

Enhancing Business Performance through ERP. Views of Employees, Supervisors and Managers: A Case Study in Greece

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How to cite this paper: Seretidou, D., Tsianaka, E., Billios, D., & Stavropoulos, A. (2024). Enhancing Business Performance through ERP. Views of Employees, Supervisors and Managers: A Case Study in Greece. *Open Journal of Business and Management*, 12, 3857-3879.

<https://doi.org/10.4236/ojbm.2024.126193>

Received: August 26, 2024

Accepted: October 22, 2024

Published: October 25, 2024

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Abstract

This study investigates the advantages of using Enterprise Resource Planning (ERP) systems in business performance, focusing on employee, supervisor, and manager perspectives within Greek companies. It addresses the relationship between ERP system performance factors, including Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement, and Financial Efficiency. A cross-sectional, quantitative, correlative, and comparative research design was employed, involving 170 participants from various sectors such as services, trade, and production. Participants completed a questionnaire assessing ERP performance, and data analysis was conducted using SPSS (Statistical Package for the Social Sciences) 26. The results indicate that ERP systems are rated high in Completeness and Customer Relationship Improvement, with moderate to high ratings for Organizational Effectiveness of Use and moderate for Financial Efficiency. Factors were found to be strongly positively correlated. Notably, Completeness and Financial Efficiency were influenced by the working position, with executive directors and accountant assistants expressing higher satisfaction. Additionally, the completeness of ERP systems was more supported by employees who work in general management and information technology. Moreover, the SAP (Systems Applications and Products) ERP system was most commonly associated with improved performance across all metrics. This study contributes to the understanding of ERP system effectiveness in Greece, highlighting the importance of ERP systems in optimizing decision-making processes, improving customer relationships, and enhancing financial efficiency. The findings emphasize the necessity of tailoring ERP systems to specific organizational roles to maximize their impact on business performance. The study also recommends further research with larger samples and stratified sampling techniques to confirm these results and explore additional dimensions of ERP performance.

Keywords

ERP, Business Performance, Decision Making, Greece, Case Study

1. Introduction

In modern business operations, Enterprise Resource Planning (ERP) systems have gained significant importance (Beheshti & Beheshti, 2010; Catherine & Abdurachman, 2018; Demyanova et al., 2018). An ERP is an all-encompassing system that aids management in the decision-making process by providing valuable information (Yazdi et al., 2020). Since an ideal ERP implementation system allows companies to exercise control as well as effectively manage their business operations, it can be considered as an advantage for its overall efficiency (Yazdi et al., 2020). Organizations can optimize their workflows, increase productivity, and make more informed decisions through the effective application of real-time data and insights (Kulikov et al., 2020). All entrepreneurs can monitor their company's performance wherever they are online thanks to the features provided by the system (Demyanova et al., 2018). By using the ERP system, the top management can free more time to focus on strategic issues (Yazdi et al., 2020). Moreover, according to Beheshti & Beheshti (2010), an ERP represents an information system (IS) that integrates different business functions to generate value and reduce costs. By automating critical processes such as order management, inventory control, and invoicing, ERP systems effectively reduce the occurrence of human errors and enhance operational efficiency (Catherine & Abdurachman, 2018; Shaul & Tauber, 2013). By providing accurate and timely information to the appropriate individuals, an ERP enables them to make well-informed decisions in effectively managing an organization's resources in a constructive and efficient manner (Catherine & Abdurachman, 2018; Costa et al., 2016; Shaul & Tauber, 2013). Numerous scholars have highlighted the advantages of ERP, such as enhancing asset tracking, promoting adaptability of resources, providing decision-making support through information, and improving accountability and uniformity (Bramantoro, 2018; Fadelmoula, 2018; Sriram et al., 2018; Trinoverly et al., 2018; Weli, 2019).

Additionally, ERP aids in the integration of tasks across various departments, reduces financial reporting times, increases output and productivity, streamlines operations, and restructures the workforce (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019). By having access to timely and reliable information, employees are empowered to make data-driven decisions, thus enhancing business performance and outcomes. The availability of accurate and up-to-date information improves the decision-making process, leading to overall performance improvement for businesses (AlMuhayfith & Shaiti, 2020; Uçaktürk & Villard, 2013). Moreover, ERP systems foster better communication and collaboration among various departments, resulting in a more cohesive and efficient organizational structure (Balić et al., 2022; Demyanova et al., 2018; Motwani &

Sharma, 2016). ERP systems are seen as a solution not only to achieve accuracy and reliability in management information systems but also to enhance competitiveness and optimize operational efficiency on a larger scale (Demyanova et al., 2018; Kong & Daud, 2013; Mahala & Kumar, 2016; Motwani & Sharma, 2016; Uçaktürk & Villard, 2013). The incorporation of an ERP system has the potential to greatly enhance customer relationship management (CRM) within a company (Kong & Daud, 2013; Mahala & Kumar, 2016; Spathis & Constantinides, 2003). One notable benefit of utilizing ERP in CRM is the establishment of a centralized customer database. This database facilitates the gathering and examination of customer information, such as their preferences, behaviors, and requirements, enabling businesses to gain valuable insights. Consequently, these insights can be utilized to customize marketing campaigns, offer personalized product recommendations, and provide tailored customer support. By offering personalized experiences, businesses are able to bolster customer satisfaction levels (Hasan, 2018). ERP systems promote adaptability in resource allocation, offer valuable information for decision-making processes, and enhance both accountability and uniformity (Bramantoro, 2018; Fadelelmoula, 2018; Sriram et al., 2018; Trinoverly et al., 2018; Weli, 2019) and reorganizes the workforce. Additionally, ERP systems contribute to shorter financial reporting times, thereby enhancing overall efficiency (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019). Improving the customer relationship through ERP systems enhances customer satisfaction levels, which are a key measure of business performance (Hasan, 2018). Organizations view ERP systems as a remedy for the increasing demand for accurate management information systems, heightened competitiveness, and enhanced operational efficiency (Motwani & Sharma, 2016).

Thus, when evaluating the performance of ERP systems, numerous factors are considered to gauge their effectiveness in various organizational operations. An all-encompassing ERP system should encompass all essential business processes, thereby improving the overall efficacy of organizational usage (Bandara et al., 2023). If the system is properly integrated and utilized optimally, it will have a positive impact on overall performance (Al-Okaily et al., 2023). An ERP system performance could be measured in terms of Completeness, Customer Relationship Improvement, Organizational Effectiveness of Use and Financial Efficiency. A high level of Completeness indicates that the organization is fully utilizing its ERP system, leveraging all features and functionalities to optimize decision-making processes and operations (Bandara et al., 2023). Examples of completeness include the improvement of productivity and intra-organizational relations, reliability, accuracy, sufficiency, understanding and speed of the provided information (AboAbdo et al., 2019; Balić et al., 2022; Bramantoro, 2018; Kong & Daud, 2013; Kulikov et al., 2020; Motwani & Sharma, 2016; Weli, 2019). Customer Relationship Improvement indicates user friendly environment, fast and easy tracking of customer (Kong & Daud, 2013; Mahala & Kumar, 2016; Spathis & Constantinides, 2003). Organizational Effectiveness Use denotes the extent to which an ERP

system is effectively employed within an organization (Al-Okaily et al., 2023) and it indicates accurate information about daily routine tasks and the needed information to enhance decision-making processes and the productivity of each department (AlMuhayfith & Shaiti, 2020; Bramantoro, 2018; Demyanova et al., 2018; Fadelelmoula, 2018; Sriram et al., 2018; Trinoverly et al., 2018; Weli, 2019). Financial Efficiency indicates mainly shorter contribution of time in each procedure and reduced financial costs (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019).

Mahala & Kumar (2016) argued that it is necessary to measure the implementation of the ERP systems to be able to measure their performance especially on how users are utilizing the systems. Balić et al. (2022) found a positive relationship between the quality of the ERP system and financial performance. Yazdi, Wang, & Esfeden (2020) emphasized also the role of ERP in increasing the business efficiency and making the business operations faster due to real time insights. Sheik & Sulphrey (2020) showed how ERP systems can help reduce operational costs, and enhance organizational effectiveness. Taufiq & Siddiqui (2020) supported that higher job designation might strengthen the positive influence of ERP on organizational performance. Kong & Daud (2013) highlighted the positive effects of ERP in both Customer Relationship Improvement and Financial Efficiency. Spathis & Constantinides (2003) indicated a correlation between Financial Efficiency and Customer Relationship Improvement, while Demyanova et al. (2018) indicated a correlation between Completeness and Financial Efficiency. Moreover, Sheik & Sulphrey (2020) noticed a relation between Financial Efficiency and Organizational effectiveness of use. A relation between Financial Efficiency and Completeness has also demonstrated (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019).

ERP systems have been extensively examined for their relationship with business performance, and the results have been diverse (AlMuhayfith & Shaiti, 2020; Balić et al., 2022; Bandara et al., 2023). The intricacy of this relationship emphasizes the need for ongoing research to gain a deeper understanding of how ERP systems specifically impact business performance and decision-making. As far as the authors recognize, the present paper reflects a first-ever research attempt in the Greek context, which examines the advantages of ERP system adoption on business performance in terms of completeness, organizational functionality of use, customer relationships improvement, and financial performance, as perceived by the employees, supervisors and managers. Prior extensive literature review has discovered a research gap focusing specifically on the benefits of ERP systems within Greek companies through the perceptions of a company's human resources, from employees to managers. Although the ERPs have been widely researched and analyzed globally, there is a lacuna of empirical evidence inspecting their performance within the specific socio-economic and cultural framework of Greece.

More specific, previous studies have examined ERP systems in multinational or

European firms with developed infrastructures (Molnár, Szabó, & Benczúr, 2012; van Everdingen, van Hillegersberg, & Waarts, 2000). The case is different in Greece because SMEs are the major business pattern in Greece, and the cultural attitudes towards technology adoption and management are different. There is scant information about perceptions and actual use of ERP systems in this specific locality by the employees, supervisors, and managers. In addition, the existing literature worldwide focuses more on the technical efficacy and strategic value of ERP systems (Akbulut & Motwani, 2005; Chien & Tsaor, 2007; Jain, 2016; Shen, Chen, & Wang, 2016) and less on different layers of human resources (employees, team leaders, and managers) perception towards these systems. This is very critical because the success of ERP implementation directly calls for ownership from all levels of an organization. Our study fills this gap by examining the perceptions of these stakeholders in Greece, a place where ERP outcomes could be strongly framed by hierarchical and interpersonal dynamics.

Though the literature on ERP systems has reviewed their financial benefits, other dimensions have received scant attention particularly in Greece (Kapetanopoulou, Kouroutzi, & Anastasiadou, 2021). This includes the customer relationship, operational effectiveness, and organizational efficiency which are of critical importance. In this respect, the present study adds into the existing literature by filling this gap through providing a holistic view of business performance from the perspective of human resources at multiple levels. The study sharply focuses on Greece and thus significantly draws the attention of researchers to an inadequately researched socioeconomic context regarding ERP literature. This helps understand how ERP systems work in different settings and bridges the gap in cross-cultural ERP studies. Furthermore, this paper contributes practical implications for organizations, policy recommendations, and academic enrichment, thereby, fostering the debate on ERP and business performance.

2. Aim and Research Questions

Aim of current study is to investigate the advantages of using ERP in business performance by examining the views of employees, supervisors and managers. The relationship of characteristics that conduct the advantages of ERP is also examined as well as the difference of views according to demographic and job profile.

The research questions are formulated below:

- 1) Which are user's perceptions regarding the ERP Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency?
- 2) How ERP Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency are related?
- 3) What demographic and job characteristics affect the views of users about ERP Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency?

3. Materials and Methods

3.1. Research Design

A primary cross-sectional quantitative correlative and comparative research was accomplished. Primary cross-sectional research was used to examine the directly the perception of employees, supervisors and managers about the advantages of ERP in business at a specific time period (Cohen et al., 2007). Quantitative method was chosen as concepts of ERP Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency are measurable (Batada & Rahman, 2012), thus they can be measured accurately with Likert type questions (DeVellis, 2016), of acceptable validity (McLeod, 2013) and reliability (Nunnally & Bernstein, 1994). Correlational research was used to examine the relationship between factors of ERP advantages, while comparative to compare the views according to demographic and occupational profile, using statistical methods in numerical data (Muijs, 2011).

3.2. Procedure

The research process started on March 31, 2023 after the relevant university approves the research application. Sampling is considered to be clustering (Creswell, 2014), according to the legal form of company. In particular, the data collection process involved a structured and systematic approach, targeting limited liability companies, société anonyme and general partnerships, which commonly use ERP systems and have distinct departments such as management, accounting, sales, procurement, and IT. Companies registered in several Chambers of Commerce and Industry across Greece, including Grevena, Dodecanese, Argolis, Heraklion, Ioannina, Athens, Thessaloniki, and Serres were included in survey. Using a specialized search platform accessible only to registered users of the chambers, potential participants based on the legal form of their companies were identified. This targeted approach ensured that our sample included companies with complex structures that are more likely to use ERP systems extensively.

Before administering the questionnaire, the ethical compliance was confirmed by informing participants—employees, supervisors, and managers—about the research aims, emphasizing the voluntary, anonymous nature of their participation, and their right to withdraw at any point. Consent was obtained, and contact details of both the researcher and the supervising professor were provided for further communication or clarification (Society & British Psychological Society, 2014).

The questionnaire was distributed via Google Forms, and the survey duration for each participant was approximately 5 - 10 minutes, making it time-efficient and accessible. The quick and organized approach to data collection helped gather valuable insights into ERP system usage across various sectors in Greece, such as services, trade, and production, enhancing the robustness and relevance of your study findings. Researcher announced her personal e-mail and the e-mail of the supervisor in case participants wanted to communicate for any reason.

This detailed process reflects a well-thought-out strategy to engage a diverse

and relevant sample, providing a comprehensive understanding of ERP systems' impact on business performance within the Greek context.

3.3. Questionnaire

A section of demographic and job characteristics was used regarding gender, age, educational level, labor department, working position, company sector and ERP system. ERP system performance was measured with the scale of [Batada & Rahman \(2012\)](#), which includes 4 factors:

- “Completeness”, with 12 questions such as “*ERP is reliable*”, “*The information provided by the ERP is sufficient*” and “*The use of ERP meets your business requirements*”;
- “Organizational Effectiveness of Use”, with 16 questions such as “*The use of ERP optimized organizational processes*”, “*The use of ERP improved the productivity of the department using it*” and “*The use of ERP improved collaboration between different departments*”;
- “Customer Relationship Improvement”, with 8 questions such as “*The use of ERP helps in easy tracking of customer records*” and “*The use of ERP favors the day-to-day easy management of customer issues*”; and
- “Financial Efficiency” with 8 questions such as “*The use of ERP has enhanced the financial performance of the business*” and “*The use of ERP has enhanced the financial forecasting process*”. Answers were given on a five-rating point scale from 1 - 5 (1 = Not at all, 2 = A little, 3 = Quiet, 4 = Much, 5 = Absolutely).

Questions were adjusted for the needs of current research. Reliability of factors were tested using the Cronbach's Alpha coefficient which measures the internal consistency with satisfactory values to be those greater than 0.7 ([Nunnally & Bernstein, 1994](#)). Reliability was perfect for factors “Completeness” ($\alpha = 0.936$), “Organizational Effectiveness of Use” ($\alpha = 0.964$) and “Customer Relationship Improvement” ($\alpha = 0.933$) while high for “Financial Efficiency” ($\alpha = 0.873$). Scale [Batada & Rahman \(2012\)](#) is considered valid via face and content validity ([McLeod, 2013](#)).

3.4. Population-Sample

Population of current research is considered the employees, supervisors and managers who work in private companies in Greece and have experienced the use of ERP. Sample was conducted by 170 participants of mean age 45 years old. with the majority to be males (61.8%, $n = 105$), of master (49.4%, $n = 84$) or bachelor educational level (36.5%, $n = 62$). Regarding job characteristics most work in finance labour department (37.6%, $n = 64$) as accountants (13.5%, $n = 23$), chief accountants (11.2%, $n = 19$) and assistant accountants (10%, $n = 17$) and in general management labour department (23.5%, $n = 47$), as executive directors (24.7%, $n = 42$). Companies of current study belong to sectors of services (44.1%, $n = 75$), trade (39.4%, $n = 67$) and production (37.6%, $n = 64$). The most common ERP systems were the Sap (18.8%, $n = 32$), the Epsilon (17.1%, $n = 29$), the Softone

(13.5%, n = 23), the Entersoft (11.8%, n = 20) and the Atlantis (10%, n = 17). (Table 1).

Table 1. Demographic and job characteristics.

Nominal	Category	N	%
Gender	Male	105	61.8%
	Female	65	38.2%
Educational level	High school	16	9.4%
	Bachelor	62	36.5%
	Master	84	49.4%
	Ph.D.	8	4.7%
Labour Department	General management	40	23.5%
	Finance/Accounting	64	37.6%
	Sales	27	15.9%
	Supplies	9	5.3%
	Production	2	1.2%
	Information technology	14	8.2%
Working position	Other	14	8.2%
	Executive Director	42	24.7%
	Chief Accountant	19	11.2%
	Accountant	23	13.5%
	Accountant assistant	17	10.0%
	Office employee	26	15.3%
Company sector	Other	43	25.3%
	Production	64	37.6%
	Trade	67	39.4%
	Services	75	44.1%
ERP System	Other	6	3.5%
	Sap	32	18.8%
	Epsilon	29	17.1%
	Entersoft	20	11.8%
	Softone	23	13.5%
	Singular logic	12	7.1%
	Atlantis	17	10.0%
	Bitr	3	1.8%
Cust	3	1.8%	
Scale	Range	M	SD
	Age	26 - 66	45 9.3

3.5. Data Analysis

Data analysis was performed in IBM SPSS 26, with significance 5%. Descriptive data were presented using mean, standard deviation and percentages, to determine the benefits of ERP systems. Factors were tested for normality using Kolmogorov Smirnov test (Field, 2018). Normality was accepted for “Organizational Effectiveness of Use” ($p = 0.060$) and “Financial Efficiency” ($p \geq 0.200$), while it was rejected for “Completeness” ($p \leq 0.001$) and “Customer Relationship Improvement” ($p = 0.001$).

Parametric tests were used for variables that are normally distributed. In particular, for “Organizational Effectiveness of Use” and “Financial Efficiency” independent samples t-test was used, to test mean differences between 2 independent samples and one-way ANOVA (Analysis Of Variance) for 3 or more independent samples, which are defined by demographic and job characteristics. Data were presented with mean (M) and standard deviation (SD).

Non-parametric tests were used for variables that are not normally distributed. In particular, for “Completeness” and “Customer Relationship Improvement”, Mann Whitney test U was used to test median differences between 2 independent samples while Kruskal Wallis for 3 or more independent samples which are defined by demographic and job characteristics. Data were presented with median (Mdn) and interquartile range (IR) (Field, 2018).

Pearson coefficient was used to test relationships between 2 ERP factors that are normally distributed, otherwise the Spearman coefficient was used. Spearman coefficient was also used to examine relationships between ERP systems with ERP factors (Field, 2018).

4. Results

4.1. Descriptive Statistics

Completeness of ERP was rated high ($M = 3.80$). Participants believe much or absolutely that ERP provides accurate data and information (78.2%, $M = 4.11$), is reliable (77.7%, $M = 4.08$), improves their business productivity (73.0%, $M = 3.96$), provides clearly understandable information (70.6%, $M = 3.92$), meets their business requirements (71.2%, $M = 3.85$), includes adequately trained support department (64.7%, $M = 3.84$), provides the required information immediately (62.9%, $M = 3.79$), helps to implement practices to improve intra-organizational relations (65.3%, $M = 3.79$) and provides sufficient information (62.30%, $M = 3.68$). Results indicate that users recognized the completeness of ERP systems (Table 2).

Organizational Effectiveness of Use was rated medium to high ($M = 3.55$). Regarding the most important results, participants think that ERP effectively meets the needs of the business (68.8%, $M = 3.89$), improves the overall operation of the business (66.5%, $M = 3.76$) and the productivity of the department using it (62.9%, $M = 3.71$), provides the necessary information to facilitate decision-making processes (63%, $M = 3.66$) and accurate information about their daily routine tasks

(60.6%, M = 3.65) and enhances the decision-making process (60%, M = 3.60). Users tended to agree about the organizational effectiveness of the use of ERP systems (Table 3).

Table 2. Descriptive statistics for Completeness.

Question	M	SD	Not at all	A little	Quite	Much	Absolutely
The data and information provided by the ERP are accurate	4.11	0.80	0%	2.4%	19.4%	42.9%	35.3%
ERP is reliable	4.08	0.89	1.8%	2.4%	18.2%	41.2%	36.5%
The use of ERP improves your business productivity	3.96	0.92	0.6%	7.1%	19.4%	41.8%	31.2%
The information provided by the ERP is clearly understandable	3.92	0.81	0.6%	2.4%	26.5%	45.9%	24.7%
The use of ERP meets your business requirements	3.85	0.87	1.2%	5.9%	21.8%	49.4%	21.8%
The ERP support department is adequately trained	3.84	1.00	2.4%	5.9%	27.1	35.3%	29.4%
You receive the required information from the ERP immediately	3.79	1.03	2.4%	8.2%	26.55	33.5%	29.4%
The use of ERP helped to implement practices to improve intra-organizational relations	3.79	0.93	1.2%	7.6%	25.9%	41.8%	23.5%
The information provided by the ERP is sufficient	3.68	0.96	2.4%	8.8%	26.5%	42.9%	19.4%
The concepts presented in ERP are easy to understand	3.58	0.91	1.2%	10.0%	34.1%	38.8%	15.9%
The ERP support department is available immediately	3.52	1.12	4.1%	14.1%	30.0%	28.8%	22.9%
You receive updates from the ERP that help you perform your tasks	3.48	1.09	4.1%	13.5%	32.9%	28.8%	20.6%
Completeness	3.80	0.73					

Table 3. Descriptive statistics for organizational effectiveness of use.

Question	M	SD	Not at all	A little	Quite	Much	Absolutely
ERP effectively meets the needs of the business	3.89	0.84	0.6%	3.5%	27.1%	44.1%	24.7%
The use of ERP improved the overall operation of the business	3.76	0.93	1.8%	7.6%	24.1%	45.3%	21.2%
The use of ERP improved the productivity of the department using it	3.71	0.89	1.2%	7.6%	28.2%	45.3%	17.6%
ERP provides the necessary information to facilitate decision-making processes	3.66	0.95	2.9%	7.6%	26.5%	45.9%	17.1%
ERP provides accurate information about your daily routine tasks	3.65	1.08	2.9%	13.5%	22.9%	36.5%	24.1%
ERP enhances the decision-making process	3.60	1.05	4.1%	11.2%	24.7%	40.6%	19.4%

Continued

The use of ERP improved collaboration between different departments	3.57	1.00	2.9%	10.6%	31.2%	37.1%	18.2%
The use of ERP optimized organizational processes	3.57	0.97	2.9%	10.0%	29.4%	42.4%	15.3%
You get satisfactory technical support for your ERP usage	3.52	1.04	2.4%	14.1%	32.4%	31.2%	20.0%
ERP gives competitive advantages to the business	3.51	1.04	3.5%	12.9%	31.2%	34.1%	18.2%
The use of ERP increased management satisfaction with organizational processes	3.50	1.05	4.1%	14.1%	25.3%	40.6%	15.9%
ERP users meet its requirements efficiently	3.49	0.88	1.2%	9.4%	41.2%	35.3%	12.9%
The use of ERP has automated your tasks	3.48	0.97	2.9%	11.8%	33.5%	37.6%	14.1%
ERP has reduced your workload	3.39	1.08	4.7%	17.1%	27.6%	35.3%	15.3%
The use of ERP has improved inter-company relations in general	3.31	1.02	4.1%	15.9%	38.2%	28.8%	12.9%
The use ERP has improved your relationship with your superiors and subordinates	3.21	1.09	8.2%	14.1%	37.6%	28.2%	11.8%
Organizational Effectiveness of Use	3.55	0.80					

Customer Relationship Improvement was rated high ($M = 3.71$). Participants stated that the use of ERP helps in easy tracking of customer records (73.5%, $M = 4.08$), is fast (67.1%, $M = 3.79$), has a satisfactory performance (65.9%, $M = 3.79$) and provides user friendly environment (61.8%, $M = 3.70$). In general, users believe that there is an improvement with customer relationship when ERP systems are used (Table 4).

Table 4. Descriptive statistics for customer relationship improvement.

Question	M	SD	Not at all	A little	Quite	Much	Absolutely
The use of ERP helps in easy tracking of customer records	4.08	0.93	0.0%	6.5%	20.0%	32.9%	40.6%
ERP is fast	3.79	0.99	1.2%	11.2%	20.6%	41.2%	25.9%
The overall performance of the ERP is satisfactory	3.79	0.93	1.2%	7.6%	25.3%	42.4%	23.5%
ERP provides user friendly environment	3.70	0.97	1.2%	11.2%	25.9%	40.0%	21.8%
The use of ERP favors the day-to-day easy management of customer issues	3.68	1.07	4.71%	7.06%	28.82%	34.71%	24.71%
The use of ERP favors communication with customers	3.68	1.07	2.9%	10.6%	28.8%	31.2%	26.5%
ERP simplifies your tasks	3.64	1.04	3.5%	10.0%	27.1%	38.2%	21.2%
The use of ERP has benefited the optimization of organizational resources	3.35	1.03	4.1%	15.9%	34.1%	32.9%	12.9%
Customer Relationship Improvement	3.71	0.83					

Financial Efficiency was medium rated ($M = 3.05$), with the most important benefit to be that the ERP helps save time (61.7%, $M = 3.73$). Users seem to be neutral about financial efficiency of ERP systems (**Table 5**).

Table 5. Descriptive statistics for financial efficiency.

Question	M	SD	Not at all	A little	Quite	Much	Absolutely
ERP helps save time	3.73	0.99	1.8%	9.4%	27.1%	37.6%	24.1%
The use of ERP has enhanced the financial forecasting process	3.50	1.06	4.7%	10.6%	32.9%	33.5%	18.2%
ERP helps reduce operating costs	3.47	1.07	4.7%	12.4%	32.4%	32.4%	18.2%
The use of ERP has enhanced the strategic planning of the business	3.07	1.06	8.2%	20.0%	35.9%	28.2%	7.6%
The efficiency of the business depends on the efficiency of the ERP	3.00	1.05	10.0%	18.8%	38.2%	27.1%	5.9%
The use of ERP has enhanced the financial performance of the business	2.94	1.08	10.0%	22.4%	39.4%	20.0%	8.2%
The use of ERP led to organizational changes	2.86	1.01	7.6%	30.0%	36.5%	20.0%	5.9%
The use of ERP led to a reduction in staff	1.82	1.02	50.6%	27.1%	12.4%	9.4%	0.6%
Financial Efficiency	3.05	0.76					

4.2. Correlation between ERP Characteristics

High positive relationship between ERP characteristics was observed. In particular, “Completeness”, “Organizational Effectiveness of Use”, “Customer Relationship Improvement” and “Financial Efficiency” were strongly positive correlated with significance 1% ($r, \rho \geq 0.565, p < 0.01$) (**Table 6**).

Table 6. Correlation between ERP characteristics.

Factor	1	2	3	4
1) Completeness	1			
2) Organizational Effectiveness of Use	0.821**	1		
3) Customer Relationship Improvement	0.792**	0.844**	1	
4) Financial Efficiency	0.565**	0.757**	0.721**	1

** $p < 0.01$.

4.3. Effect of Demographic and Job Characteristics

“Completeness” was affected by labour department ($p = 0.023$). In particular, the median value of participants who work in general management or in information technology ($Mdn = 4.00$) is higher than median value of participants who work in supplies, production ($Mdn = 3.67, p = 0.023$) and in finance, sales or other labour department ($Mdn = 3.83, p = 0.027$). Results indicate that completeness of ERP systems was more supported by users who work in general management or IT labour department (**Table 7**).

Table 7. Effect of labour department to ERP characteristics.

Factor	Labour Department	N	Value	F/H	<i>p</i>
Completeness**	General management-IT	54	4.00 (0.71)	H (2) = 7.559	0.023
	Finance-Sales-Other	105	3.83 (1.25)		
	Supplies-Production	11	3.67 (0.92)		
Organizational Effectiveness of Use*	General management-IT	54	3.71 (0.65)	F (2, 167) = 2.185	0.116
	Finance-Sales-Other	105	3.50 (0.87)		
	Supplies-Production	11	3.24 (0.65)		
Customer Relationship Improvement**	General management-IT	54	4.00 (0.78)	H (2) = 4.056	0.132
	Finance-Sales-Other	105	3.75 (1.25)		
	Supplies-Production	11	3.50 (1.50)		
Financial Efficiency*	General management-IT	54	3.18 (0.70)	F (2, 167) = 1.227	0.296
	Finance-Sales-Other	105	3.00 (0.81)		
	Supplies-Production	11	2.92 (0.30)		

*Values are represented with M (SD); **Values are represented with Mdn (IR).

“Completeness” was affected by working position ($p = 0.015$). Median value of participants who work as executive director or as accountant assistant (Mdn = 4.00) is higher than the participants with other working position (Mdn = 3.75). Furthermore, “Financial Efficiency” was affected by working position with the mean value of participants who work as executive director or as accountant assistant ($M = 3.22$) to be higher ($p = 0.032$) than the participants with other working position ($M = 2.96$). In general, completeness and financial efficiency of ERP systems was more supported by executive directors and accountant assistants (Table 8).

Table 8. Effect of working position to ERP characteristics.

Factor	Executive Director-Accountant assistant	N	Value	t/U	<i>p</i>
Completeness**	No	111	3.75 (1.17)	U = 2534	0.015
	Yes	59	4.00 (0.75)		
Organizational Effectiveness of Use*	No	111	3.48 (0.83)	t (168) = -1.575	0.117
	Yes	59	3.68 (0.73)		
Customer Relationship Improvement**	No	111	3.75 (1.25)	U = 2820	0.136
	Yes	59	4.00 (1.00)		
Financial Efficiency*	No	111	2.96 (0.76)	t (168) = -2.159	0.032
	Yes	59	3.22 (0.74)		

*Values are represented with M (SD); **Values are represented with Mdn (IR).

“Sap” ERP system was correlated with increased “Completeness” ($\rho (170) = 0.236$, $p < 0.01$), “Organizational Effectiveness of Use” ($\rho (170) = 0.214$, $p <$

0.01), “Customer Relationship Improvement” ($\rho(170) = 0.214, p < 0.01$) and “Financial Efficiency” ($\rho(170) = 0.222, p < 0.01$). Results indicate the positive effect of Sap ERP system to ERP performance (**Table 9**).

Table 9. Effect of ERP systems to ERP characteristics.

Variable	Completeness	Organizational Effectiveness of Use	Customer Relationship Improvement	Financial Efficiency
Sap	0.236**	0.214**	0.214**	0.222**
Epsilon	-0.035	0.024	-0.083	-0.064
Entersoft	-0.116	-0.061	-0.041	-0.087
Softone	0.114	0.063	0.083	0.056
Singular logic	-0.092	-0.058	-0.083	-0.108
Atlantis	-0.018	-0.038	-0.031	-0.024
Bitr	0.009	-0.072	0.015	0.070
Cust	0.073	-0.065	-0.034	-0.014
Other	-0.099	-0.129	-0.081	-0.019

** $p < 0.01$.

5. Discussion

The research objectives are: 1) to examine the views of employees, supervisors, and managers regarding the implementation of the ERP system, 2) to test the correlation of the characteristics of ERP system, and 3) to examine the influence of demographic and job characteristics on the implementation of the ERP system.

ERP systems were described of high completeness. A high level of completeness indicates that the organization is fully utilizing its ERP system, leveraging all features and functionalities to optimize decision-making processes and operations (Bandara et al., 2023). The most important advantages were the reliability, the accuracy, sufficiency, understanding and speed of the provided information, the improvement of productivity and intra-organizational relations, the fulfillment of business requirements and the adequately training of the ERP support department. High completeness in terms of accuracy, reliability (AlMuhayfith & Shaiti, 2020; Motwani & Sharma, 2016; Uçaktürk & Villard, 2013), intra-organizational relations (Balić et al., 2022; Demyanova et al., 2018; Motwani & Sharma, 2016), the fulfillment of business requirements (Balić et al., 2022) improvement of productivity (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019) is also highlighted by previous studies. By integrating diverse business processes and departments, ERP systems facilitate the smooth flow of data and eliminate data silos. This integration empowers businesses to analyze data from multiple sources; thereby gaining valuable insights into their operations (Balić et al., 2022). Completeness of ERP systems was more supported by employees who work in general management and information technology, as well as by employees who

work as executive directors or as accountant assistants. Research on ERP system effectiveness reveals similarities between IT professionals and business managers in their perceptions of implementation success factors and system benefits (Chang, 2006; Ifinedo, 2007; Ifinedo & Nahar, 2007). Both groups prioritize and evaluate ERP success measures similarly, with the exception of vendor/consultant quality (Ifinedo & Nahar, 2007). More to that, the relationship between accountants and ERP systems has become increasingly intertwined, with accountants using their position to reshape their professional expertise (Newman & Westrup, 2005). Accountants spend less time on routine tasks and more on data interpretation and performance evaluation (Vakilifard et al., 2014).

Customer Relationship Improvement via ERP systems was highly supported. Participants stated that ERP provides user friendly environment, helps in easy tracking of customer records, is fast and has a satisfactory performance. Hasan (2018) also noted that ERP systems facilitate the gathering and examination of customer information, such as their preferences, behaviors, and requirements, enabling businesses to gain valuable insights. Consequently, these insights can be utilized to customize marketing campaigns, offer personalized product recommendations, and provide tailored customer support. By offering personalized experiences, businesses are able to bolster customer satisfaction levels. Several studies stated that the incorporation of an ERP system has the potential to greatly enhance customer relationship within a company (Kong & Daud, 2013; Mahala & Kumar, 2016; Spathis & Constantinides, 2003).

Considering Organizational Effectiveness of ERP Use, employees stated that ERP effectively meets the needs of the business, provides accurate information about their daily routine tasks, the necessary information to facilitate and enhance decision-making processes and improves the overall operation and the productivity of the department which uses. According to several studies, ERP systems have been shown to enhance the tracking of assets, promote adaptability in resource allocation, offer valuable information for decision-making processes (Bramantoro, 2018; Fadelelmoula, 2018; Sriram et al., 2018; Trinoverly et al., 2018; Weli, 2019) improve collaboration between different departments (Balić et al., 2022; Demyanova et al., 2018), reorganize the workforce, increase productivity and enhance overall efficiency (AboAbdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019). According to AlMuhayfith & Shaiti (2020), the availability of accurate and up-to-date information is crucial for employees to make informed decisions based on data. This, in turn, leads to enhanced business performance and outcomes. The ability to utilize data for decision-making is a substantial advantage that can greatly contribute to the overall improvement of any organization.

Regarding Financial Efficiency, the most important benefit was that the ERP helps save time. Several studies argue that ERP is beneficial for departments as it facilitates the integration of tasks, leading to increased output and productivity (AboAbdo et al., 2019). Additionally, ERP systems contribute to shorter financial reporting times, thereby enhancing financial efficiency (AboAbdo et al., 2019;

Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019). The improvement of Financial Efficiency via ERP systems was more supported by executive directors or as accountant assistants.

The most common ERP systems used were the Sap, the Epsilon, the Softone, the Entersoft and the Atlantis, but the most effective considering Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency was the Sap system. According to a study conducted by Shaul and Tauber (2013), it has been found that the most crucial aspect of an implementation project is the careful selection and preparation of software. Previous study highlighted that the most common ERP systems used are the Epsilon and SAP system (Mahala & Kumar, 2016). Specifically in Greece, business consultants offer either domestic CRM systems such as Soft One, Entersoft, and Singular Logic, or global CRM systems like Oracle, Microsoft Dynamics, and SAP (Tsiana & Spanoudakis, 2022).

Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency were positive correlating indicating that they conduct the basic elements of measuring ERP systems performance. There have been several studies conducted on how effective ERP systems are when implemented in an organization. Kong & Daud (2013), for example, showed the positive effects of ERP and how it is very effective in Customer Relationship Improvement and at the same time, it adds value to the Financial Efficiency. Spathis & Constantinides (2003) also showed how the Financial Efficiency from the implementation of ERP, in terms of reduced administrative costs and cycle times, led to Customer Relationship Improvement by increasing customer satisfaction. Moreover, Demyanova et al. (2018) argued that ERP systems automate planning and business processes and fulfil of business requirements and hence it saves time for management in the daily routine. In other words, there is a correlation between Completeness and Financial Efficiency. Sheik & Sulphay (2020) showed how ERP systems can help reduce operational costs and save time, highlighting the relation between Financial Efficiency and Organizational effectiveness of use. Other studies (Abo-Abdo et al., 2019; Bramantoro, 2018; Kulikov et al., 2020; Weli, 2019) underlined the relation between Financial Efficiency (save time and reduce costs) and Completeness (intra-organizational relations, the fulfill of business requirements improvement of productivity).

Concerning managers' and supervisors' perceptions, research on how ERP technologies affect business performance, provide mixed feedback. Both Ulrich & Güler (2021) and Parsa & Duffchah (2015) have shown a positive relationship between ERP technologies and organizational effectiveness of use. More specific Ulrich & Güler (2021) emphasized that using an ERP system is beneficial in organizational process and management accounting and Parsa & Duffchah (2015) proved that it also has a positive effect on decision-making. On the other hand, De Alwis & Dissanayake (2010) had a more reserved position. They claimed that there is only a weak positive relationship between ERP technologies and business

performance. The two main challenges they identified were the resistance of employees and unmet expectations during the implementation of ERP.

Finally, the role of employees in transforming ERP capabilities into organizational performance was emphasized by Liu et al. (2011), with influence of supervisors, performance evaluation schemes, and intrinsic motivation being a significant factor. The effect of ERP systems on employee performance and the quality of systems and information were also mentioned by Suroso, Budhijana, & Delfiani (2018). Chou & Chang (2008) added that customization and other organizational mechanisms can affect intermediate benefits of ERP systems, which in turn will affect overall benefits. Usefulness and reliability were also emphasized by Amoako-Gyampah (2007), and the latter is a finding that suggests training and user involvement should be targeted when it comes to shaping employee's perceptions of ERP systems. Hafifah et al. (2019) identified a positive effect of the ERP systems towards employee performances because of a strong ram task and technology fit. Shahzadi & Naveed (2016) urged the need for ERP training to increase employee productivity, while Singa, Pamornmast, & Sriyakul (2020) emphasized that ERP was supposed to support leadership and the excellence of the organization would support the organizational performances.

For ERP implementation in Greece to be successful, companies first have to identify their specific business needs and operations (Soh, Kien, & Tay-Yap, 2000). This is a critical component of ensuring that the ERP system a company chooses is one that fits in line with the specific operational requirements of an organization. In the context of the small- and medium-sized-enterprises-dominated market situation in Greece, businesses should cooperate closely with the suppliers of the ERP and implementation consultants in tailoring the system so that it integrates well with their working environment and still offers ability for further growth.

Further, implementation success with ERP depends on the extent to which the organizational change accompanying it is well managed. A strong change management plan is very essential in which a commitment to change at all levels of the organization is obtained—right from the grassroots levels up to the topmost managerial cadre (Hasibuan & Dantes, 2012). This means communicating the value and expected results of ERP adoption and addressing any potential resistance. Employees, team leaders, and managers need to feel comfortable during the implementation so that not only are the technical aspects of the ERP system understood, but they can also see how it is going to help in executing their day-to-day activities and responsibilities at work. This kind of involvement would make the transition more successful in nature and sustainable in the long run with the system.

Besides, ERP systems are fully benefited due to ongoing education and interdepartmental cooperation (Akça, Esen, & Özer, 2013). Programs should be comprehensive at regular intervals at all levels of employees to retrain and retain proficiency in the use of the system. This helps to become adaptable to system updates

and also reoptimizing the operational use of ERP solutions toward operational efficiency. Moreover, ERP implementations should enhance or improve interdepartmental collaboration by offering a common platform that allows information sharing among departments (Yılmaz, Özyörük, & Ocak, 2023). An organization that desires to break down silos for customer-centricity, improved operational performance, and eventually financial success should facilitate interdepartmental communication.

Moreover, the companies should have a continuous improvement mindset to regularly check and fine-tune ERP usage to align with the changing business goals and market conditions (Vukman et al., 2024). Even as ERP systems provide benefits right away, the fact that they should be seen as long-term investments cannot be overemphasized. Organizations need to define key performance indicators and metrics that will help them evaluate the impact of the ERP system on their operational efficiency, as well as customer and financial performance satisfaction. This kind of evaluation will be coming on a regular basis and allows the business to be able to identify areas of improvement and further fine-tune the usage to match growing business needs. Next, companies should ensure that their ERP system is, in another respect, indeed scalable and flexible so far as accommodating future growth is concerned—it might come in terms of adding new modules, expanding functionalities or even integrating with emerging technologies such as artificial intelligence or the Internet of Things (Vukman et al., 2024).

6. Conclusion

Completeness, Organizational Effectiveness of Use, Customer Relationship Improvement and Financial Efficiency conducts the basic elements of measuring ERP systems performance. ERP systems were described of high completeness, customer relationship improvement, moderate to high organizational effectiveness of use and moderate financial efficiency. The completeness of ERP systems was more supported by participants who work in general management and information technology, as well as by executive directors and accountant assistants who also supported more the improvement of financial efficiency. The most common ERP systems used were the Sap and the Epsilon, while the Sap ERP system was considered the more effective.

6.1. Limitations

Results of current study are limited due to convenient sampling (Creswell, 2014) and refer to employees with specific characteristics. Sample was conducted by 170 participants, of mean age 45 years old with the majority to be males, of master or bachelor educational level, who work in finance labor department as accountants, chief accountants and assistant accountants and in general management labor department as executive directors at private companies in Greece which belong to sectors of services, trade and production. Sample size was not sufficient to ensure the necessary statistical power in all tests that were used (Cohen, 1988).

Questionnaire that measured the ERP systems performance was not tested for its construct validity.

6.2. Future Research

New research is proposed using sample of 300 - 400 participants, using stratified sampling for employees, supervisors and managers and the technique of Confirmatory Factor Analysis (Kline, 2014) to confirm the construct validity of the questionnaire which measures the ERP systems performance.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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