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The Effect of ERP Systems Implementation on Organizational Performance at Small and Medium Companies in Amman - Jordan

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Abstract: ***Enterprise Resource Planning (ERP) systems implementation is widely accepted supporting information and technology-based tool globally. It is found quite potentially equipped software system which has many combined sub-systems to coherent the entities' strategic as well as operational meant efforts all effective and result oriented. Hence the small and medium companies, with lot more to bring up their capacities in a level to utilize ERP even worth effective, also seem finding it effective in enhancing their organizational performances. In this research study it was focused on to find out the ERP system implementation on small-medium companies in Amman –Jordan, to find out the hurdles and problems facing by small-medium organizations in Amman –Jordan by implementing the ERP system, to find out the relationship and effectiveness between of ERP system implementation on small-medium companies in Amman –Jordan with organizations performance, to find out the relationship and effectiveness of ERP system implementation on small-medium companies in Amman –Jordan with operational performance and to find out the ratio of business organizations in Amman –Jordan those are using ERP system to evaluate the performance of their work. In a quantitative research the descriptive research method of the study along with the deductive reasoning design was adopted. The population of the study was the management and the employees working in SMEs in Amaan-Jordan. Random sampling was adopted to reach the target respondents for the data collection. The collected data was analyzed in SPSS for the correlation and regression that showed that the ERP system implementation was effective in organizational performance in SMEs in Amaan-Jordan, as its implementation could coherent the operations, reduce time taking operations and brought the strengthened coordination between the companies and the customers. However, ERP effectiveness can be further enhanced if all management and implementation staffs are provided with the most frequent capacity building opportunities on ERP systems implementation, while making it as the part of their long-term business strategies and more researches are required to make it easy and accessible to all the entities worldwide.***

Keywords: ERP, SME's, Jordan, ERP SME's Jordan

1. Introduction

Enterprise Resource Planning (ERP) systems are performed through software. The system has very useful capacity in bringing the organizational business performances with all-time effective management. It can effectively manage the enterprise performance. The enterprise performance may include the activities like, project management, supply chain operations, procurement, risk management and compliance and accounting. Besides that, ERP has helping capacity in planning, budgeting, reporting and predicting on companies' financial outcomes. The enterprises use this software enriched with ERP systems for data integration under their several departments all together at one place. The software restricts the data duplication; therefore, the processed data is ensured at one click. Hence the ERP systems have got exceptional recognition in all sizes companies and adopted by thousands of entities around the world [1].

The ability of ERP systems to integrate organizational processes and information on various applications through a central database resulted in the introduction of this system as a prerequisite for success in the 21st century [2].

ERP is more important in new era as it is effective in cost reduction and obstacles removal [3]. So as the operational efficiency of the companies improved through ERP systems implementation [4]. ERP is further identified as tool for financial in an industry like insurance [5]. It is also determined to have the ERP for project management practices in system projects [6]. The illustrative case study concluded that ERP had been effective in systems integration [7].

A centrally managed database is in use in ERP systems implementation of an organization. It combines all the business processes at one place and brings reduction in manual work and flow of the information that could contain some labor. The organization has privilege to see its real time performance in terms of its productivity and profitability by the means of the dashboards that the ERP systems offer in software. The dashboards contain concise data at one place under various departments' processes of the business. ERP systems make it easy for all the departments to share and visualize the data as an organization. It ultimately systemizes the workload of all the employees in reduction of time usage and enhances the organizational capacity to develop the business goals scientifically [8].

Integration of business activities are made easier to handle through ERP in practices [9]. Along with it, it dynamically modifies the patterns of the working within organizations [10].

The nature of an ERP system is to automate business processes thoroughly, divide shared information within the organization and, more importantly, produce real-time information or data [11].

An ERP system is a series of business modules interconnecting an organization's functional areas such as finance, accounting, development, buying, and customer service into a tightly integrated single system with a common platform for enterprise-wide information flow [88].

ERP plays a role in changing the customer's demand for new approach to product development cycles [12]. The ERP system is a combination of advanced technologies and best business practices. It enables an organization to achieve its specific business objectives and gain a competitive edge by providing a common platform for integrating all aspects of the business [13].

Competence integration through major functions within department organization based on software solution is entirely the burden of ERP system. Hence, the aim is therefore to adapt departments by means of software-related harmonization between suppliers and customers to deliver the right product at the right place at the right time and reduce the gross cost [14].

Small and Medium Enterprises (SMEs) have a different structures and management in comparison to the large industries. In implementation of Enterprise Resource Planning (ERP) systems the size of a company matters [15]. Enterprise Resource Planning (ERP) systems, in larger scale industries like the ones dealing with constructions, have effectively been used. These systems functioning in such industries where the organizational responses are widely spread in dealing with various kinds of stakeholders who are associated to clients' management, materials flow, equipment's supply and maintenances and vendors interactions. To deal with the management affairs for improved organizational performances on such a higher scale ERP system are being used to enhance the organizational capacities in terms of improved responsiveness in relation to customers, strengthened supply chain partnerships, enhanced organizational flexibility, improved decision-making capabilities and reduced project completion time and lower costs. On the broader scale within the industries the operational management, human resources management and financial management is being done through designed information systems for effective organizational performance. ERP effectiveness through one time entry of informative data is being used to make it available within the organizational access [16]

Enterprise Resource Planning (ERP) system implementation in another industry well spread on higher scale in association to food packaging industry has also been researched beneficial. It is discussed in the research that took place on "The benefits of Enterprise Resource Planning (ERP) system implementation in Dry Food Packaging Industry" the benefits include regarding the performance of suppliers through a helping hand in strategic planning. The performance on suppliers gets improved through the access on the data from sales and marketing business processes in ensuring the products supply in completion of inventory department record. The improved suppliers' performance is ensured the effective use of the software in ERP by keeping the managerial look on supply and demand trends and in provision with timely raw material availability. In broader strategic efforts the tactical benefits of using ERP systems are encouraged in the dry food packaging industry for promoting ERPs implementations among the suppliers in the industry at the larger scale. Ultimately its implementation is benefited in suppliers' performances that also lead to the company's operational and financial performances beneficent in making the implementation of ERP systems [17].

Many studies have looked at factors related to the ERP implementation. These include top management support and commitment ([18]; [19]; [20]), effective project management and team ([21]; [22]; [23]; [24]), business process reengineering and standardization ([25]; [19]; [26]), vendor support and employees training ([27]; [19]; [28]; [29]). Strategic implication on firm performance and competitiveness has also been studied ([30]; [31]; [32]; [33]). The implementation of ERP systems has been consistency linked to cost reduction and productivity gains ([34]; [35];[36]; [37]), development of a plan for ERP acquisition and implementation ([19]; [26]; [20]), customer service improvement ([36]; [27]; [38]; [39]) and firm performance ([40]; [41]; [42]).

Small and medium enterprises have been having productive adoption of ERP with certain measures [43]. The effectiveness of ERP with a life cycle model in SMEs has remained reinventing from activating to withdrawal [44]. ERP implementation with effective use in SMEs is possible with proper structure of human capital development [45]. SMEs E-business behavior is aligned to their strategic adopting of ERP in implementation [46]. ERP system implementation for a means to plan and manage the resources was an accomplished practice in an organizational performance [47]. ERP has a past in implementation, but it has grown up to have its implementation in all times [48]. ERP simultaneously has impact over the intellectual capital in improving organizational performance [49]. More research in the field of ERP would pave the for-success rates in its implementation [50]. It is beneficial in accounting perspectives of a company [51]. Arab countries find it as useful tool [52]. Indonesian experience of ERP implementation suggests positives in SMEs [53]. Enhanced practices of ERP require maintenance practices as it belongs to the technology [54]. ERP has different methods to have its proper implementation [55]. Hence ERP is systematic, and it requires empirical approaches [56].

A research study on the influencing factors of Small and Medium Enterprises (SMEs) in implementation of Enterprise Resource Planning (ERP) revealed that the implementation of ERP systems was extensively larger in scale in comparison to the ERP systems implementation in larger capacity companies. The factors in effect of ERP systems

implementation in SMEs were seen in relationship to the most fundamental structural elements are found in any SME. Hence their impact on the implementation cycle of ERP was widely analyzed under the review of the available literature from case studies on four SMEs those implemented the ERP systems in their operations. The most affecting among the factors was the SME's type of ownership along with limitation in resources to run their businesses. When it came into the operations phase the ERP cycle implementation arose as bumpy patchy coping with different kinds of challenges in it. Hence it was recommended for SMEs through the study to improve their employees' capacity in using the software more effectively with enhanced knowledge and trainings along with their focuses on ERP and SME correlation towards all the process a business possess and the fundamentals of marketing within both of them [57].

Since there has been continuous processing in effective development of sources for making Small and Medium Enterprises (SMEs) more effective entities on their productivity and profitability. Enterprise Resource Planning (ERP) systems implementation in running the SMEs effectively is widely seen as an encouraging factor in the process. Hence it has tackled with various kinds of challenges that have reportedly caused unsuccessful outcomes from the direct implementation of ERP in SMEs. The challenge with wider acceptance is associated to the company's ownership capitals and the employee's capacity in the running the software effectively. Therefore, SMEs have begun to look for new ways of profiting themselves in making the most of ERP systems availability. And to do so different models of adopting ERP in SMEs is encouraged. Open Source is one of the new models adopted by SMEs to manage their smaller level business through by implementing ERP. It has gotten significance in being part of the process. However, the challenge related to the ownership of ERP systems in this model is debited and outsources information management process confidentiality is also under discussion. Apart from these ones the SMEs have seemed making this open source of ERP a useful one in which a software firm having all required capacity in running the systems effectively, deals with all the information management of the SME as an outsourced area in its processes of doing business [58].

Small and Medium Enterprises, which are quite numerous in the economies of most countries, need to continue their activities in an intense competitive environment in order to grow and contribute to the national economy. Efficient and low cost production, cheap import and affordable export of SMEs depend on many factors [85]. Especially effective management of material and human resources is very important.

In today's world where international markets are increasingly globalized, both large and small and medium sized enterprises; they pursue strategies to expand their activities abroad with the aim of seeking new growth opportunities, overcoming problems in domestic markets, evaluating external opportunities, and creating alternatives against crises. The success of these strategies requires a good organization, sufficient knowledge, experience and capital, qualified workforce and competitiveness, in short, the efficient use of resources [86]. At this point, Enterprise Resource Planning (ERP) stands out as an important dimension that enables the efficient use of business resources such as labor, machinery and materials.

On the other hand, the main factor that reveals whether the strategy determined by an enterprise and its applications related to this strategy contribute to the development of the enterprise is the performance criteria [87]. Therefore, it is important for enterprises to measure the relationship between ERP implementation and organizational performance.

The world has recognized Small and Medium Enterprises (SMEs) as a major contributor in the development of the economy. They have managed to increase the employment opportunities through job creations with overall all kinds of positivism on accumulative Gross Domestic Production (GDP) of the countries globally. SMEs in Jordan are 98.5% of all formally registered companies in the country. They have been able offer 60% formal jobs under the overall country's employment ratio that has ultimately reduced the unemployment burden. Moreover, they have been able to contribute up to 50% in GDP of the country. On the other hand, SMEs in Jordan have been coping with several challenges in the shape of internal human and financial resources lacking. Besides that, skills and technology are widely spread challenging areas in the country. Therefore, their focus has congregated around limited the production of traditional items and low value-added goods having low quality in them. Quality control system with skills barriers has been cause of the obstacles in production quality production and services. Technology has also been least invested area in Jordan's SMEs [59].

Enterprise Resource Planning (ERP) implementation stepped in Amman in Jordan in 2000. Beta, an American firm, worked in Jordan after Jordan had signed a MoU of free trade with America. It hired a North American software company Omega and its firm eMAG to run ERP in inspiration from American companies who had been using it in their businesses to have smooth business engagements with American companies on import and export of the goods. It was focused on human resources, supply chain and financial modules [60].

The business environment is changing dramatically, and organizations must improve their business practices and procedures in order to remain competitive on the market. Organizations within all departments and functions upgrade their capability to generate and communicate accurate and timely information. The organizations those successfully implemented the ERP systems gathering the benefits of integrating the organization's work environment, standardized processes, and operational benefits [61].

1.1. Problem Defined

This research study has a vibrant scope for all the stakeholders who are associated to the Small and Medium

Enterprises (SMEs). The study does not congregate over the first line management of the organization it has a widespread approach that touches the overall performances based on the effective use of Enterprise Resource Planning (ERP) systems. From the investors to the users of the software all are supposed to be benefitted through the findings of this study. All the line managements in all the departments which have their specific roles in any organizational performance simultaneously they have ERP in use would find this study a useful means of information because; the study is purely based on the prompt requirements of the current era in the field of businesses.

1.2. The Importance of the Study

In this research work the study has taken place to explore the effect of the Enterprise Resource Planning (ERP) systems implementation in organizational performance on Small and Medium Enterprises (SMEs) in Amman-Jordan. ERP systems utilization has widely been researched and witnessed in the world and in Jordan as well. It has been reported with both sides of its success and failure. Owing to its mix reactions on the sides of businesses, this research had the following key areas were to be explored upon to find out the ERP system implementation on small-medium companies in Amman –Jordan, to find out the hurdles and problems facing by small-medium organizations in Amman –Jordan by implementing the ERP system, to find out the relationship and effectiveness between of ERP system implementation on small-medium companies in Amman –Jordan with organizations performance, to find out the relationship and effectiveness of ERP system implementation on small-medium companies in Amman –Jordan with operational performance and to find out the ratio of business organizations in Amman –Jordan those are using ERP system to evaluate the performance of their work.

1.3. Research Objectives

- To find out the ERP system implementation on small-medium companies in Amman – Jordan.
- To find out the hurdles and problems facing by small-medium organizations in Amman – Jordan by implementing the ERP system.
- To find out the relationship and effectiveness between of ERP system implementation on small-medium companies in Amman –Jordan with organizations performance.
- To find out the relationship and effectiveness of ERP system implementation on small-medium companies in Amman –Jordan with operational performance.
- To find out the ratio of business organizations in Amman –Jordan those are using ERP system to evaluate the performance of their work.

2. Literature Review

2.1. Enterprise Resources Planning

Enterprise resource planning (ERP) is a mechanism used by organizations to control and organize the essential parts of their companies. Many ERP software applications are important to businesses because they help them incorporate resource planning by combining all of the processes required to operate their businesses in a single structure. Planning, ordering inventory, sales, marketing, finance, human resources, and more can also be combined with an ERP software framework. All of the processes required to operate a business can be incorporated into ERP software. Over the years, ERP solutions have evolved, and many are now usually web-based software that users can remotely access. If a business does not carefully enforce it, an ERP system may be counterproductive [62].

ERP stands for preparing for business capital, but what does ERP mean? The best way to describe ERP is to think about all the core processes necessary to run a business: finance, HR, development, supply chain, services, procurement, and others. ERP incorporates these processes into a single structure at the most basic stage. But it is anything but simple to modern ERP systems. To provide knowledge, visibility, and productivity in every area of a market, they use the latest technologies, such as machine learning and artificial intelligence (AI). The ERP suite consists of numerous enterprise resource planning applications that communicate with each other and share a database. Usually, each programmed (or ERP module) focuses on one business field. To satisfy your needs, you may combine various modules. Common starting points are finance, human resources, distribution, and logistics. Modules unique to sectors, from manufacturing to retail, also exist [63].

2.2. Historical Background of ERP

The first predecessor to ERP software can be traced back to the 1960s when it was used as a method for controlling inventories and quality control in large manufacturing companies. Since then, it has expanded to include multiple sectors and job positions, providing unprecedented integration of radically different departments. This feature is what ERP software has come to be defined as we know it today. ERP systems are like the most commonly deployed technological solutions. They were first innovated to solve a basic human business issue. In this case, maintaining the authenticity of knowledge across fast growing companies that would have been previously impossible. As the form and function of the company has evolved over the last few decades, so has the software built to serve its purposes, in several respects, the history of ERP systems is closely related to the remarkable creation of computer hardware that characterized most of the technological space in the latter half of the 20th century. It seems that every decade has brought its own new permutation of ERP applications with the latest innovations [64].

The term ERP was first used by the Gartner Community in the 1990s, but the company's resource planning programmers have deep roots in the manufacturing sector and can trace their history back to the 1960s. Meantime, manufacturers wanted a better way to plan, monitor and maintain their inventories. Basic software solutions, known as MRPs or Material Requirements Planning systems, have been developed to meet their needs. These systems helped

manufacturers track inventory, reconcile balances, and provided very simple production, purchasing and distribution functions. Over the 1970s, more and more manufacturers began to adopt MRP systems, and the systems themselves became more sophisticated. By the 1980s, MRP systems had developed into what became known as MRP II or Manufacturing Resource Planning systems. More manufacturing processes have been applied to the initial MRP systems, and these MRP II systems have improved features and have been better able to manage scheduling and production processes. The first real ERP systems came into use in the 1990s. These structures have further evolved beyond the simple inventory management and production processes of previous versions to include other divisions and roles, such as accounting, finance, and sales. These systems set the stage for ERP solutions, as we have come to know them today, by combining various processes and departments into one system [65].

2.3. Strategic Benefits of Enterprise Resource Planning

ERP systems provide enormous strategies to create knowledge to companies more frequently in a structured, centralized, and cost-effective way. For those businesses that can effectively incorporate these programmers, several industry studies laud the advantages of ERP and its various benefits. The ability to integrate business processes is one of the key goals for ERP installation. It has also been found that ERP is effective in reducing inventory costs, improving efficiency, and increasing profitability. Other economic consequences of ERP contain dramatic inventory declines, breakthrough reductions in working capital, ample consumer desires and needs knowledge, and the opportunity to view and handle the expanded supplier, partnership, and customer organization as an interconnected whole. Effective incorporation of the company's internal operations does not inherently ensure the performance of the business. End-to - end mechanisms that pass data from application to application cannot increase cost efficiency and performance on their own. The capacity to use data to drive the organization is the secret to effective implementation. Performance metrics must be created to calculate the ERP system's effect on the business. An ERP system that is not strategically linked to the supply chain has been suggested to lack the capacity to provide the type of business intelligence required to develop the company. It is also recommended that top management look past the technological aspects of the project to the organizational criteria for a good execution. It is consistently recognized as the most significant success factor in implementing the ERP method. Many managers have a hard time realizing that implementing ERP is not just downloading a package. It is not a sprint, but a long road of fine-tuning, upgrading, and continuous learning. It may then lead to a feeling of resentment and rage at the system and, in some instances, utter abandonment. It can also be very frustrating for workers as the project appears to be 'almost ending.' It is often thought that the small quantities of information technology (IT) workers in smaller companies are insufficient for an ERP projects stringent and detailed IT training and development requirements. Consultants are expected to help meet the needs of projects in certain instances of ERP implementation [19]

2.4. ERP Implementation in JORDIAN SMEs

Effects of the introduction of the ERP framework on the output of Jordanian small and medium-sized manufacturing companies are explored the impact of the implementation cycle of the ERP system and staff training on the ERP system as a moderating variable that affects the relationship between the implementation of the ERP system and the organizational performance of small and medium-sized enterprises in the Jordanian manufacturing sector. A total of 66 questionnaires were returned from 80 questionnaires based on the results. This corresponds to a functional response rate of 82.5 per cent. The survey was distributed to managers (leading positions) who acquire knowledge of the ERP method in their businesses. Structural Equation Modeling (SEM) techniques and multi-group analysis have been used to test the research hypothesis. The most important findings of the study were: The integration of the system and the information quality factors has a direct and important impact on the efficiency of the organization. The consistency of the ERP system, the precision of the information and the time taken to provide the information did not have the same direct effect on the success of that organization. The implementation cycle of the ERP moderates the effects of the implementation of the ERP on the efficiency of the ERP. Training workers on the use of the ERP framework moderates the effects of the application of the ERP on the performance of that organization. The study recommends that small and medium-sized manufacturing enterprises adopt and incorporate the ERP framework at the best possible stage, since it has a direct positive impact on its efficiency [66].

2.5. Organizational Performance

The future success of a company depends on its operational efficiency, which means its ability to successfully execute strategies for achieving institutional objectives. A variety of variables are organizational results, such as business model productivity, efficiency and production. The success of any company depends to a large extent on the degree of competence that its leaders possess when it comes to executing strategies. The nature of leadership, as a conditional arrangement, that occurs between the manager and his or her followers. Given that there are often challenges to achieving organizational objectives, it is critical that the strategies used by leaders be versatile enough to accommodate change. The success of the organization also depends on its workers, who are a vital part of the organization and form a team that works towards achieving the objectives of the organization. The idea of leadership is also integrated into a virtual team. Virtual teams are set up by leaders to facilitate the accomplishment of a particular objective. In particular, research indicates that virtual teams cannot function despite leadership effectiveness. Cognitive maturity in both teams and leaders is often considered essential for successful organizational efficiency. Organizational success and management prerequisites are

associated with mental, cognitive and emotional intelligence (EI) transformational leadership, special test as leaders' ability to concentrate on creativity and inspire it among his or her team members. This is also pointed to as the leadership of the Guideline and relies too heavily on the leadership, where leaders understand how to impart some leadership powers on team members and give them space to pursue new ideas. Leadership is significant element in the performance of any organization. Based on the suggested paradigm, leadership skills can be strengthened through the application of cognitive, social and EI skills. Both, in combination, assess the success of the leader; they also include metrics that could more quickly classify successful leaders [67].

2.6. Developing Control

Though you do not want to micromanage your staff, you cannot leave them unsupervised if you want to optimize your operational performance and productivity. Creating clear management controls that including strategic priorities, organizational policies and employee guidance. They will allow you to guide, rather than restrict, the activities of your employees. Organizational control involves the establishment of regulations, guidelines, policies, limits, or other protocols for the management of the work and processes of employees and departments. These controls can include the establishment of rules or procedures for financial transactions, employee conduct and unique policies for all or particular departments. Control may rely on the individual employee implementing the instructions or may require several parties to consent to an action. For instance, on financial controls in an organization the common purpose of internal business control is to govern financial procedures. This helps to enhance interactions, enables managers to assess if their activities exceed annual expectations and avoids fraud and error. These controls involve encouraging each department head to send and review an overall budget, setting boundaries on who can write checks, requiring major expenditures to be reviewed and approved by management, performing regular audits and conducting regular budget variance analyses to detect possible issues before they get out of hand. Financial controls can also require the preparation of daily reports, such as cash-flow and profit-and - loss statements, and labor, overhead and production cost reports [68].

2.7. Process Development

The conventional method of business process creation is by developing a comprehensive model of a business process in question, obtaining an IT-system to support it, and then implementing it in the organizational practice. Acquiring a device can be achieved by designing and manufacturing it by the company itself, or via commissioning it to someone else. Alternatively, a standardized system may be purchased and configured according to the business process model that has been developed. The conventional approach has a range of risks that become apparent only during the most recent phase of the implementation of the system in organizational practice, e.g. when it becomes clear that the system does not suit the company and/or the people who work in it. These threats may be remedied by an agile process to the improvement of business operations. In the agile process: (a) the phases of process modeling, IT system design and production are combined into one, and (b) a sequence of smaller development cycles are used instead of using one main cycle. The paper addresses what is needed for the agile approach to be applied and in which business circumstances the agile approach is most suitable, Examples of tools to promote agile development are discussed and analyzed. The findings presented in the paper were achieved on the basis of an information conversion viewpoint along the lines suggested by Nonaka in the SECI model. The alteration of this model was used to know the implications and focusing on a specific process creation strategy [69].

2.8. Improved Lead Time

Lead time is the period of time that is available from the beginning of the process to the end of the process. Companies evaluate lead time in production, supply chain management and project management during recognition process, processing and post-processing processes. They can assess where inefficiencies occur by measuring findings against existing benchmarks. Lowering lead time will optimize processes and boost efficiency, increase production and revenue. On the other hand, longer lead times adversely impact sales and production processes. Lead time determines what time is taken to complete the process from start to finish. In manufacturing, lead time is also the time that it takes to manufacture and deliver the product it to the customer. Factors that can have an effect over time include lack of manufactured goods, transport failure, labor shortages, natural catastrophes, and operator mistakes. In some situations, businesses can increase lead times by introducing automated stock refilling and Just-in-Time (JIT) strategies [70].

2.9. Inventory Controls

Investments by a business in inventory are typically high and can be made up of several product items that can be easily stolen and resold. If the inventory includes only raw materials, it is important to ensure that the manufacturing processes using it do not run out of materials. This means that you need to enforce a variety of controls, either to deter fraud or to ensure that the production process does not run out of inputs. Below are a variety of main controls to be considered for your inventory expenditure [71].

Inventory management, also referred to as stock control, is the method of ensuring that appropriate amount of supply is available to the organization. The activity, with sufficient internal and output controls, ensures that the business can satisfy consumer confidence and making this determination firmness. Effective inventory management includes data from sales, reorders, delivery, warehousing, storage, receipt, service quality, risk mitigation and efficiency. According to the "Longitudinal Small Business Survey" 2018, almost half of small businesses do not even monitor their inventories on books. Inventory management makes the greatest amount of benefit from the least amount of inventory expenditure

without impacting customer satisfaction. Done right, it helps businesses to determine their current position with respect to assets, account balances and financial reports. Inventory management may help prevent problems, such as out-of-stock (stock-out) cases. Supply chain management (SCM), which controls the movement of raw materials, products, and services to the point where the business or consumers purchase the goods, is an important part of inventory control. Warehouse management also falls firmly into the inventory control arena. This process involves the incorporation of product coding, reorder points and reports, all product information, inventory lists and counts and methods for sale or storage. Warehouse management then synchronizes sales and orders on hand. Inventory control is a higher-level concept that means the entire process of purchasing, storing, and profiting from your goods or services. Because when inventory control and inventory management may appear to be synonymous, they are not. Inventory management controls whatever is in the warehouse. Inventory control is wider and controls it all from whatever is in the warehouse to whether the inventory is stored and the final stop of the item. Inventory control practices and procedures should involve much more than finished and raw material [72].

2.10.Conceptual Framework

Researcher adapted all variables from [73]. Developing control adapted from [74], Process Development adapted from [75], Improved Lead Time adapted from [76], Inventory Control adapted from [77] and Operational Performance adapted from [78].

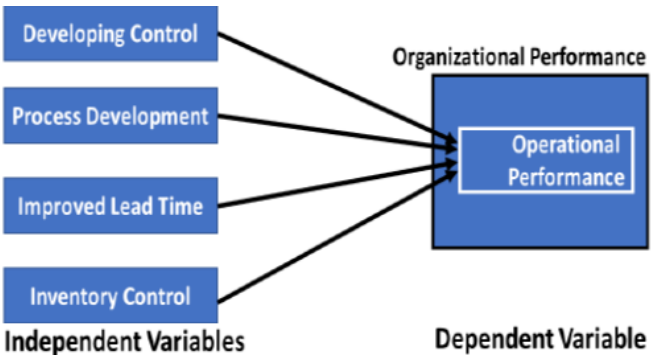

Figure 1: Conceptual Framework

2.11.Hypotheses

- H1: Developing waste reduction measures will have a significant impact on the operating efficiency of the company.
- H2: Process development by ERP has a major impact on the operational efficiency of the company.
- H3: Management of lead time by ERP has a significant impact on the operational efficiency of the company.
- H4: Control of inventory through ERP has a significant impact on the operational efficiency of the company.

3. Research Methodology

3.1. Introduction

This research study revolved around the organizational performance at small and medium enterprises in Amman-Jordan with a focus on the implementation of the ERP systems with effects on them.

This study's key objective was to explore a number of issues about the strategic and tactical impacts on the introduction of ERPs [79]. The study was based on the investigative descriptive method. In this research, it is generally followed to check the validity of the data and to provide with a more detailed interpretation of the analyzed data [80]. The descriptive analysis was the research method, which has certain objectives for a population, its size and certain ingredients [81]. The descriptive research method is applied to analyze in depth each demographic aspect of this study, and to determine its reasons and potential impacts.

3.2. Target Population

The population target of this study was small-medium companies, and this population represents the majority of business in Amman – Jordan. And held a lot of study in this particular population but in fact these studies have contrast to measure or find out the relation between ERP implementation and organizational performance. So, this study was conducted to find out of this problem.

Research population is focused on people or objects targeted for the certain research study and therefore they fall in query. It is the large collection of people or objects and hence it is finite or infinite in some or other cases. In the research scenarios the population has to be similar in characters for the certain specific designs of the research. The individuals or objects are of common binding trait [82].

3.3. Sampling Size

A survey, questionnaire, and sampling allow the investigator to generalize population observations and responses. A sample refers to a subset of the population, however this subset is only beneficial if the wider population is correctly described and depicted [83]. The sample size in a survey is the amount of responses, answers or replicates to be included in a statistical sample of a researcher [84].

According to the official emails received from Amman Chamber of Commerce and Amman Chamber of Industry, the number of Small-Medium companies in Amman – Jordan is 47,587. By using the below equation [80], the sample size required for this study is 269 responds.

$$\text{Sample size, } n = N * \frac{\frac{Z^2 * p * (1-p)}{e^2}}{[N - 1 + \frac{Z^2 * p * (1-p)}{e^2}]}$$

Where N (Population Size) =47,587, Z (Confidence level) =1.645, e (Margin of Error) =0.05, and P (Sample Proportion - uncertain) =0.5.

3.4. Research Instruments

The tool for the data collection of this particular work was adopted from the previous research work by [73]. It consisted of closed ended questionnaires. The questionnaires were divided into two parts. The first part questionnaire was about the general and demographic information on sampled SMEs and the staff. It was made on three Likert scale. The number of close questions in this part were 15 questions. The second part of the toll consisted of 29 questions. They were made on five Likert scale. They all were about unfolded areas of the variables based on objectives and hypothesis of the research work.

4. Results and Discussions

The researcher discusses as below the most important statistics:

4.1 Number of Employees

Table 1: Number of Employees

	Frequency	Percent	Valid Percent	Cumulative Percent
1-19	21	7.7	7.7	7.7
20-49	97	35.5	35.5	43.2
50-100	102	37.4	37.4	80.6
100 +	53	19.4	19.4	100.0
Total	273	100.0	100.0	

This analysis results table for item No. 1 shows that the companies with a full manufacturing process resulted as: full process; Frequency 124. Percent 45.4. Valid Percent 45.4 and cumulative percent 45.4. Sub-contractor; Frequency 21. Percent 7.7. Valid Percent 7.7 and cumulative percent 53.1. Non, Frequency 128. Percent 46.9Valid Percent 46.9 and cumulative percent 100.0. Total; Frequency 273.Percent 100.0. Valid Percent 100.0. The data analysis and its interpretation on that that the companies with a full manufacturing process resulted that the average of the respondents responded on Non option and secondly on full process option. Hence the opinion remained most with the third attribute for the item.

4.2 ERP system availability

Table 2: ERP system availability

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	273	100.0	100.0	100.0
Total	273	100.0	100.0	

This analysis results table for item No. 3 shows that the companies implementing ERP system resulted as: Yes; Frequency 273. Percent 100.0. Valid Percent 100.0 and cumulative percent 100.0. The data analysis and interpretation for the item on if the companies implemented the ERP system had hundred percent positive results.

4.3 Type of ERP System

Table 3: Type of ERP System

	Frequency	Percent	Valid Percent	Cumulative Percent
SAP	27	9.9	9.9	9.9
SAGE	7	2.6	2.6	12.5
PeopleSoft	9	3.3	3.3	15.8
ORACLE	30	11.0	11.0	26.7
Quickbooks	43	15.8	15.8	42.5
Microsoft dynamics	10	3.7	3.7	46.2
MYSQL	31	11.4	11.4	57.5
Accflex	30	11.0	11.0	68.5
Onyx	16	5.9	5.9	74.4
Al amen	44	16.1	16.1	90.5
ODOO	10	3.7	3.7	94.1
Syspro	7	2.6	2.6	96.7
Infor	9	3.3	3.3	100.0
Total	273	100.0	100.0	

This analysis results table for item No. 4 shows that the ERP systems companies had resulted as: SAP; Frequency 27. Percent 9.9.Valid Percent 9.9 and cumulative percent 9.9.SAGE; Frequency 7.Percent 2.6.Valid Percent 2.6 and cumulative percent 12.5.Peoplesoft; Frequency 9.Percent 3.3.Valid Percent 3.3 and cumulative percent 15.8.ORACLE; Frequency 30.Percent 11.0.Valid Percent 11.0 and cumulative percent 26.7.Quickbooks; Frequency 43.Percent 15.8.Valid Percent 15.8 and cumulative percent 42.5.Microsoft dynamics; Frequency 10.Percent 3.7.Valid Percent 3.7 and cumulative percent 46.2.MYSQL; Frequency 31.Percent 11.4.Valid Percent 11.4 and cumulative percent 57.5.Accflex; Frequency 30.Percent 11.0.Valid Percent 11.0 and cumulative percent 68.5.Onyx; Frequency 16.Percent 5.9.Valid Percent 5.9 and cumulative percent 74.4.Alameen; Frequency 44.Percent 16.1.Valid Percent 16.1 and cumulative percent 90.5.ODOO; Frequency 10.Percent 3.7.Valid Percent 3.7 and cumulative percent 94.1.Syspro; Frequency 7.Percent 2.6.Valid Percent 2.6 and cumulative percent 96.7.Infor; Frequency 9.Percent 3.3.Valid Percent 3.3 and cumulative percent 100.0.Total; Frequency 273.Percent 100.0.Valid Percent 100.0. The data analysis and its interpretation for the item that the ERP systems companies had were responded that Al amen was among the frequently used system and SAGE with Syspro were the least used systems among responding companies.

4.4 Reliability Analysis

Table 4: Reliability

Reliability Statistics		
Variable	Cronbach's Alpha	N of Items
Reliability for Developing control	.892	12
Reliability for Process Development	.865	5
Reliability for Improved lead time	.857	5
Reliability for Inventory Controls	.796	3
Reliability for Operational Performance	.889	6
Overall Items	.928	31

This table reflects the reliability statistics of all items are checked through Cronbach Alpha and value is 0.928 that reflects items have excellent internal consistency.

4.5 Correlation Analysis

Table 5: Correlation

		DC	PD	ITL	IC	OP
Developing control (DC)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	273				
Process Development (PD)	Pearson Correlation	.446**	1			
	Sig. (2-tailed)	.000				
	N	273	273			
Improved lead time (ILT)	Pearson Correlation	.462**	.546**	1		
	Sig. (2-tailed)	.000	.000			
	N	273	273	273		
Inventory Controls (IC)	Pearson Correlation	.252**	.473**	.428**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	273	273	273	273	
Operational Performance (OP)	Pearson Correlation	.366**	.434**	.401**	.434**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	273	273	273	273	273

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

The above table reflects the relationship among variables; this research has four independent variables and one dependent variable, Firstly the relationship between developing control and process control is moderate positive relationship 0.446, while the relationship of developing control with improved lead time is also moderate positive relationship 0.462, developing control has weak positive relationship with inventory control 0.252, and having positive moderate relationship with operational efficiency 0.366.

Secondly the relationship between Process Development with Improved lead time is strong positive relationship 0.546, having moderate relationship with Inventory control 0.473 and moderate relationship with operational performance 0.434.

Third the relationship between improved lead time and Inventory control is moderate 0.428 and with operational performance is also moderate relationship 0.401. In last Inventory control has also moderate relationship with operational performance 0.434, so the study contains moderate relationship among variables.

4.6 Regression Analysis

Table 6: Regression

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.544a	.296	.286	.48946
a. Predictors: (Constant), Inventory Controls, Developing control, Improved lead time, Process Development				
b. Dependent Variable: Operational Performance Mean				

This table explains about the protocol of criterion of the model summary and approximation of dependent variable by independent variable. The value of R square has to be between 1 to 100%. Therefore, the outcomes coming from regression table states that the dependent variable operational performance is 29% by inventory control, developing control, improved lead time, process development. In general terminology, R square is 0.296 inventory control, developing control, improved lead time, process development and that clarifies about 29% variation in the operational performance. R is overall correlation amid variables and that is said to be weak correlation.

4.7 Beta Interpretations of Operational Performance

Table 7: Beta Interpretations

Model	Unstandardized Coefficients		Standardized Coefficients		
(Constant)	.701	.372		1.882	.061
Developing control	.231	.081	.170	2.833	.005
Process Development	.194	.076	.171	2.560	.011
Improved lead time	.139	.077	.118	1.803	.072
Inventory Controls	.272	.062	.260	4.352	.000
(Constant)	.701	.372		1.882	.061
a. Dependent Variable: Operational Performance					

The table of coefficient holds the description of 5 variables in it followed by their beta value. The key role of beta value is to confirm whether the hypothesis made related to variables is entire positive and valid. Beta 1 of developing control variable is .231, therefore; if the developing control variable shows an increment by 1% then change in operational performance is predicted to have an increase by 23%. Beta 2 of process development variable is .194, therefore; if the process development variable shows an increment by 1% then change in operational performance is predicted to have an increase by 19%. Beta 3 of improved lead time variable is .139, therefore; if the improved lead time variable shows an increment by 1% then change in operational performance is predicted to have an increase by 13%. Beta 4 of inventory controls variable is .272, therefore; if the inventory control variable shows an increment by 1%

then change in operational performance is predicted to have an increase by 27%.

4.8 ANOVA Analysis

Table 8: ANOVA

ANOVA[b]					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	27.041	4	6.760	28.219	.000b
Residual	64.204	268	.240		
Total	91.246	272			
a. Dependent Variable: Operational Performance Mean b. Predictors: (Constant), Inventory Controls, Developing control, Improved lead time, Process Development					

Sum of squares of regression is 27.041 which is nearly close to best fit line, while the value of error term is 64.204.

4.9 Hypotheses Testing

Table 9: Hypotheses Testing

H	Hypothesis	P Value	Result
H1	Developing waste reduction measures will have a significant impact on the operating efficiency of the company.	P Value is 0.005	Supported
H2	Process development by ERP has a major impact on the operational efficiency of the company	P Value is 0.011	Supported
H3	Management of lead time by ERP has a significant impact on the operational efficiency of the company.	P Value is 0.72	Not Supported
H4	Control of inventory through ERP has a significant impact on the operational efficiency of the company	P Value is 0.000	Supported

5. Conclusion and Recommendations

5.1 Conclusion

In correlation to the ERP systems implementation in small and medium companies' organizational performance the overall findings had positive outcomes having had the analysis of the responses on to the key factors. As the analysis results depict that almost half of the responding companies were having full manufacturing process and they had all been using ERP systems for more than 5 years and so. All the responding companies had been implementing the ERP systems. Moreover, most of the companies were using Al Ameen and SAGE or Sypris software in common. More than half of the companies were found using the systems for their financial requirements however they found its implementation processing quite challenging. Therefore, they reported need based capacity building time bound opportunities for their employees. The analysis further denotes that they all used ERP systems in their all departments from financings to the marketing and they found it highly effective and that could actually create plans for them in every department. Hence the companies could forge staff development and teamwork environment within the systems. Hence the strategic management found it helping in reducing their production lot size, setup time, cycle time, manufacturing, distributing and scheduling problems while removing the bottlenecks using poka yoke. ERP systems were found helping the companies to focus on single supplier, implement preventive maintenance activities, new process equipment or technologies with quick over techniques, one piece flow, Kanban and elimination of waste. The analysis results further depict that the companies found ERP systems effective in evaluating the reliability of process development, responsiveness of the processes, flexibility, performance in controlling cost, resources managing processes of the companies. It is also concluded that the companies with ERP systems in implementation improved and managed the supplier's coordination mechanisms along with inventory, material requirements of planning of their facilities, production control and information on products lines with their suppliers. It was also found useful for warehouse keeper in accessing the inventories quickly while decreasing stagnant goods and excess time spent for taking of inventory. In a nutshell ERP system were found very useful for the companies to improve their organizational performance through provision of high level of customer services, improving the lead time fulfilling along with on-time delivery, quick responsiveness to changes in the market demand so that they were able to modify and introduce their products in the worth satisfaction of their major customers.

5.2 Recommendations

- ERP systems implementation may be made a common tool in organizational performance of the companies.
- All management and implementing staffs may be provided with the most frequent capacity building opportunities on ERP systems implementation.
- ERP may be used as a tool in turning the companies into the full process manufacturing ones.
- SMEs may capitalize a complete benefit from ERP while making it as the part of their long-term business strategies.
- More updated versions of the software may be experimented according to the best suitable needs of the companies in particular.
- Since most of the companies have found ERP implementation challenging hence more researches are required to make it easy and accessible to all the entities worldwide.

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