. The correlation between system approach dimension and hospital's effectiveness, the R value = .949\*\* which is <0.01 means that there is a strong correlation between system approach dimension of quality management and hospital's effectiveness. The correlation between continual improvement dimension and hospital's effectiveness, the R value =.700\*\* which is <0.01 means that there is a strong correlation between continual improvement dimension of quality management and hospital's effectiveness. The correlation between factual approach dimension and hospital's effectiveness, the R value =.702\*\* is <0.01 means that there is a strong correlation between factual approach dimension of quality management and hospital's effectiveness and the correlation between Mutually beneficial dimension and hospital's effectiveness, the R value =.173\*\*is <0.01 means that there is a weak correlation between Mutually beneficial dimension of quality management and hospital's effectiveness

Table (4), Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983 <sup>a</sup>	.967	.965	.139
a. Predictors: (Constant), system approach, mutually beneficial, continual improvement, leadership, involvement, customer focus, process approach, factual approach				

In this study eight dimensions of quality management were measured as independent variables (system approach, mutually beneficial, continual improvement, leadership, involvement, customer focus, process approach, factual approach) and hospitals' effectiveness as dependent. As seen in the table (4) the value of R square = .967 this indicates that 97% of total variance has been explained.

Table (5), Analysis of variance

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	126.334	8	15.792	815.540	.000 <sup>b</sup>
	Residual	4.357	225	.019		
	Total	130.690	233			
a. Dependent Variable: effectiveness						
b. Predictors: (Constant), system approach, mutually beneficial, continual improvement, leadership, involvement, customer focus, process approach, factual approach						

As seen in table (5) the value of F for eight dimensions of quality management (system approach, mutually beneficial, continual improvement, leadership, involvement, customer focus, process approach, factual approach) = 815.540, accordingly the value of F is >1 which means there is a significant relation between eight dimensions of quality management as independent variables and hospitals' effectiveness as dependent variable.

Table (6), Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.065		1.139	.256
	Customer focus	-.008	.032	-.008	-.266	.790
	Leadership	-.015	.016	-.017	-.967	.334
	Involvement	.024	.024	.026	.974	.331
	Continual improvement	.223	.060	.386	3.719	.000

	Factual approach	-.057	.062	-.096	-.919	.359
	Mutually beneficial	.031	.008	.049	3.949	.000
	Process approach	-.095	.100	-.094	-.950	.343
	System approach	.880	.100	.885	8.788	.000
a. Dependent Variable: effectiveness						

As seen in table (6), the results of multiple regression analysis for this study. The findings of this study were as follow; in terms of the first dimension of quality management, customer focused organization has not predicted hospital's effectiveness (The value of  $B = -.008$ , since  $-.008 > .001$ , therefore the first research hypothesis was rejected which customer focused organization will not have positive impact on hospitals' effectiveness. In terms of the second dimension of the quality management, leader has not predicted hospital's effectiveness (The value of  $B = -.015$ , since  $-.015 > .001$ , therefore the second research hypothesis was rejected which leader will not have positive impact on hospitals' effectiveness. In terms of the third dimension of the quality management, involvement has predicted hospital's effectiveness (The value of  $B = .024$ , since  $.024 < .001$ , therefore the third research hypothesis was supported which involvement will have positive impact on organizational effectiveness. In terms of the fourth dimension of the quality management, continual improvement has predicted hospital's effectiveness (The value of  $B = .223$ , since  $.223 < .001$ , therefore the fourth research hypothesis was supported which continual improvement will have positive impact on hospital's effectiveness. In terms of the fifth dimension of the quality management, factual approach has not predicted hospital's effectiveness (The value of  $B = -.057$ , since  $-.057 > .001$ , therefore the fifth research hypothesis was rejected which factual approach will not have positive impact on hospital's effectiveness. In terms of the sixth dimension of the quality management, mutually beneficial has predicted hospital's effectiveness (The value of  $B = .031$ , since  $.031 < .001$ , therefore the sixth research hypothesis was supported which mutually beneficial will have positive impact on hospital's effectiveness. In terms of the seventh dimension of the quality management, process approach has not predicted hospital's effectiveness (The value of  $B = -.095$ , since  $-.095 > .001$ , therefore the seventh research hypothesis was rejected which process approach will not have positive impact on hospital's effectiveness and the last dimension of the quality management, system approach has significantly predicted hospital's effectiveness (The value of  $B = .880$ , since  $.880 < .001$ , therefore the eighth research hypothesis was supported which system approach will have positive impact on hospital's effectiveness.

#### 4. Discussion and Conclusions

The main purpose of this study is to analyze the quality management dimensions and its impact on private hospitals' effectiveness in Erbil to find out the main reasons of the quality problems in health care systems in private hospitals. Hospitals provide quality of services to patients. The main goal of hospitals is to save humans life by managing illness practices. As mentioned previously, the researcher developed eight research hypotheses. The findings of this study revealed that the highest value was for system approach to management. The first research hypothesis was rejected which customer focused organization will not have positive impact on hospitals' effectiveness. In regards of leader as a second dimension of quality, the findings revealed that leaders will not have positive impact on hospital's effectiveness accordingly the second research hypothesis was rejected. Regarding of the third dimension of the quality management, the findings revealed that involvement has predicted hospital's effectiveness, however the researcher came to conclude that involvement as quality management dimension will have positive impact on hospital's effectiveness, and accordingly the fourth hypothesis was supported. In terms of continual improvement as a fourth dimension of the quality management the findings revealed that continual improvement will have positive impact on hospital's effectiveness therefore the fourth research hypothesis was supported. In terms of factual approach as a fifth dimension of the quality management the findings revealed that factual approach will have not positive impact on hospital's effectiveness therefore the fifth research hypothesis was rejected. Regarding of the sixth dimension of the quality management, the findings revealed that mutually beneficial has predicted hospital's effectiveness, however the researcher came to conclude that mutually beneficial as quality management dimension will have positive impact on hospital's effectiveness, and accordingly the sixth hypothesis was supported. Regarding of the seventh dimension of the quality management, the findings revealed that process approach has not predicted hospital's effectiveness, however the researcher came to conclude process approach as quality management dimension will have not positive impact on hospital's effectiveness, and accordingly the seventh hypothesis was rejected. Finally the last finding of this study revealed that system approach has significantly predicted hospital's effectiveness (The value of  $B = .880$ , since  $.880 < .001$ , therefore the eighth research hypothesis was supported which system approach will have positive impact on hospital's effectiveness. Accordingly the findings of this study showed that the highest value was for system approach to management, therefore hospitals' management should be able to manager, recognize and identify a system of interconnected and organized process as a system participates to the hospitals efficiency and effectiveness in attaining its hospitals' goals.

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## The Impact of Service Quality Dimensions on Students' Satisfaction

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**Abstract:** Today in many industries service quality is widely used in different sectors. Every sector whether services sector or manufacturing can apply and implement five dimensions of service quality. The purpose of this study is to reveal the impact of service quality on student's satisfaction in education sectors. The findings of the study will show impact of different service quality dimensions on students' satisfaction in a private university in Erbil. This study is useful to see the significance of service quality to satisfy students. SERVQUAL model of service quality provided by (Parasuraman, et al., 1988) is implemented. It includes five dimensions tangible, reliability, responsiveness, assurance and empathy. Findings of this study showed that four of service quality dimensions (tangible, responsiveness, assurance and empathy) have positive association with student satisfaction, except reliability have negative association with student satisfaction.

**Keywords:** Service Quality, Student Satisfaction, SERVQUAL

### 1. Introduction

At the present time education sectors are very essential, because the fact is they considered as an essential source of income for country. Therefore, many countries are attempting to get the attention of local and international students to their destinations, as a result they will be able to grow and enhance their nation's life. University is considered a vital element of the education sectors, the reason is university satisfy the most essential students' needs which is education, learning material, library and accommodation. A great values and tool for enhancing service quality is essential in competitive market. Education sectors' service quality is the service providing to students expectations and almost all universities are able to gain students' satisfaction through providing a high quality of services. Students, in general, don't consider price when they are comparing services – their main objective is quality. Therefore, the universities should establish a certain level of quality that meets the needs of the students and demonstrate this quality in practice. Nowadays the students in education sectors became more sophisticated and more required. Also it is necessary to recognize students' location for instance where they came from, what are students' expectation in order to choose the right strategies for enhancing universities' service quality. Usually students are much demanded, but when it comes to education sectors the most important factor to be considerate is service quality provided from

the university. Since service quality will lead to students' satisfaction, therefore implementing a successful service quality will be needed. Poor service quality in education sectors will lead to dissatisfied students. Most of universities are seeking quality enhancement systems for competitive advantages. Each service that universities provide will add value and provide satisfaction to their students. Some universities are having a specific service department which assess students satisfaction and meet their needs and expectations. At the present time the key success of competitive market depends on delivering a high quality of service and this will lead to increase the level of students' satisfaction. Therefore, students' assessment for the quality of services in education sectors are very essential in developing the business. Universities should provide a competitive services to satisfy their students and gain students' loyalty. Students satisfaction has many advantages, such as creating a strong relationship between university and students and creating students loyalty. In this study, the researchers are going to use service quality dimensions as variables to measure students' satisfaction in education sectors. There are five aspects of service quality: empathy, assurance, reliability, responsiveness and tangible. These five dimensions play their role in the students' observations of service quality. In this study students satisfaction is dependent variable while five dimensions of service quality are independent variables along with sub independent variable such us empathy, reliability, responsiveness, assurance and tangible

## 2. Research Model and Hypothesis

This section explains research model and research hypothesis created by the researcher:

### *Research Model:*

The following figure is the research model:

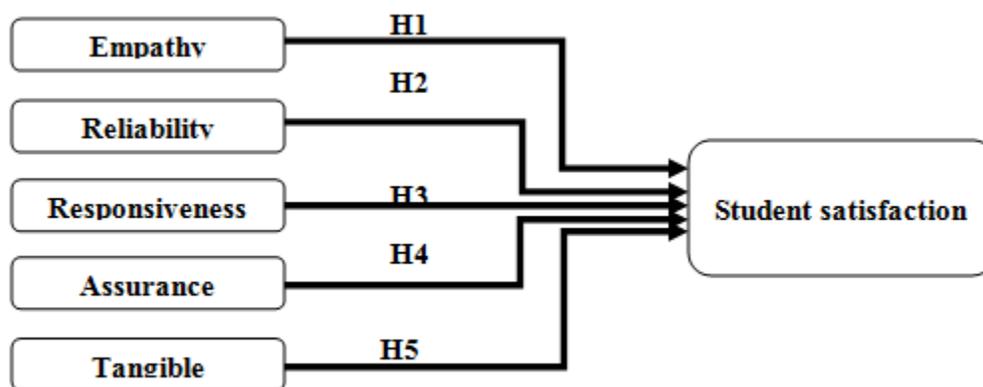


Figure 3- Research Model

*Research Hypothesis:*

According to the above researcher model, the researcher made the following research hypothesis:

**H1:** There is a positive impact of Empathy on students' satisfaction

**H2:** There is a positive impact of Reliability on students' satisfaction

**H3:** There is a positive impact of Responsiveness on students' satisfaction

**H4:** There is a positive impact of Assurance on students' satisfaction

**H5:** There is a positive impact of Tangible on students' satisfaction

### **3. Literature Review**

#### **3.1 Service Quality Concept**

One of the most significant characteristics of services is that it is a process. Therefore service companies don't have any product, but they do have interactive processes. Services are invisible; therefore it is difficult for the supplier to measure (Mudassar, et al., 2013). As conveyance of services in the education sectors dependably includes human beings, it should concentrate on the management of people, and specifically on the collaborations between the students and academic instructors and administrators (Dursun, et al., 2013). There are several important service quality definitions, proposed by various researchers. Service quality is a divergence amongst client's anticipation of the service supplier and their assessment of the services (Edvardsson, 2005). Another definition has been proposed by (Markovic & Raspor, 2010, 197) argued that service quality is a dissimilarity amongst consumers' anticipation for service execution before the service encounter and their observations of the rendered services. Gefan 2002 as cited in (Muyeed, 2012), defined service quality as the particular appraisal made by consumers among the expected service quality and actually rendered services. Quality is a bit more difficult to characterize than consumers' gratification, because of the various statements, proposed by different researchers. Quality is focused to consumers' views, thus quality is characterized as whatever the buyer sees as a quality (Mola & Juson, 2011). According to (Ahmad, et al, 2014) there are two variables, which influence the perception of consumers, such as expectations and quality standards. Expectations means what is actually the students supposed to get from the service provider.

#### **3.2 Service Quality Dimensions**

Service quality has been the point of impressive concern via specialists lately. By taking a look at different meanings of service quality it can be seen that it is an after effect of the correlation which clients makes between their desires and what they really get from the related service

supplier (Ramseook-Munhurrin, et al., 2010). Various studies have been carried out in order to reveal dimensions of service quality that most essentially contribute to fundamental quality appraisals in the service encirclement. Service quality is crucial in light of the fact that it will help to measure, to control and afterward enhance client's service quality (Cheng, et al., 2011). There are ten service quality dimensions, which were determined by Parasuraman et al. (1985). These dimensions fit as a service quality field from which these items were obtain for the SERVQUAL model (Kleynhans and Zhou, 2012).

Later, after refinement, above mentioned dimensions were revised and five dimensions (three original and two combined), Parasuraman, et al., (1988) were developed in order to evaluate service quality (Berndt, 2009):

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Tangibles are defined “as the appearance of physical facilities, equipment, personnel, and communication materials” Physical appearance is the appearance of the equipment, appearance of the personnel, the look of building and renovation (Munusamy, et al., 2010).

Tangibles provides physical representation of image of the services that clients, will use to assess the quality. In spite of the fact that tangibles are frequently utilized by service providers to reinforce their reputation, give congruity, and sign quality to client, most organizations unite together tangibles with other in order to establish a service quality technique for the company (Yadav, 2013).

Reliability depicts whether a service supplier follows assured promises and how precious it is in the actions. The significant importance lies in fulfilling promptly the customer's requests (Dado, et al., 2011). Reliability “reflects the service provider's ability to perform service dependably and accurately”. It includes “doing it right the first time” and as for the students it is one of the most significant dimension Berry and Parasuraman, (1991) as cited in (Landrum, et al., 2009). In detail, reliability implies that the organization conveys on its guarantees - guarantees about conveyance, service supply, issue determination and pricing policy. Clients prefer to work with organizations that keep their guarantees about the service outcomes (AbuKhalifeh and Mat Som, 2012).

Responsiveness – “being willing to help” - refers to the organization's readiness to settle happened issues and availability to provide fast service. It is important to respond to all students' requests, otherwise the request can turn into a complaint. Service suppliers' capability to ensure that they are providing with a service on time is a basic part of service quality for

major students. Responsiveness is conveyed to students by the length of time they need to wait for the reply for inquiries. Standards for promptness that indicates requirements in the internal policy of the company might be dissimilar to what the consumers require or expect (Ahmad, et al., 2014). Assurance indicates “the knowledge and courtesy of employees and their ability to inspire trust and confidence” (Janita and Miranda, 2013). This dimension is especially critical for services that consumers see as high hazard or for the services where the outcome seems uncertain for the students (Yousapronpaiboon, 2014). Assurance and empathy comprise originally developed seven dimensions, which are communication, security, credibility, competence, understanding/knowing students, courtesy, and access (AbuKhalifeh and Mat Som, 2012).

### **3.3 Student Satisfaction**

It can be seen that today a lot of researchers are discussing the topic of satisfaction. Proposers of above mentioned tend to accentuate the significance of corresponding to specifications, satisfying requirements, providing consumers with the desirable quality of services (Angelova and Zekiri, 2011). Today, student satisfactions seriously count. If students are dissatisfied, they will not recommend the university to others and they might switch university to other. All the things which the university does in order to increase service quality can be counted as a zero if the student left the university without being satisfied. Nowadays, fulfilling students’ requests remains the greatest challenge (Fernandes, et al., 2011). According to (Akhtar and Zaheer, 2014) “satisfaction is an individual’s feeling of pleasure or disappointment resulting from comparing a product or service perceived performance or outcome in relation to his or her expectation”. In the other words, if service quality matches consumer’s expectation, the student will be satisfied. Nevertheless in the education sector to meet customer’s expectations is hard enough. In many industries speed has become the most valued and the new competitive advantage. Speed is shortening the product life cycle from years to weeks. Speed is what the education sector consumer wants. Those who can fulfill are going to win, those who can’t, will be passed by. When a manager knows the real needs of a client that help to focus on a major points for the encounter (Hasan and Ilias, 2008).

## **4. Methodology**

The purpose of this study is to investigate the impact of service quality on students’ satisfaction in a private university in Erbil. A quantitative method used in order to analyse data gathered by the researchers. The researchers used questionnaire in order to be able to analyse the current study. A random sampling method used, where almost all students will have equal chances of being selected for the sample. The researchers gathered 133 questionnaires, however 22 questionnaires were invalid and 111 questionnaires were properly completed. The questionnaire structured in the form of multiple choice questions. The participants were asked to mark each item on five point scales ranging from definitely agree to do not agree at all. The questionnaire was adapted from (Palli and Mamilla, 2012) and (Fares, et al., 2013).

#### 4.1 Data analysis

Table 1- Reliability test

Factor	Reliability Statistics Cronbach's Alpha	Nu. Of item
Tangible	.770	4
Empathy	.833	3
Reliability	.894	3
Assurance	.784	3
Responsiveness	.882	2

Table (1) shows Reliability test for five service quality dimensions. Concerning tangible the Statistics Cronbach's Alpha  $\hat{\rho}$ =.770, concerning of empathy Reliability Statistics Cronbach's Alpha  $\hat{\rho}$ =.833, concerning of reliability factor Reliability Statistics Cronbach's Alpha  $\hat{\rho}$ =.894, concerning of assurance Reliability Statistics Cronbach's Alpha  $\hat{\rho}$ =.784 and concerning of responsiveness factor Reliability Statistics Cronbach's Alpha  $\hat{\rho}$ =.882.

Table 2-Correlation analysis

Factors	Pearson Correlation	Studentsatisfaction
Empathy	Pearson Correlation	.812(**)
	Sig. (2-tailed)	.000
	N	111
Reliability	Pearson Correlation	.675(**)
	Sig. (2-tailed)	.000
	N	111
Assurance	Pearson Correlation	.789(**)
	Sig. (2-tailed)	.000
	N	111
Responsiveness	Pearson Correlation	.252(**)
	Sig. (2-tailed)	.008
	N	111
Tangible	Pearson Correlation	-.265(**)
	Sig. (2-tailed)	.005
	N	111

\*\* Correlation is significant at the 0.01 level (2-tailed).

According to correlation test as seen in table (2), the researchers found out that empathy has significant correlation ( $r=.812^{**}$ ,  $p<0.01$ ) with students satisfaction. The correlations between reliability as independent factor and student satisfaction as dependent factor. According to

correlation test, the researcher found out that assurance has significant correlation ( $r=.675^{**}$ ,  $p<0.01$ ) with student satisfaction. The correlations between assurance as independent factor and student satisfaction as dependent factor. According to correlation test, the researcher found out that assurance has significant correlation ( $r=.789^{**}$ ,  $p<0.01$ ) with student satisfaction. The correlations between responsiveness as independent factor and student satisfaction as dependent factor. According to correlation test, the researcher found out that responsiveness has significant correlation ( $r=.252^{**}$ ,  $p<0.01$ ) with student satisfaction, and the correlations between tangible as independent factor and student satisfaction as dependent factor. According to correlation test, the researcher found out that tangible has significant correlation ( $r=-.265^{**}$ ,  $p<0.01$ ) with student satisfaction.

Table 3-Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.901(a)	.811	.802	.550

a Predictors: (Constant), Tangible, Responsiveness, Empathy, Assurance, Reliability

Table 4-ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	136.564	5	27.313	90.296	.000(a)
	Residual	31.760	105	.302		
	Total	168.324	110			

a Predictors: (Constant), Tangible, Responsiveness, Empathy, Assurance, Reliability

Table 5- Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-4.185	.502		-8.339	.000
Empathy	1.421	.185	.949	7.684	.000
Reliability	-.407	.143	-.286	-2.848	.005

Assurance	.513	.169	.376	3.034	.003
Responsiveness	.373	.098	.164	3.797	.000
Tangible	.619	.085	.393	7.278	.000

a Dependent Variable: Satisfaction

Table (5) explains the results research hypothesis. The first hypotheses, empathy has significantly predicted students satisfaction (Beta is weight 0.949,  $p < .001$ ) this indicates that empathy has a positive impact on students' satisfaction. Therefore, based on this result the first hypotheses was supported. The second hypotheses, reliability has not significantly predicted students' satisfaction (Beta is weight -0.286,  $p < .001$ ) this indicates that reliability does not have a positive impact on students' satisfaction. Therefore, based on this result the second hypotheses was rejected. The third hypotheses, assurance has significantly predicted students satisfaction (Beta is weight 0.376,  $p < .001$ ) this indicates that assurance has a positive impact on students satisfaction. Therefore, based on this result the third hypotheses was supported. The forth hypotheses, responsiveness has significantly predicted studentsatisfaction (Beta is weight 0.164,  $p < .001$ ) this indicates that responsiveness has a positive impact on students satisfaction. Therefore, based on this result the forth hypotheses was supported. Finally, the fifth hypotheses, tangible has significantly predicted students satisfaction (Beta is weight 0.393,  $p < .001$ ) this indicates that tangible have a positive impact on students satisfaction. Therefore, based on this results the fifth hypotheses was supported.

## 5. Discussion

In this section, the main research findings of this study are discussed. Also, the findings are discussed in relations to previous studies reviewed in literature review of this study. The reliability coefficients of five service quality dimensions of modified SERVQUAL were reliable with the original version developed by Parasurarnan et al. (1988). In order to measure the reliability of instruments used in this study, Cronbach's alpha is used. According to (Sekaran, 2005) an acceptable instrument in analyzing a research when Cronbach's alpha is greater than 0.6 and is within 0.8. Reliability test for five service quality dimensions were as follow: Reliability Statistics Cronbach's Alpha for tangible was Cronbach's Alpha  $\hat{\rho} = .770$ , for empathy Cronbach's Alpha  $\hat{\rho} = .833$ , for reliability Cronbach's Alpha was  $\hat{\rho} = .894$ , for assurance Cronbach's Alpha  $\hat{\rho} = .784$  and for responsiveness Cronbach's Alpha was  $\hat{\rho} = .882$ . The results of reliability testing of five service quality dimensions in the research were all above 0.6; therefore, they are all acceptable for further analysis. According to the summary of the finding, it clarifies that, the current study has many to be discussed. University's students were satisfied more according to University's service quality except reliability dimension. According to the data analysis in this study, the current students gave distinctive meaning for University service quality which were linked to the SERVQUAL dimensions. This confirm the theory of service

quality (SERVQUAL) developed by Parasuraman et al. (1988), which concentrated assessment that reflects perception of assurance, reliability, empathy, tangible and responsiveness. This study had empathy, reliability, assurance, responsiveness and tangible which were significantly correlated to students' satisfaction. Empathy factor was an attribute that was applicable in the University for this study. Empathy factor was found to be significantly correlated ( $r=.812^{**}$ ,  $p<0.01$ ) to students' satisfaction. Reliability factor was an attribute that was applicable in the University for this study. Reliability factor was found to be significantly correlated ( $r=.675^{**}$ ,  $p<0.01$ ) to students' satisfaction. Assurance factor was an attribute that was applicable in the University for this study. Assurance factor was found to be significantly correlated ( $r=.789^{**}$ ,  $p<0.01$ ) to students' satisfaction. Responsiveness factor was an attribute that was applicable in the the University for this study. Responsiveness factor was found to be significantly correlated ( $r=.252^{**}$ ,  $p<0.01$ ) to students' satisfaction and Tangible factor was an attribute that was applicable in the University for this study. Tangible factor was found to be significantly correlated ( $r=-.265^{**}$ ,  $p<0.01$ ) to students' satisfaction. According to the findings of this study, the study also suggests that SERVQUAL is an excellent instrument to measure University service quality. consequently, managers could apply this instrument to evaluate University service quality in University and also might be suitable in other education sectors. Service quality is to emphasize improving and maintain students satisfaction. The relationships of SERVQUAL and students' satisfaction were analyzed by regression analysis. Four SERVQUAL dimensions were significantly associated to students' satisfaction at the level of  $p < 0.01$ , except reliability. According to the multiple regression analysis, the first hypotheses, empathy has significantly predicted students' satisfaction (Beta is weight 0.949,  $p<.001$ ) this indicates that empathy have a positive impact on students' satisfaction. Therefore, based on this results the first hypotheses was supported. Findings of this study shows that empathy is positively related to students' satisfaction, however students perceive a low degree of interaction with staff in University. Eempathy comprises originally developed seven dimensions, which are communication, credibility, competence, understanding/knowing students, courtesy, and access. The University reflects a capability to fulfill students' concerns in terms of their needs, for instance, individualized attention and having students' best interest at heart. The second hypotheses, reliability has not significantly predicted students' satisfaction (Beta is weight -0.286,  $p<.001$ ) this indicates that reliability does not have a positive impact on students' satisfaction. Therefore, based on this results the second hypothesis was rejected. Although, Second hypothesis result which did not prove that reliability has a positive impact due to participants different educational background, age, gender and etc. But still reliability could be a factor that influence students' satisfaction positively in University. The third hypotheses, assurance has significantly predicted students' satisfaction (Beta is weight 0.376,  $p<.001$ ) this indicates that assurance have a positive impact on students' satisfaction. Therefore, based on this result the third hypotheses was supported. Assurance is another service quality factor emphasized by students. The degree to which students are feel confidence and trust relies on the service quality provided by University staff. According to the finding of this study,

assurance has a positive impact on students' satisfaction. This finding could be clarified by the exceptional and capable services that the university provide. The fourth hypotheses, responsiveness has significantly predicted students' satisfaction (Beta is weight 0.164,  $p < .001$ ) this indicates that responsiveness have a positive impact on students' satisfaction. Therefore, based on this result the forth hypotheses was supported. Responsiveness factor of service quality dimension is another key success factor in the University . The finding of this study showed that responsiveness has a positive impact on students' satisfaction in university . According to Ahmad, et al., (2014: 764) Responsiveness is refers to the university 's readiness to settle happened issues and availability to provide fast service. It is important to respond to all students' requests, otherwise the request can turn into a complaint. Service suppliers' capability to ensure that they are providing with a service on time is a basic part of service quality for major students. Finally, the fifth hypotheses, tangible has significantly predicted students satisfaction (Beta is weight 0.393,  $p < .001$ ) this indicates that tangible have a positive impact on students' satisfaction. Therefore, based on this results the fifth hypotheses was supported. According to students impressions tangible can be explained as physical facilities, equipment and appearance of University building. Students might evaluate university facilities and designs, visibility of equipment.

## **6. Conclusions and Recommendations**

The main purpose of this study was to investigate the impact of service quality dimensions on students' satisfaction. The findings seemed to be different in the two ways of analysis. The researchers proposed to study theoretical foundations on students' satisfaction and service quality dimensions, SERVQUAL to investigate the impact of service quality dimensions on students' satisfaction to meet the research objective. The association between service quality and student satisfaction will assist university management to clarify what these service quality dimensions mean to the students and to university itself. According to regression analysis, the researchers found out that four of service quality dimensions had positive impact on students' satisfaction, except reliability factor had negative impact on student's satisfaction. Administrators should constantly adjust on those factors in order to be able to provide its students with the best values and also state the significant dimensions to lay more emphasis on to enhance service quality leading increasing level of students' satisfaction. The latest or modern business strategy is student satisfaction through ensuring that students are provided with excellent quality of services. According to the research findings, the researcher recommended the followings;

1. Staff should always serve right at the first time, therefore employee should be provided with effective training program. Students should be provided with service as promised. This factor is important, because the fact it creates trust between students and employee or the university itself. If an employee will follow the standards of the university, means that university is able to provide services as promised. Therefore necessary training should be provided to all staff members.

2. Administrators should always be visible and handling students' problem.

This is another significant factor, because students should feel that he or she is important and that management cares. That will show that university's management is involved in the operations and if it needed, the management team will solve the incident or problems immediately or even will prevent unpleasant situations.

3. Doing the best to avoid problem or issue that might occur. That should be controlled by departments, but in that case trust should be built up between manager and employee, that employee will inform his or her manager about all issues which have happened or may happen. Employee should not be afraid that he or she will be punished.
4. University's staff should be always neat and professional appearance. That creates the discipline and employees feel more responsible in front of management and the students. Professional appearance gives confidence to the employee.

## **7. Limitation and Future Research**

Few issues related with the cost and limited time in this study needs further research considerations. Due to negative result of reliability dimension, the university disclosed their information. Even though this study dealt with the student's perception towards service quality and its relation with satisfaction, the sample size considered is very small. The findings might not be very suitable as having students with different background such as, educational background, age, and gender. Empirical studies should be conducted moderately with other Universities or other industries so that investigative the service quality dimensions and students' satisfaction across the various contexts or business could be measured and could be useful for future growth and enhancement. Also, future study should focus on a larger sample size.

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**Two to Seven Authors [List all authors]**

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**One Author**

Alexie, S. (1992). *The business of fancydancing: Stories and poems*. Brooklyn, NY: Hang Loose Press.

**Chapter in a Book**

Booth-LaForce, C., & Kerns, K. A. (2009). Child-parent attachment relationships, peer relationships, and peer-group functioning. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 490-507). New York, NY: Guilford Press.

**5) Reference Citations in Text**

**Indirect Quotation with Parenthetical Citation**

Libraries historically highly value intellectual freedom and patron confidentiality (LaRue, 2007).

**Indirect Quotation with Author as Part of the Narrative**

LaRue (2007) identified intellectual freedom and patron confidentiality as two key values held historically by libraries.

**Direct Quotation with Parenthetical Citation**

Darwin used the metaphor of the tree of life "to express the other form of interconnectedness—geneological rather than ecological" (Gould & Brown, 1991, p. 14).

*Direct Quotation with Author as Part of the Narrative*

Gould and Brown (1991) explained that Darwin used the metaphor of the tree of life "to express the other form of interconnectedness—genealogical rather than ecological" (p. 14).