أثر عدم تماثل المعلومات وتكاليف الوكالة على تمهيد التوزيعات

"دراسة إمبريقية في البيئة المصرية"

إسراء فخري إبراهيم علي

معيدة بكلية التجارة ـ جامعة الزقازيق

تحت اشراف

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ملخص

يهدف هذا البحث الي اختبار أثر عدم تماثل المعلومات وتكاليف الوكالة علي تمهيد التوزيعات. يقاس المتغير المستقل الأول عدم تماثل المعلومات باستخدام أربعة مقاييس هما: عمر الشركة، حجم الشركة، تقلبات الأرباح، والأصول الملموسة. أما المتغير المستقل الثاني فهو تكاليف الوكالة وتقاس بالتدفقات النقدية الحرة، الفرص الاستثمارية المتاحة، تركز الملكية، والملكية المؤسسية. المتغير التابع في البحث هو تمهيد توزيعات الارباح ويتم قياسه باستخدام معامل سرعة التعديل لنموذج (1946) Lintner، حيث أن القيم القريبة من الصفر تشير إلى تمهيد توزيعات الأرباح والعكس صحيح. يتكون مجتمع الدراسة من جميع الشركات المساهمة المسجلة في بورصة الأوراق المالية ماعدا البنوك والمؤسسات المالية نظراً لطبيعة أنشطتها وتقاريرها الخاصة. تشمل عينة الدراسة ٧٠ شركة تمثل ٤٩٠ مشاهدة خلال الفترة من ٢٠١٢ إلي ٢٠١٨. تشير نتائج الدراسة بشكل عام أن لكل من تكاليف الوكالة وعدم تماثل المعلومات تأثير علي قرار الشركة لتمهيد توزيعات الأرباح.

كلمات مفتاحية: عدم تماثل المعلومات، تكاليف الوكالة، تمهيد توزيعات الأرباح، سياسة توزيع الأرباح.
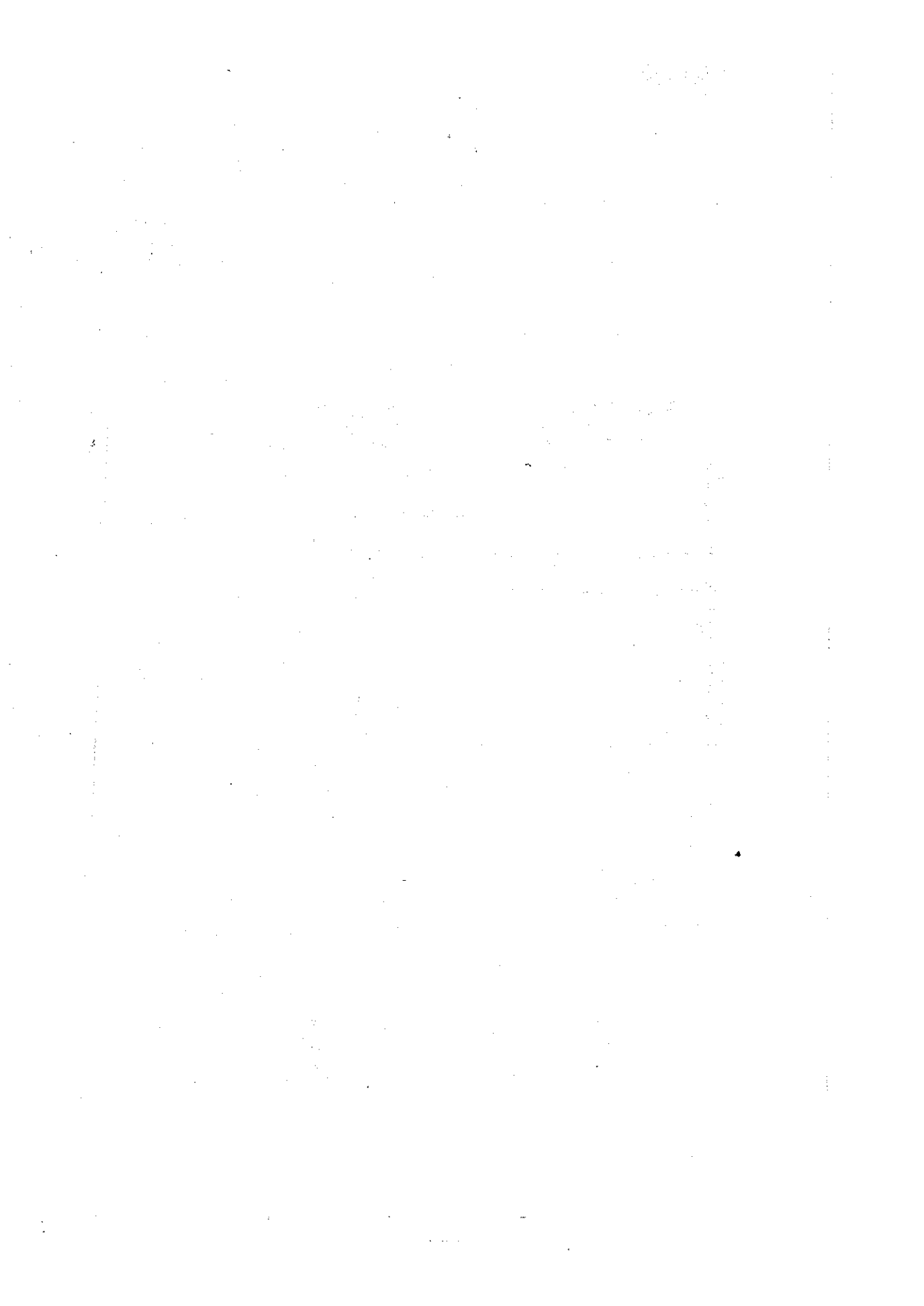
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The impact of applying ERP System on financial liquidity and Market performance for Firms Listed in the Egyptian Stock Exchange:

An empirical study

Research Submitted in partial fulfillment of the requirements for the master's degree in accounting

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Introduction and the problem of the Research:

In recent decades technology plays a vital role in business environment. Most companies rely on computers and software systems to obtain accurate and trusted information to manage their business. It becomes necessary for all companies to combine information technology solutions that operated successfully. Many firms have been adopted information technology on a great scope with installing ERP system (Bea and Ashcorft, pp, 5, 2004).

Enterprise resource planning system (ERP) is software systems for business management, surrounding modules that supporting functional areas such as planning, manufacturing, sales, marketing, distribution accounting, financial, human resource management, project management, inventory management, service and maintenance, internal control, value chain, transportation and e-business. The architecture of the software facilitates transparent integration of modules, providing flow of information between all functions within the enterprise in a consistently visible manner (David, pp, 3,2002).

Information technology has become a crucial and basic aspect in work environment for its significant role in completing tasks effectively for all sectors, especially for profit. Successive rapid changes in information technology offer the accountant an opportunity to be familiar with the new fields which are the results of changes. As a result, if the accountant hesitates and stops developing himself in response to the new changes his social position may decline (Rittenberg, pp, 63, 2001).

The traditional accounting systems have drawbacks that they aren't integrated systems; they aren't designed for collaborative work, and they have difficultly to consolidate financial data especially when the firm has several branches and offices and also cannot help in the fast decision making process. Traditional systems lost time to collect data and cannot detect and discover the mistakes and errors. The large firms with several branches, each branch has its own liquidity and his own market share in stock exchange. In addition, The conventional systems require time and effort to collect the data that related to cash and restricted cash for each branch and each department, and they take long period of time to examine the inventory items and the inventory expiration date in each branch for the firm, thus it causes a significant loss for firms.

Likewise, the conventional systems are not accurate about the information of account receivables of each branch and the allowance of doubtful account, and also they aren't accurate about the information to the liabilities of each branch, therefore it causes significant deficit in payment of obligations. Therefore that affects financial liquidity, where financial liquidity is one of the areas reflecting one side of company performance, its systematic and proper management may help companies achieve the goal on the way to excellence (Rybovicova, pp, 816, 2016) and also affects financial position and competitive edge.

Furthermore, the traditional accounting methods face difficultly to consolidate and collect the information of each branch about the number of shares of each branch and the time of subscription, they aren't accurate about the information of fluctuation in the stock exchange and the nature of the other competitors. In addition, the information of the replacement cost of assets whatever is overvalued or undervalued compared with the market value and the changing in the price of shares.

Hence, the modern and new technology is required to solve all the problems by traditional accounting systems. ERP system has a lot of aspects as, integrating a lot of software, and it's basically focusing on integrating all financial processes and can consolidate the liquidity ratios and financial statements for many branches at fast time without any effort. In addition, ERP system is the most effective system than the conventional and traditional accounting systems and it's providing management with the necessary information in sufficient time through appropriate communication channels and with minimal effort, and it is one of the first priority for the decision makers. Moreover, ERP system saves time and speed in detecting errors and mistakes. (Mazhoda, pp, 25, 2016).

So we can form the problem of the research in the following question:
What is the impact of applying ERP System on the financial liquidity and market performance for firms listed in the Egyptian stock exchange?
Research objective:

The main objective of this research is to investigate and examine the impact of (ERP) system on financial liquidity and market performance for companies listed in Egyptian stock exchange.

Significance of the research problem:

This research contributes to the extant literature in several ways as follows:

1- The research is considered up to the knowledge of the researcher the first study to examine the impact of applying ERP system on financial liquidity and market performance in Egyptian

2- The expected results of the study after applying (ERP) system may contribute to improve and enhance the financial liquidity and therefore increasing the confidence of lenders by building credit reputation by paying its current obligations immediately.

3-The expected results of the study after applying ERP system.contributes to increasing the market share and market value, raising up the earnings per share and therefor gain the competitive edge.

Scope and limitation of the research:

1. The research is applied for companies that listed in Egyptian stock exchange; the unlisted companies are not included.
2. The research sample includes companies that end their financial statements at Dec 31 each year during the period from 2010 to 2015.
3. Banks and insurance companies are excluded from the sample cause of their financial reports.
4. Picking companies that implement ERP system in full way, the partial way are excluded.

Research Structure:

- Chapter One: The Conceptual Background of study of the ERP system.
- Chapter Two: Financial liquidity and Market performance.
- Chapter Three: Literature review and hypotheses development.
- Chapter Four: Empirical study
- Summary and Conclusion
- Future studies
- Reference
- Appendixes

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ERP System

Overview

The importance of applying the ERP system is because this system is more sophisticated and achieves greater economy, efficiency and effectiveness by reducing the slow performance of business (Hatzithomas ,pp, 34, 2007).As well as savings in operational costs and savings in the savings in the time completions of operations. This chapter deals with everything that related to the ERP system.

Definition of the ERP system:

(Al-Seoud, pp, 27, 2006) defines the ERP system as systems contain software (Configurable Package Software) that designed and based on a comprehensive business process survey. (Chen, et al, pp, 84, 2012) marks out the ERP system as the system that integrates the business processes of the enterprise and achieves immediate access to the integrated data to enhance operational efficiency. Moreover, it achieves several other advantages as providing solutions for the inadequacy of the system and improving the production and financial cycle.

(Mukkamala, pp, 37, 2013) indicates that the ERP system is consisted of (Standardized Software Packages) that improved by firms as AP, Oracle and Baan, to accomplish the integration among all function in the enterprise as whole.

In this vein, (Shannak, pp, 38, 2015) explains the ERP system as an integrated knowledge management systems and coordination of all resources, information and function at various administrative levels through centralized databases. According to (Kamal, pp, 60, 2017),determines the ERP system as the system that helps to manage the information to customers and therefore improving the relationship with customers, gain competitive edge and this relates to supply chain and the way of dealing with suppliers.

The selection criteria of the ERP system:

There are many designs and forms of the ERP system so, the management of the enterprises should collect all data about this system and select the most suitable system that match with its purpose.

Many factors effect on the selection of the ERP system as following (Bakry, pp, 19, 2014):

a) The cost of buying the system and the time of adaptation.
b) The ability of the system in providing the requirements of the enterprise.
c) The flexibility in dealing with customers.
d) The cash provided by the supplier in its system.
e) The ability to update the versions as needed.

There is also a difficulty in the system selection process so; the main criteria choose as following (Shehab, et al, pp, 377, 2004):

1- The standard focus on the suppliers of the ERP system such as; previous experience of suppliers , the tracking of the last 12 months of the sales record of ERP system and the support role by suppliers with a high market share.

2- The standard that focus on flexibility, scalability and adaptability of the future business process.

3-The standard that focus on the characters of the product , the quality, the price, the easy to use, the interaction with other enterprises, supported by charts and the less time to implement.

Obstacles that facing the adoption of ERP system:

While there are huge benefits of applying ERP system, there are some obstacles and drawbacks that facing the adoption of ERP system as the following (khair,pp, 100, 2016):

1- Relying on the programing companies and consultants fully.

2- Download the program above the potential and predict the results quickly.

3- In the case of failure of adoption ERP system, the burden will increase on the administrative accountant.

4- Lack of engagement, consultants and experience holders.

5- Require large storage areas.

In this vein, (Shrma and Yetton, pp, 541, 2003) concluded that are some challenges that the enterprises facing when applying the ERP system as:

1- Human resources and administrative skills requirements.

2- Redesign the process.

3- The presence of specialists and experts in the field of information technology.

4- Models Workflows and Patterns.

5- Quality of information and user satisfaction.

Financial liquidity and Market Performance

Meaning of financial liquidity:

The concept of liquidity means the ability of the enterprise to cover its current obligations without affecting the assets: s price (Williamsons, pp 22, 2008). Anther simple definition, the current assets meet the current liabilities. Moreover, financial liquidity measures the ease with organization can face their obligations with liquid assets available to them (Chordia, pp, 510, et al, 2001).

The term of financial liquidity has two dimensions, the first one is quantitative and the second is qualitative. The quantitative prospect consists of structure, quantum and utilization of structure of liquid assets. The qualitative prospect focuses on the capability of enterprise to meet all the present and potential demand on cash that decrease the costs and raise the value of the business (Ferguson, et al, pp, 45, 2007)

Importance of the Financial Liquidity for the Stakeholders:

The significance of the financial liquidity is done for all participants who are interested in the standard of business organization. The importance as following (Chandra, pp, 15, 1988):

A-Creditors Point View:

Creditors did business with companies after studying its performance by current ratio, debt to assets ratio, interest coverage and principle coverage lending the finance. The study of these ratios explains the real features of the business organization (Home, pp, 55,197).

B-Government Point View:

Studying the financial liquidity ratios and knowing all details that related to it, plays a key role for the governmental decisions making, planning and control process. Taxes, revenues, financial efficiency, frame outline are the main issues that the government studies for helping in taking the right decision for future development plans(Khan and Jain, pp, 50,1982).

C- Employees and Trade Unions View:

Employees are the basic and essential resources of the enterprise, and they are interested in all details with the financial liquidity, financial performance and the profits of the enterprise. They make analysis and comparison between the past and the present performance. Trade unions know the all-financial data due to the demands for increasing the wages, salaries and social security (Helfert, pp ,22, 1989).

D-Management Point View:

The information of financial liquidity plays a vital role in providing information to the management, which helps for planning decision-making and control policies (Batty, pp, 60, 1975).

Financial Liquidity Ratio:

The main ratios of liquidity as the following (Joy, pp,60, 1977):
> Current ratio.
> Quick ratio.
> Working capital ratio.
> Cash ratio.
> Cash conversation cycle.

Meaning of Financial market performance:

The financial market performance or the market performance divides into two parts. Frist part, shows the meaning of the financial market. Second, explains evaluating the market performance. Financial market is a market for trading bonds, share, stocks, securities currencies and derivatives occurs. There are some markets have small activity, while some financial markets trade million daily (Goo, pp, 30, and 2010).

The effect of ERP system on financial liquidity and market performance:

Considerable empirical study has directed to the relationship between the ERP system, market performance and financial liquidity. The findings of this study indicate that applying ERP system has an impact on some financial variable and makes improving and enhancing to other financial variables.

A- ERP system plays a key role for integration of information in recent years. Despite, it has some drawbacks due to the cost and some difficulties to apply it especially in developing countries as Egypt. Applying ERP system takes long period to understand the system and knowing all aspects of it.

B- Few studies dealt with the relationship between the financial liquidity and the ERP system. To cover the research gap between the ERP system and the financial liquidity, this study focuses on covering this gap by using some measurement of financial liquidity as current ratio to determine the impact of using this system on it. Not meaning that the system did not achieve a significant impact shows it is failed system. At least, it makes improvement and enhance for the information that related to financial liquidity.

Hence, the issue of investigating the impact of applying ERP system of financial liquidity seems to be new in the Egyptian context. The study of

(Khair,pp,75, 2016) considered the first study that tried to discover the relationship between the ERP system and the financial liquidity.

On the other hand, the relationship between the market performance or market reaction and ERP system has a highly correlated affect that presented by Tobin's Q ratio. The study of (Hayes et al, pp, 11, and 2001) is considered the first empirical study that tried to discover the relationship between the ERP system and market performance and value added on the business operation.

Depending on each economy and financial crisis with different periods, the impact of applying of ERP system on financial liquidity and market performance are different in each result. The contribution has a certain value in discovering the impact of ERP system on them.

The primary concern of this study is to examine the impact of applying the ERP system on financial liquidity and market performance for firms that listed on Egyptian stock exchange. Thus, understanding the relationship between ERP system and financial liquidity and market performance that help investors to make correct and valid future decision.

Literature Review and Hypotheses Development

Studies that dealt with Financial and non- Financial Performance: classical view

Ete zady, 2011, this study examined the impact of (ERP) system implementation on financial performance of public companies over a period of four years. Sample of 79 companies of American companies that applied ERP system and the other sample of 79 companies of American companies didn't apply ERP system Research measured the financial performance through some indicators as the rate of return on assets, rate of return on investment and rate of return on sales. The study showed that (ERP) scope doesn't have a significant effect on financial performance of organizations over a four year post adoption period. It was also shown that the pre adoption differential performance is a better predictor of post adoption performance than ERP scope.

El-Khamy, 2012: This study amid to test the impact of ERP system on financial performance. Sample of 34 small size Egyptian companies in Cairo and Alexandria that worked at different fields and did not apply the system in complete way. The study used the survey instruments that were distributed to information technology managers. The performance was measured by ROA, ROI, inventory turnover and profit margin. There was positive impact of adopting ERP system, even though it was small size companies that were shown through increasing the

rate of ROI and ROA at the third year. The other measurement also was increased as profit margin and inventory turnover. The study concluded that applied ERP has a lot of benefits such as improving the relationship with customers and delivery on time.

Njihia, 2014: The main purpose of this study to investigate the impact of adoption ERP system on firm performance. In addition, understanding the all details of ERP system to gain a competitive advantage for organization ad thus, enhancing and improving the performance. Sample of 44 commercial banks listed in Kenya directory. The sample consisted of all banks that applied ERP system. The descriptive research was used to test the impact of adoption ERP system. The description consisted of statistical conclusion, frequencies and averages. In addition, using interviews, questioner survey method and measure the attitude and the behavior of the employees. The findings concluded that a positive impact of adoption of ERP system on firm performance. However, take into consideration the study confirmed that the top manger should be ready for using the new technology cause ERP system is a complex system it needs time to understand and how to deal with it.

Khair, 2016: The study aimed to test the impact of adoption ERP system to evaluate the financial performance for Thermal generation companies in Sudan. The study was depended on an inductive approach that includes the conclusion fromThe study concluded that there was a positive impact of applying ERP system on liquidity and helping to reduce the fluctuation of liquidity ratios. In addition, ERP system works on increasing the confidence of investors in the profits of the firm and improving the planning phase, which increases the assets turnover to sales the special to general and the historical approach and the descriptive approach and the descriptive approach to measure the impact applying ERP system on profitability, liquidity and assess the efficiency of performance for the enterprise.

Studies that dealt with Market Measures and Market Valuation:

Hayes, et al., 2001: The first study to examine that implementation of ERP system on market value added to business organization The study was used how the capital market answers when the firms declared that it seeks to adopt ERP system by testing abnormal market returns during the period from (1990 to 1998. There was a significance positive impact of adopting ERP system on the market reaction overall. While the empirical evidence of this study didn't

measure how actually the firms improved the financial health of adopting firms, it afforded some indictors that the capital market forecasts positive net cash flow from adopting ERP system for all exception of the small and unhealthy firms.

Ajit, et al., 2014: The main purpose of this study to investigate the adoption of ERP on the announcement of firms' stock market returns .The study examined the stock market reaction on EPR adopters and ERP vendor.

Sample of 112 firms on United States using an event study for ERP announcements for ERP by Fama – French three factors and Fama –French four factors for ERP adopters and ERP vendor piled up from Lexis Nexis Academics during the period (1999 to 2010). The implementation announcement of ERP system had a positive impact on cumulative abnormal stock returns and applying ERP system provided to improve business value in the future. On the other side the impact of applying ERP system on vendor was declined.

Melegy, 2016: Sample of (125) companies which applied ERP system for firms that listed in Egyptian Stock Exchange during the period (2011 to 2014) by using Tobin

'S Q measurement related to (book value of the value of the assets plus face value of the shares) minus (the book value of shares and deferred taxes) to(book value of the assets) to find out the impact of adopting ERP system on the firm value. Results indicated a positive impact of applying ERP system on the firm value for companies that listed in Egyptian stock exchange and therefore, it contributes to helping the investors to take the right decisions related to future investment decisions.

The current study is different from the previous studies in measuring dependent variables:

1- The current study uses new dependent variable which is financial liquidity to make direct relationship between the ERP system and financial liquidity and show its impact may be positive, negative or no significance change so the study is considered up to the knowledge of the researcher the first study to examine the impact of applying (ERP) system on financial liquidity in the Egyptian environment.
2- The current study uses new measurement to show the impact of applying ERP system on the financial liquidity, which is current ratio.
3- The current study uses big sample, apply the ERP system in complete way to show the impact of applying the system, and know the results.

4- None of the previous studies- as far as the researcher's knowledge -have not been subjected in the Egyptian environment.

Hypotheses development:

On the basic literature review, two hypotheses are developed:

Several empirical studies have confirmed the positive impact of adoption of ERP system on financial performance as the study of (Hitt and Xiaogo, 2002; Hutton, et al., 2003; EL- Khamy, 2012; and Bharathia and Rakesh, 2012).In contrast, according to (Ete zady, 2011 and Dergham, 2016) there is no significance impact of applying the ERP system on financial and operational performance. There are limited studies that confirmed the positive impact of applying ERP system on financial liquidity according to (Khair, 2016);

H1: the impact of applying ERP system on financial liquidity.

H2: the impact of applying ERP system on market performance.

Research Model $FL = B_0 + B_1 ERP_{it} + B_2 LEV_{it} + B_3 size_{it} + B_4 Grow_{it} + \varepsilon_{it}$.

$MP = B_0 + B_1 ERP_{it} + B_2 LEV_{it} + B_3 size_{it} + B_4 Grow_{it} + \varepsilon_{it}$.

Where:

FL: Financial Liquidity

MP: Market Performance

- B_0: Constant
- B_1: Coefficients of independent variable.
- $B_2 : B_4$: coefficient of control variables. .
- ERP_{it} : Application of (ERP) system for the firm i in year t.
- LEV_{it} : financial leverage for firm i in year t.
- $SIZE_{it}$: firm size for firm i in year t.
- $GROW_{it}$: Growth Rate for firm i in year t.
- ε_{it}: **Random error (residuals).**

4.1.4. Research variables:

A. Independent variable:

ERP system is an independent variable that will be measured according to (Pincuse, et al, pp, 1980, 2017) the company takes the value (1) if the company applies (ERP), and takes the value (0) in the case of non- application of ERP system.

Dependent variables:

Current assets

Current ratio= ━━━━━━━━━━━━

Current liabilities

The second dependent variable of the research study is market performance which is measured by **Tobin's Q ratio which as the following:**

Total liabilities + total market value

Tobin's Q ratio = ─────────────────────────

Total assets

Control variables:

Variable name	Variable Code	Measurements
Financial leverage	LEV	Ratio of total debt (short and long period) / total assets at the end of the year
Company size	Size	The natural Logarithm for total assets at the end of the year.
Growth Rate	GR	(Net sales of the current period – Net sales of previous period) ÷ Net sales of previous period

Descriptive statistics

Descriptive statistics provide simple summaries about the sample and the observations that have been made. It is used to describe the initial characteristics of the data and to provide background information on the data used in the study (Gujarati, pp.45, 2003).

This table describes some descriptive statistics for the variables of the study

Variables	FL	TQ	Financial leverage	Company size	Growth rate
Mean	2.21943838	1.271568079	.371343880870	2.03080499	9.30841808
Median	1.66663333	1.12383940487291	.359655833285	2.04121987	6.68315731
Std. Deviation	1.58202118	.52691904237108	.1810471732677	1.63840010339	.285323851199
Minimum	.616708482885	.632863979446	.958538397	1.773568661674	4.31678232
Maximum	6.864332560596	2.656078785831	.72863668694	2.33117738765	.867776735887
n. of observations	360				

Table No (1) presents summary descriptive statistics for the regression variables including: the dependent variable, financial liquidity and market performance and control variable: company size, growth rate and financial leverage. The descriptive statistics include: mean, median, standard deviation, minimum values, maximum values.

The number of observations are 360 (6*60) during 6 years from 2010 to 2015. Financial liquidity has a mean of (2.2) with standard deviation (1.58) with the minimum value (.616) and the maximum value (6.86); it means a huge disparity between the sample populations.

Turning to market performance, the mean and the median are (1.27%) and (1.12) respectively, with a standard deviation (.5269) and the minimum and maximum are (26.56%) and (86.8%) respectively. The mean and median for financial leverage equals (37.13%) and (35.96%) respectively with a standard deviation (18.10%) suggesting higher exposure to financial risk.

The mean and median of company size are (2.03%) and (2.04%) respectively with a standard deviation (1.6384), with a minimum and maximum values of (17.7%) and (2.33%). The mean and median of growth rate are (9.30) and (6.683) with a standard deviation (.2805) and the minimum and maximum values are (4.31) and (.8677) respectively.

Frequencies variables for Independent variable (ERP)

Companies	frequency	percent	Valid percent
Applying ERP system	198	55.0	55%
Not apply ERP	162	45.0	45%

Total	360	100	100

Table No (2) presents the frequencies of the independent variable for firms that applying ERP system are 55% and the firms that not apply the system are 45%. The total number of observations is 360. (6*60).

Correlations

Variables	FL	TQ	Financial Leverage	Company SIZE	Growth rate	ERP
FL	1	.002	-.510**	-.254**	-.065	-.74
TQ	.002	1	.83	-.060	-.068	.67
Financial leverage	-.510**	.083	1	.203**	.058	-.043
Company size	-.354**	-.060	.203**	1	-.031	.237**

Variables	FL	TQ	Financial liqudity	Company size	Growth rate	ERP
Growth rate	-.065	-.068	.058	-.031	1	.009
ERP	-.074	.067	-.043	.237**	.009	1

Notes: (**) Bold text indicates significance at the 0.01 level or better.

Table No (3) presents correlation matrix among the variables used in the analysis. Person correlation Matrix is used as the primary too to discover the correlation between variables. Given the non-normal distribution for the variables, the following discussion will focus on correlation results. The ERP system, dependent variables and control variables are in the predicted directions are statically significant at the 0.01. **Results of Regression:-**

A- Normality of residuals

The assumption states that the residual follows the normal distribution with zero mean and constant variance. To test the normality assumption study uses Shapiro –wilk w test. Appendix histogram of residuals and normal probability plot show that residuals are normally distributed. The assumption was found unfulfilled and errors did not follow the normal distribution at significant level 5%. Hence the study uses Winsorizing method in order to convert abnormal values to the closest acceptable values (Veprauskaite and Adams, pp, 232, 2013). As the study can ignore this assumption cause the sample is bigger than the number of observation (360). The study supports the results by adding another analysis is Robust least squares by M- estimation. This method is done without requiring that random errors follow the normal distribution (Leroy and Rousseeuw, pp, 25,1987).

B-Multi-collinearity

Multi-collinearity means there is perfect or exact liner relationship between some of the independent variable of the regression model of the study.

The variance inflation factors (VIF) will be checked for multi-conllinearity, which indicates a liner relationship between the potential independent variables. As the degree of Multi-collinearity increases, the estimated coefficients will become unstable as well as the standard errors. A VIF higher than 10 will lead to the conclusion that is a Multi-conllinearity (Gujarati, 2003) , where it reached its maximum value of VIF to (1.03) for all variables are less than 10. Therefore, there is no Multi-conllinerarity in the research model.

C-Hetroskedasticity

From Ancient Greek hetero "different and skedasis" if there are sub-population that have different variables from others. Here, variability could be qualified by the variance. Using white test to make sure and to validate the imposition of variability constancy, and the results showed that condition was not met. Thus, to solve this problem the study applied Robust standard error (Hoechle, pp, 289, 2007; and Holzhacker, et al., 548, 2015), the results showed the following:

Model	FL	TQ
Value	291.11	1376.04
P value	000.0	000.0

D- Autocorrelation

Autocorrelation is defined as correlation between errors of different observation that make the estimates of (OLS) inefficient and less precise. The study uses Wooldridge to discover and detect the extent of the model of autocorrelation between errors. For the first hypothesis the value is (p- value =0 .1032) which is bigger than 5% so this model has no problems. Otherwise, the second one its value is (p- value= 0.0016) and this value is less than 5% so the study applied Robust standard error to solve auto coloration problem.

4.2.4. Additional analysis to confirm from the results:

The data doesn't follow the normal distribution and there are some problems at Hetro and Auto, so the study uses anther method to solve these problem it is RSE (Robust Standard Error) in order to the most vital variables that effects on the dependent variables.

1- The results of regression analysis for applying ERP system on financial liquidity:

(Winsorizing and Robust Standard Error Method)

Independent variable	Financial liquidity						VIF
	1			2			
	Coefficient	T	sig	Coefficient	T	sig	
Constant	8.727	8.50	0.000	8.84	8.76	0.00	
ERP	-0.109	-.79	.431	-.8858	-.61	.545	1.06
Financial Leverage(w)	-4.0095	-8.99	0.000	-3.97	-8.85	0.000	1.01
Growth rate (w)	--.0835	-2.15	0.032	-.0876	-2.13	0.034	1.00
Company size (w)	-.244	-4.19	0.000	-.2472	-4.95	0.000	1.06
R^2	.3286			0.3318			
F(calculated)	26.86			12.28			
F (Test)	0.00			0.000			
Robust Standard Error	Yes(1.3035)			Yes(1.3097)			
Time effect	NO			Yes			
n. of observation	360						

Table No. (3) presents the results between the ERP system and the dependent variable by using Robust Standard Error. The results show that the R^2 is 0.3286 and F (calculated) is 26.86 at (5%), more over the study determines the time effects in order to confirm from the results and to show the relationship between the ERP system and the financial liquidity whereas R^2 is .3318 and F (calculated) is 12.28 and this results confirms that there is no impact of applying ERP system and the financial liquidity.

2- The results of regression analysis of applying ERP system on Market performance:

(Winsorizing and Robust Standard Error)

Independent variable	Market performance						VIF
	1			2			
	Coefficient	T	Sig	Coefficient	T	Sig	
Constant	1.829	5.24	0.00	1.7011	4.85	0.000	
ERP	.1038	1.81	.071	.1263	2.19	0.029	1.06
Financial leverage	.3314	2.12	.035	.3463	2.23	0.027	1.01
Company size	-.0351	1.98	0.049	-.365	-2.08	0.039	1.06
Growth rate	-.14819	1.50	.134	-.0227	-.77	0.441	1.00
R^2	0.0280			0.0630			
F (calculated)	2.55			2.62			

Independent variable	Market performance						VIF
	1			2			
	Coefficient	T	Sig	Coefficient	T	Sig	
Constant	1.829	5.24	0.00	1.7011	4.85	0.000	
F test	0.0388			0.0062			
Robust standard Error	Yes (.52247)			Yes(.51661)			
Time effect	No			Yes			
n. of observation	360						

Table No (4) provides the results of applying the ERP system and the market performance by using the Robust standard Error. The R^2 is .00280 and F (calculated) is 2.55 at (5%). Adding the time effect, R^2 is .0630 and F (calculated) is 2.26, so these results confirm that there is a positive impact of applying ERP system and the market performance.

- ## Additional support for the study hypotheses T- test

This test aims to know there is a significant difference among the companies that apply the ERP system and the companies doesn't apply the system.

		t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
FLw	Equal variances assumed	-1.624	358	.105	-9.71493318655691E-1	5.98293061756830E-1	-2.148103943492385E0	2.051173061732472E-1
	Equal variances not assumed	-1.745	271.617	.082	-9.71493318655691E-1	5.56871691822171E-1	-2.067826807184411E0	1.248401698652728E-1
TQw	Equal variances assumed	2.218	358	.027	2.850031445946617E-1	1.285107228138056E-1	3.227234830321707E-2	5.377339408861064E-1
	Equal variances not assumed	2.042	186.614	.043	2.850031445946617E-1	1.3959729743802 66E-1	9.611510116691792E-3	5.603947790726316E-1

Table No 5 presents the differences between two groups of companies which one of them applies the ERP system and the other group does not apply it. The first table gives the results of T-test for the differences between the two groups in the financial liquidity (current ratio), the results indicate for p-value as (.105) for the T-test at 5% significance level which means that there is no significant difference between the two groups in financial liquidity.

For the market performance (Tobin's Q ratio), the results indicate for p-value as (.027) for the T-test at 5% significance level which means that there is a significant difference between the two groups in Tobin's Q ratio Performance (Tobin's Q ratio).

Results and Discussion:

1. The current study aims at providing evidence from the Egyptian context on the impact of applying ERP system on financial liquidity and market performance.

2. The research model found that the ERP system has a positive impact on the dependent variable which is the market performance that presented by Tobin's Q ratio at significance level 5%.This result is consistent with the results of the following studies: (**Hitt, et al., 2002; Zhang, et al., 2012; Melegy, 2016**). However, the studies of (**Hayes, et al., 2001; Hendricks, et al., 2006; Ajit, et al., 2014**) use the market performance and capital market reaction as a dependent variable, but with other measurements as abnormal market returns , return on stock , return on appropriate bench mark and the ERP system is an independence variable and also has a positive impact on them.

3. The research model found that the ERP system has no significant impact on the financial liquidity as a dependent variable, which presented by current ratio at the significance level 5% this result is not consistent with the results of (**Khair, 2016**) which found a positive relationship between the ERP system and the financial liquidity. Moreover, the other studies as (**Ete zady, 2011; El-Khamy, 2012 Bharathi and Rakesh, 2012; Dergham, 2016**) use the company performance, financial and operational performance, and didn't use the financial liquidity as the main indictor to express the liquidity directly. In addition, the current study seeks to cover the research gap of using the ERP system in limited areas.

4. The study used anther additional analysis in order to confirm and improve the results as T- test and Robust standard Error.

5. The success of the ERP system depends on the culture of employees of the organization and the support of the senior management convicted staff of the importance of applications of information system.

6. The sectors of constructions and industrial are the most sectors that interested in applying the ERP system in the sample.

Summary and conclusion: This study figures out the impact of applying ERP system on the financial liquidity and market performance for firms listed in the Egyptian stock exchange. Multiple regression model is used with sample selection of 60 companies over a period of six years 2010 and 2015.Study results reveal that there is a positive impact of applying the ERP system on the market performance. There is no significant impact of applying the ERP system on financial liquidity.

This study includes four chapters. The first one discusses the definition of the ERP system, evaluation of this system, benefits, obstacles, drawbacks, how to apply and the selection criteria of the ERP system. In addition, cost of ERP system and methods of applying ERP system.

In chapter two, the researcher discusses the meaning of financial liquidity and the importance of it. In addition, the definition of market performance and the types of market performance. Moreover, concentrates on the theoretical background of financial liquidity, market performance and the effect of applying the ERP system on them.

Chapter 3, the researcher reviews the literature review that examines the impact of ERP systems on market performance, operational and financial performance. The researcher concludes that there is a lack of studies that investigating the impact of applying the ERP system on financial liquidity in the Egyptian environment.

In addition, there is a contradiction of the previous studies. Therefore, there is a need to investigate the impact of the ERP system on financial liquidity.

Chapter 4 discusses the research design and methodology, which includes a sample selection, the research model. In addition, includes the regression results, testing of hypotheses, descriptive statistics and future research.

Future studies:
The results of the current study contribute chances and opportunities for future research as:

1-The impact of applying ERP system and how discovering the amount and the percent of materiality.
1- Application of the ERP system on the debt ratios in the Egyptian firms.
2- Adoption of the ERP system on the governmental organizations to facilitate the flow of information.
3- The relationship between applying the ERP system and the market value added.
4- The impact of adoption ERP system on the Audit fees and audit control.

Appendix

1- Companies that included in the sample

Company Name	Sector
1- Misr Cement (Qena)	Constructions and Materials
2- Arab Cermic	
3- Suez Cement	
4- Acrow Misr	
5- Tintan Cement	
6- Tourah Cement	
7- Misr Conditioning (Miraco)	
8- Rubex Plastic	
9- South Vally Cement	
10- Arab Valves	
11- El-EZZ	
12- Lesico	
13- Delta Construction	
14- Egyptian For Building Materials	
15- Modern Water Proofing	
16- Mena Pharm	Healthcare and Pharmaceuticals
17- Nozha Hospital	
18- Glaxo Smith Line	
19- Epico	
20- Alex New Medical Centre	
21- Advanced Pharmaceutical Packaging	
22- Telecom Egypt	Telecomunications
23- Orange	
24- Orascom Telecom	
25- Ascom Co For Mining	Basic Resources
26- Arab Aluminium	
27- EZZ Steel	
28- El –Ezz Al Dkhella Steel Alex	

#	Company	Category
29-	Egyptian Electrical Cbbles	Industrial goods and services automobiles
30-	Al Sweedy	
31-	Al Ahram Printing and Packaging	
32-	Arab Engineering Industries	
33-	Delta For Printing and Packing	
34-	Egytransport	
35-	Golden GTWL	
36-	Oriental Waves	
37-	Arab-Polvara Spinning and Weaving	
38-	El Nasr-Transformers	
39-	Mardivie – Oil Service	
40-	Suez Bags	
41-	Engineering Industries (ICON)	
42-	Balm Helis	Real estate
43-	Engineering Consult and Development	
44-	National Real Bank Estate	
45-	Mena Touristic and real estate	
46-	Cairo Investment and Development	
47-	International For Investment and Development	
48-	Zahraa Maadi Investment	
49-	Egyptian for Housing and Development	
50-	Sidi Krir For Chemicals	Chemicals
51-	Egyptian Financial and Industrial	
52-	Samad Misr Egyfery	
53-	Kafr El Zayat Pesticides	

54-	Delta Sugar	Food and Beverage
55-	Arab Dairy Product	
56-	Egypt Starch and Glues	
57-	Cairo Poultry	
58-	Trans Ocean Tours	Travel and Leisure
59-	Remco For Tourism	
60-	Egyptian For Tourism Resort	

2- The Table Of the Exchange Rate from US To Egyptian Pound:

Year	Exchange Rate
2009	5.47
2010	5.79
2011	6.02
2012	6.25
2013	6.25
2014	7.14
2015	7.80