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Examining the Impact of E-Governance on the Performance of Corporations: A Case Study of Companies in Jordan

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Abstract: The goal of this study was to investigate the impact that e-governance technologies have on the effectiveness of organizations in Jordan's public sector that are responsible for providing services to the public. In particular, the focus of the study was on issues pertaining to work engagement, innovative and imaginative thinking, as well as the effect on society and the environment. In order to achieve this objective, a quantitative research methodology that centered on the administration of an online survey was implemented as the primary tool. The sample was chosen through the use of a stratified random sampling method, and the data analysis was carried out through the utilization of both descriptive and inferential statistics. According to the conclusions of the study, implementing e-governance tools in a firm, such as ERP, CRM, and online collaboration tools, can considerably improve a business's overall performance. The range of the explained variation was from 53% to 68.9%, demonstrating a substantial association between e-governance and increased performance in the areas of employee engagement, innovation and creativity, and social and environmental impact. The findings of this research offer extremely useful insights into the exact areas of a company's performance that are most affected by the implementation of e-governance systems. The research suggests that businesses should make the implementation of e-governance tools, in particular enterprise resource planning (ERP), customer relationship management (CRM), and online collaboration tools, a top priority in order to improve their performance in the aforementioned domains. The conclusions of this study have wider-reaching consequences for organizations and governments all over the world, making it possible for its contributions to have an impact beyond Jordan's borders. The research sheds light on how essential e-governance is to the improvement of business performance and the realization of sustainable development objectives. In further investigations, it might be beneficial to try out new approaches to data collection, broaden the scope of the sample to incorporate companies operating in a variety of sectors, and investigate how e-governance affects performance in areas of the business not directly related to it.

Keywords: E governance, Performance, Engagement, Innovation and Creativity, and Social and Environmental Impact.

1 Introduction

E-governance, also known as electronic governance, is the application of information and communication technology (ICT) with the goal of enhancing the manner in which the government carries out its operations and provides its services to the public. E-governance is a concept that was developed with the intention of increasing openness, efficiency, and accountability within the public sector, all while providing citizens with the ability to access government services and information via digital channels. In accordance with a document that was released by the United Nations in 2018 [1], the term "e-governance" refers to the use of information and communication technologies (ICTs) to improve the delivery of government services and processes with the intention of enhancing efficiency, transparency, and citizen participation. There have been many different e-governance programs put into place by governments all over the world, from rich countries to underdeveloped countries, with the goals of modernizing public services and increasing citizen

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participation. Electronic voting systems, online portals for citizen involvement, and digital platforms for government services are some examples of initiatives that fall under the umbrella of e-governance. One example of electronic governance is the Indian government's "Digital India" plan, which was introduced in the year 2015. Expanding access to digital infrastructure, promoting digital literacy, and enabling digital delivery of government services to citizens are the three main focuses of the program, which aims to turn India into a digitally empowered society and a knowledge economy [2]. E-governance is absolutely necessary for governments that want to modernize their operations and services, and they should make it one of their top priorities. e-government has the potential to encourage good governance, encourage economic development, and boost social inclusion [3],[4],[5],[6]. E-governance can also be used in the private sector, unlike traditional forms of administration, which are restricted to public institutions. Electronic Document Management Systems (EDMS), Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), Electronic Voting Systems, and Digital Dashboards are all examples of e-governance tools that have the potential to improve collaboration, customer engagement and satisfaction, as well as increase efficiency, productivity, and performance management [7],[8], [9]. E-governance, in a nutshell, has the potential to revolutionize the way that governments and private companies carry out their functions in the digital age. The operations of the government would become more transparent, efficient, and responsive as a result of this, while private businesses would see advances in cooperation, customer involvement, and performance management. As a consequence of this, it is very necessary for governmental entities as well as commercial businesses to give e-governance initiatives high importance and strive towards the effective execution of these programs.

E-governance in Jordan has garnered a large amount of attention in recent years as a consequence of the government's increasing attempts to enhance public services and raise transparency and accountability. This is because of the rising use of technology in these areas. In recent years, Jordan has achieved a number of important achievements in the field of e-governance, notably in the areas of digital infrastructure, online services, and citizen engagement. These advancements have helped Jordan move closer to its goal of becoming a fully digital state. In terms of the e-government development index, Jordan was rated 96th in the world according to the United Nations E-Government Survey 2020, although it was ranked 6th in the Arab area (EGDI). The Electronic Government Services Readiness Index (EGDSI) is a composite indicator that evaluates the degree to which nations are prepared to adopt e-government services as well as the quality of such services. It is comprised of two components: the degree to which nations are prepared to adopt e-government services, and the quality of such services. The Jordanian government took an important step toward enhancing electronic governance when, in 2005, it launched the e-Government Program (Yesser), which was a crucial component of the program. This program's objective was to increase the use of information and communication technology (ICT) across all levels of government in order to raise the quality of public services and inspire increased participation from the general population. Yesser has successfully carried out a number of e-government initiatives, some of which include the establishment of a statewide electronic payment gateway, an online portal for government services, and an electronic procurement system. Because to these measures, it has become much simpler to eliminate bureaucratic bottlenecks, the procedures that are carried out by the government have become more effective, and the general public has been given increased access to information. In the same year, Jordan also launched an open data portal and a code of conduct for public workers. In addition, Jordan joined the Open Government Partnership (OGP) in the same year. In addition, the government has begun a variety of educational programs in an effort to raise the general population's and professionals' levels of knowledge regarding information and communications technology (ICT). The Information and Communications Technology Association of Jordan (int@j) organizes educational seminars on a wide range of topics, some of which include e-commerce, software development, and cybersecurity, amongst others.[10],[11].

2 Literature review

E-governance and companies' performance

In the most recent few years, a huge number of studies have shown that e-governance has good advantages on performance in a range of scenarios. This research was carried out in a variety of countries. [12] found that e-governance has a significant beneficial influence not only on the effectiveness of the Chinese government but also on the quality of the services it provides and the level of satisfaction experienced by its residents. According to the findings of [13], the deployment of e-governance in South Korea increased productivity, creativity, and customer happiness. [14] Singh and Mishra found that the use of e-governance in India had a significant and beneficial impact on the country's rural development. In addition, Cheema and Shabbir [15] found that the implementation of e-governance has the potential to improve public service delivery in terms of openness, accountability, and efficiency while simultaneously lowering costs. In addition, Li et al. [16], Gungor and Coskun [17], and Al-Khalidi et al. [18] discovered that e-governance had a favorable impact on the governmental, economic, and administrative performance in China, OECD

countries, and Jordan, respectively. These studies include additional evidence demonstrating that e-governance can increase performance in a variety of settings.

E-governance importance

According to research, putting e-governance methods into action can result in a variety of positive outcomes, including enhanced productivity, transparency, and accountability [19]. E-governance is the use of digital technology to automate administrative procedures, with the goal of reducing the time and effort required to deliver services while simultaneously enhancing their quality. E-governance also has the potential to improve openness by making information more freely accessible to citizens and other stakeholders in the system. This, throughout turn, may encourage accountability by providing a forum for citizens to give comments on the services that the government provides in addition to monitor the activities of the administration. In other words, it allows locals to keep an eye on how the government is doing its job. E-governance, which promotes transparency and responsibility, can be beneficial in eliminating cases of corruption and guaranteeing that government functions are delivered in a manner that is fair and equitable. It is essential for administrations to keep investing in e-governance initiatives and to form collaborations with different stakeholders in order to guarantee that these programs are carried out in an efficient manner. This is due to the fact that e-governance has the capability of fundamentally altering the manner in which governmental functions are carried out.

Forms of e-governance

Several e-governance approaches may be used depending on the kinds of interactions that take place between both the government and other stakeholders. Furthermore, there are a number of other forms of e-governance that may be implemented to supply online services and information to people, companies, government entities, and state employees. For instance, Government-to-Citizen e-governance (also known as G2C e-governance) allows people to get access to online information and services provided by the government. Included in these services are tax filing, the renewal of permits, and the reissuance of passports [20]. E-governance that is provided by the government to companies, such as "registration," "licensing," and "procurement," is referred to as "Government-to-Business" or "G2B" e-governance [21]. E-governance between government agencies, also known as politicians (G2G) e-governance, provides online services and information for government agencies. These services include interagency cooperation and procurement [22]. Finally, the Government-to-Employees (G2E) e-governance provides online services and information to members of the public who are employed by the government. These services include administration of applicants for leaves of absence, as well as management of both payroll and human resources [23]. The use of these e-governance strategies produces an increase in the transparency, efficiency, and availability of governmental services and operations, which can all be advantageous not only to the government but also to its numerous stakeholders. Figure 1 illustrates a few of the more frequent forms that electronic governance might take.

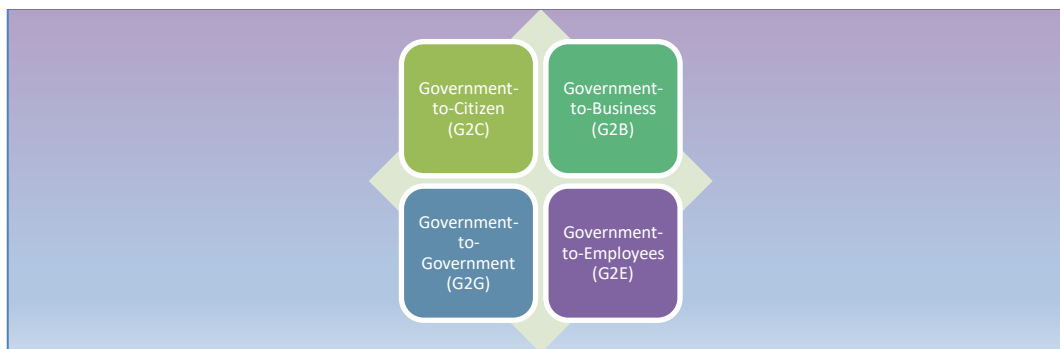


Fig. 1: Forms of E governance, figure prepared by author of the study. (2023).

Instruments of electronic administration

E-governance refers to the practice of leveraging a range of technologies to enhance the processes of providing services to consumers and making decisions inside enterprises. This can be done via the use of the internet. These techniques include e-participation tools for employee engagement in decision-making, e-service delivery tools for online service access, e-procurement tools for procurement, data advanced analytics for decision-making and improved customer, GIS tools for spatial data management, social networking tools for commitment and information diffusion, and mobile applications for convenient access to services and information. All of these tools can be accessed electronically. These

technologies help businesses improve not just their efficiency and production but also the engagement of their workforces and the level of service that they offer to their respective clientele.

- o Electronic participation tools, often known as e-participation platforms or simply e-platforms, are websites that enable employees to take part in the decision-making processes of their employers. Organizations are able to engage with their staff members and collect feedback on decisions that will have an impact on them by utilizing the tools for electronic participation. Because of this, the morale of the workforce may improve, as well as their ability to make decisions [24].
- o Electronic service delivery systems are utilized so that workers may have online access to a variety of services, including the submission of vacation requests, the payment of bills, and the registration for training programs. Organizations are able to improve their service delivery and eliminate the need for customers to make phone calls or in-person visits if they make use of the tools that are available to them through the supply of electronic services. This has the potential to result in enhanced productivity as well as increased satisfaction among customers [25].
- o Organizations now have the ability to manage procurement procedures online, such as bidding, contracting, and invoicing, thanks to the capabilities provided by e-procurement platforms. Organizations are able to improve transparency, cut expenses, and streamline their purchasing procedures when they utilize solutions for electronic procurement. Because of this, there is potential for a more effective use of resources and improved management of finances [26].
- o The use of data analytics technologies provides companies with the ability to collect, analyze, and put collected data to use in order to improve decision-making processes and the delivery of services. Organizations are able to recognize patterns, anticipate results, and maximize the use of their resources when they make use of technologies for data analytics. Because of this, decisions can be made more effectively, and services may be provided more effectively [27].
- o The use of GIS tools gives companies the ability to manage and analyze spatial data, such as maps and satellite photos. Organizations are able to make more educated decisions concerning the use of land, the construction of infrastructure, and the management of emergency situations when they utilize the tools provided by GIS. Because of this, there is the potential for a more effective use of resources and a more organized administration of physical assets [28].
- o The use of social media technologies gives businesses the ability to interact with their staff members and share information by way of various social media platforms, such as Twitter, Facebook, and Instagram. By the utilization of the tools provided by social media, companies are able to broaden their audience reach, strengthen their brand, and increase transparency. This has the potential to result in higher levels of participation and an enhanced perception among the general public [29].
- o Mobile applications give employees the ability to access the services, applications, and information of their enterprises through the use of their personal mobile devices. Increasing consumer happiness, improving employee productivity, and providing more easy access to services are all possible outcomes for businesses that implement mobile application strategies. This has the potential to result in improved user experiences and higher engagement [30].

E-governance tools are essential for organizations that want to improve their operations, increase customer satisfaction, and increase efficiency and productivity. Governance has become an increasingly important aspect of companies in recent years, as technology continues to advance and customers demand convenient and efficient services. In order for businesses to accomplish this goal, there are a variety of e-governance tools available to them. These technologies have been the subject of substantial research and have been demonstrated to be successful. The following are some of these:

- o Enterprise Resource Planning, sometimes known as ERP, systems: ERP systems combine a company's several business tasks into a single software platform, which results in increased efficiency and streamlined operations. [9]
- o Customer Relationship Management (CRM) systems: CRM systems manage contacts with customers, enabling businesses to track consumers' purchases, preferences, and feedback. This ultimately results in increased customer engagement and happiness. [8]
- o Electronic Document Management System (EDMS): An EDMS makes it easier to create, store, and retrieve digital documents, hence eliminating the need for paper-based storage and enhancing employee cooperation. EDMS also helps to reduce costs associated with storing documents.[7]
- o Digital dashboards: Digital dashboards provide real-time performance monitoring and data visualization for a company's key performance indicators (KPIs), which leads to improved decision-making and performance management.[9]
- o Electronic Voting Systems: Electronic voting systems can make decision-making and employee participation in firms easier, but they require e-governance procedures to assure their security and correctness. [8]
- o Tools for Online Collaboration: Tools for online collaboration, such as software for project management and platforms for video conferencing, make it easier for employees to communicate with one another and work together on projects even when they are physically separated or working from home. [31]

In order to analyze the efficacy of e-governance techniques, the authors of this study choose to focus on the ERP, CRM, and Online Collaboration Tools as the three specific variables that are most frequently utilized in Jordan's public sector. Prior research conducted by [31], [8],[9] was used as a reference point in order to guide the selection of these factors.

Performance

One definition of firm performance is the degree to which a corporation is successful in accomplishing its aims and targets [32]. Even though there are a wide variety of metrics and measures that can be used to evaluate performance, some of the most popular metrics include market share, customer satisfaction, employee engagement, social and environmental impact, and financial indicators (such as revenue, profitability, and return on investment) [4]. performance of an organization can be described as "the degree to which a firm is able to fulfill its objectives in the face of environmental challenges and opportunities" [33]. "Business performance is a measure of how well an organization achieves its aims and objectives, as well as the amount to which it has satisfied the expectations of its stakeholders" [34], [35], [4] it is important to use a balanced and integrated approach to measuring company performance, which takes into consideration both financial and non-financial outcomes as well as the perspectives of various stakeholders. Company performance is a complex and multi-dimensional construct that can be measured using a range of indicators and metrics, depending on the goals and objectives of the organization and the expectations of its stakeholders [34].

Performance Criteria

There are many different approaches to measuring the performance of an organization, and the selection of specific criteria will be determined by the business's aims and objectives as well as the expectations of its stakeholders. Image 2 represents some performance criteria that are frequently used:

- o Financial performance is referred to as this and comprises metrics such as revenue, profit, return on investment, and shareholder value [36].
- o Satisfaction of the customer: This covers not just customer comments and complaints, but also customer loyalty, retention, and recommendations [4].
- o Employee engagement: This comprises indicators such as employee happiness, motivation, and dedication, as well as employee turnover and absenteeism. o Employee turnover and absenteeism are also included [37]
- o Creativity and innovation: These are measured by things like the amount and quality of new products or services, patents, and investment in R&D. [37]
- o Social and environmental impact: This includes measures such as the organization's contribution to social and environmental sustainability, such as reducing greenhouse gas emissions or supporting local communities [18]
- o Economic impact: This includes measures such as how much money the organization made [38]

The author of the study has chosen three specific characteristics to measure the performance of organizations in relation to the current research issue. These variables are employee engagement, innovation and creativity, and social and environmental effect.



Fig. 2: Performance criteria the figure prepared by author of the study.

Significance of the study

The importance of this study rests in the fact that it has the ability to deliver insightful information regarding the effect that e-governance has had on the efficiency of public sector organizations in Jordan. E-governance is becoming more widely acknowledged as a critical factor in driving efficiency, productivity, and innovation in the public sector. So, it is absolutely necessary to investigate the potential effects it could have in a developing nation such as Jordan. The results of this research have the potential to make a significant contribution to the current body of literature on e-governance in public sector enterprises, particularly in the context of Jordan. The overarching purpose of the conceptual framework of this study is to investigate the relationship between e-governance and corporate performance in the Jordanian public sector, specifically with regard to employee engagement, innovation and creativity, and social and environmental effect.

The findings of the study can offer practical insights into the impact of e-governance on firm performance, which can be valuable for public sector organizations in Jordan to adopt and apply e-governance solutions to boost their performance. In addition, the findings of the study might provide information to policymakers and government officials regarding the potential benefits of expanding e-governance techniques in the public sector. In the end, the findings of the study can provide support to the overarching objective of the Jordanian public sector, which is to promote openness, accountability, and citizen involvement through the implementation of digital technologies and practices.

The Formation of Hypotheses

A comprehensive evaluation of the previous research on e-governance and the effects it has on a variety of organizational outcomes was carried out as part of this study so that hypotheses could be developed. According to the findings of the literature research, E-Governance has the ability to boost business performance by simplifying and standardizing operational procedures, lowering operating expenses, and increasing operational efficacy. E-governance also has the potential to improve social and environmental effect by encouraging environmentally responsible behavior and cutting down on an organization's overall carbon footprint. The findings of the review indicate that E-Governance has a positive influence on innovation and creativity. This is due to the fact that it facilitates easier collaboration among workers and makes it simpler for individuals to share the information that they possess. E-governance additionally has the possibility of improving employee satisfaction by creating an atmosphere that is greater open and friendly to involvement on the part of workers. This may be accomplished by providing an environment that is more receptive to employee participation. The process of creating research hypotheses and arranging the research study relied heavily on the results of the literature review, which provided a firm foundation for the procedure.

H0: No effects of e governance on corporate performance.

In accordance with the findings of an investigation that was conducted out in Korea by Lee et al. [13], which explored the connection between E-Governance as well as the achievement of businesses, it was discovered that businesses which made use of E-Governance absolutely loved greater levels of both profitability and productivity than those which did not. This was the conclusion drawn from the findings of the investigation, which investigated the connection between E-Governance and the performance of businesses. In a similar vein, Li et al. [16] found that the application of E-Governance can assist companies in reducing their transaction expenses while improving their efficiency, which ultimately leads to an advancement in their financial results. This was determined to have an advantageous impact on the businesses' financial results. The implementation of specific E-Governance solutions is essential to the enhancement of corporate operations, as was discovered by various researchers in their own investigations. For instance, Chang and Park [39] conducted a study in which they came to the conclusion that the utilization of online tax filing and payment systems can result in increased tax compliance and decreased tax evasion, which, in the end, led to a favorable influence on the performance of the company. Using electronic procurement systems can, according to the findings of a research carried out by Gohar and Hussain [40], result in greater supply chain efficiency, decreased costs, and improved relationships with suppliers. Conversely, some researches have brought to light the possible adverse effects of e-governance on business organizations. For instance, Guo [41] discovered that the high regulatory costs associated with e-governance might act as a barrier to the expansion and innovation of businesses. E-governance can also create new risks and challenges linked to data privacy and cybersecurity, both of which, if they are not handled correctly, can have a negative influence on the operation of an organization. Hence, in order for businesses to derive the maximum value from e-governance projects, it is essential for them to properly manage the risks and difficulties that are associated with them. [39]; [41].

H0.1: No effects of e governance on social and environmental impact.

Based on the findings of a research that was carried out by Aichouni [42], e-governance may have the capability to increase the efficiency of public services, which may in turn lead to improved social outcomes and enhanced access to public services. In a similar Amankwah [43] contends that e-governance may help to sustainability by facilitating more effective usage of resources and cutting carbon emissions. In addition, it has been shown that some types of e-governance software can have large beneficial impacts on both society and the environment. For instance, Heeks [44] discovered that mobile phone-based e-governance systems in Tanzania can enhance both overall health outcomes and access to healthcare services.

H0.2: No effects of e governance on innovation and creativity.

Wang [45] found that e-governance has the potential to inspire innovation by improving access to information and fostering collaboration between government agencies and private enterprises. Similarly, Ahuja [46] discovered that e-governance can lead to more efficient and effective decision-making, which can result in more innovative policy solutions. Specific e-governance technologies have also been identified as having a significant impact on individuals' creativity and originality. Yaghoubi [27] found that the use of open data portals can foster innovation by providing business owners and academic researchers with access to important data that can be used to create new products and services. Similarly, Kim [47] found that social media in e-governance can promote public involvement and

participation, leading to more creative policy suggestions.

H0.3: No effects of e governance on employee engagement.

Based on the results of Gursay [48] e-governance has the potential to increase employee engagement. This is because it creates extra opportunities for workers to participate in decision-making processes, as well as to voice their thoughts and get feedback. According to the findings of Halim [48] e-Governance has the potential to have a favorable influence on the levels of work satisfaction and engagement experienced by employees. It is more probable that an employee will experience a sense of fulfillment in their work if they are given the opportunity to participate in the process of formulating and carrying out the organization's rules and procedures. The relevance of certain e-governance systems in the process of increasing employee engagement has been highlighted in a number of other studies. For instance, Bhatti [49] discovered that the utilization of social media in e-governance may boost communication between employees and management, which in turn leads to better levels of employee engagement. In a similar vein, Thapa [50] found that the use of mobile technology in e-governance can boost employee engagement by allowing for improved flexibility and communication within teams.

Conceptual structure

The researcher has constructed a conceptual framework for the study, which defines E-governance as the independent variable. This conceptual framework also includes CRM and Online Collaboration Tools. This is based on research found in publications [31], [11],[9]. The success of the company is the dependent variable, and it is measured by employee engagement, innovative and creative output, and the organization's influence on society and the environment. The evidence for this may be found in publications [37],[4],[38].

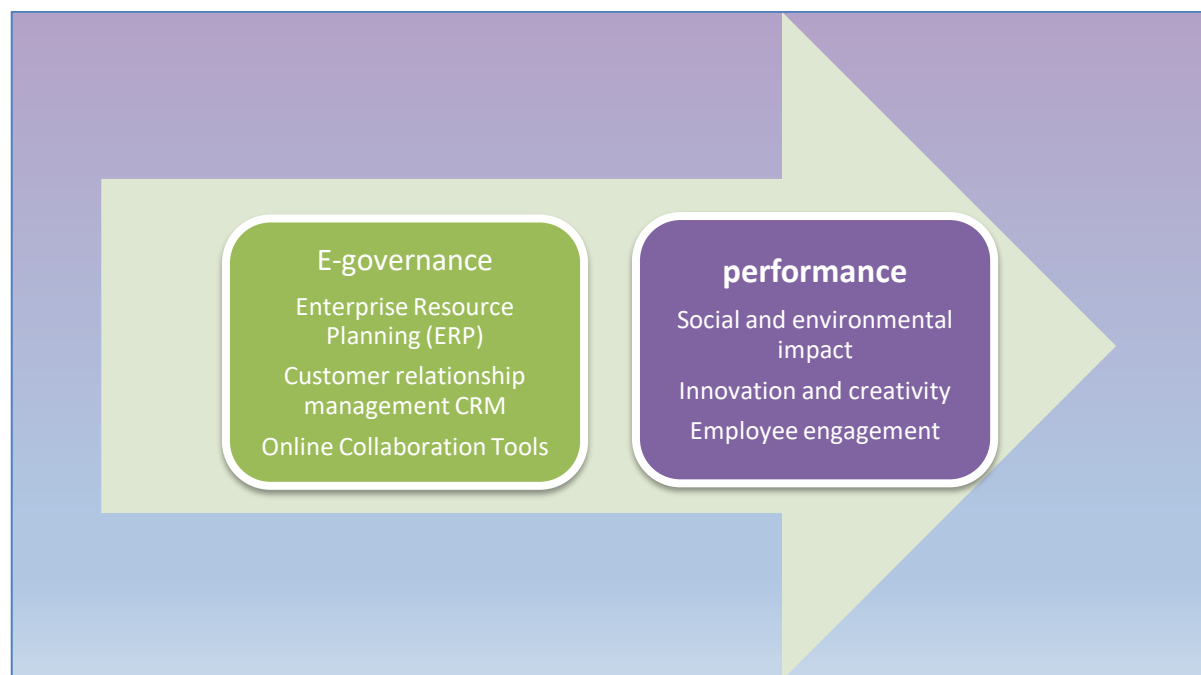


Fig. 3: Conceptual framework the figure created by author of the study. (2023).

3 Methodology

Data collecting

The Jordanian public sector will serve as the research population for this study, and a sample size of 500 people representing a variety of departments will be included. The online questionnaire that was used for the research project is broken up into three components. In the first segment, information about the participants' demographic characteristics is collected (work experience, and age). The second segment investigates the independent variable of e-governance practices (ERP, CRM, Online Collaboration Tools), while the third section investigates the dependent variable performance (Social and environmental effect, Innovation and creativity, Employee engagement) of the organization.

Analysis

As a statistical program, the Statistical Package for the Social Sciences (SPSS) was used by the researcher so that she could investigate the hypotheses and answer the research questions. In order to answer the study questions and analyze the data, we employed mean values, frequency distributions, and standard deviations. In order to determine whether or not the data gathering technique was consistent and reliable, the Cronbach's Alpha test was carried out. In this study, both multiple and simple regression analysis were carried out to assess the hypotheses behind the investigation. The results of the survey replies gathered from the participants will be presented in the next section. The findings of the study, which are presented below, were arrived at based on the responses received from the participants.

Demographic Variables to Study Sample:

Table 1: Descriptive sample of the demographic variables of the study:

NO.	Variables	Categorization	Frequency	Percent%
1	Experience	1-2 years	60	17.1
		2-3 years	16	4.6
		3-4 years	44	12.5
		4-5 years	87	24.8
		Less than	45	12.8
		More than	99	28.2
	Total		351	100.00
2	Age	40-31	122	34.8
		50-41	134	38.2
		60-51	29	8.3
		Over	43	12.3
		Under	23	6.6
	Total		351	100.00

The table prepared by author of the study. (2023)

The demographic variables included in the study are experience level and age. Table 1 gives descriptive statistics on these two factors. 351 people have been included in the sample so that we may get some experience. Based on the frequency and percentage distributions, it can be seen that the majority of participants (28.2%) have more than 5 years of experience, followed by 24.8% who have 4-5 years of experience. Participants with experience ranging from one to two years make up 12.8% of the sample, whereas participants with experience ranging from three to four years make up 17.1%, 4.6%, and 12.5% of the sample, respectively. Participants with less than one year of experience make up 12.8% of the sample. In terms of age, there are also 351 people included in the sample. According to the frequency and percentage distributions, the oldest group of participants (38.2%) are between the ages of 41 and 50, while the youngest group of participants (34.8%) are between the ages of 31 and 40. Individuals older than 60 years old and younger than 23 years old make up 12.3% and 6.6% of the sample, respectively, while participants in the age range of 51-60 years old account for only 8.3% of the sample. This table, taken as a whole, gives an overview of the distribution of experience and age in the sample, and it could be useful for assessing how these demographic characteristics might affect the findings of the study.

Validity and Reliability:

Construct Validity (Factor Analysis; Exploratory Factor Analysis):

Table 2: The results of the exploratory factor analysis of the study tool.

NO.	Item	Loadings (Independent variable: E- governance)	Loadings (Dependent variable: Company's performance)
1	E-governance practices have improved the speed and efficiency of government services	0.55	
2	E-governance practices have increased transparency in government decision-making	0.484	

	processes		
3	E-governance practices have made it easier for citizens to access government services and information	0.604	
4	The use of Enterprise Resource Planning (ERP) tools has streamlined government processes and made them more efficient	0.718	
5	The use of CRM has improved decision-making processes in government organizations	0.828	
6	The use of Online Collaboration Tools has enhanced communication and collaboration between government employees	0.609	
7	E-governance practices have helped to bridge the digital divide and provide greater access to government services and information for marginalized communities	0.831	
8	The implementation of e-governance practices has reduced administrative costs for government agencies	0.781	
9	The use of e-governance practices has improved the quality of government services and processes	0.663	
10	E-governance practices have increased citizen trust in government institutions	0.534	
KMO		0.745	
Bartlett's Test of Sphericity – Chi-Square		1688.794	
Df		45	
Eigen Value		2.674	
Sig.		0.00**	
1	E-governance practices have increased employee engagement and motivation	0.634	
2	The use of Enterprise Resource Planning (ERP) tools has improved the communication and coordination among employees	0.579	
3	The use of CRM has increased employee awareness of organizational goals and objectives	0.714	
4	The use of Online Collaboration Tools has enhanced team collaboration and communication among employees	0.774	
5	E-governance practices have improved employee job satisfaction	0.75	
6	E-governance practices have facilitated innovation and creativity in government processes	0.672	
7	The use of Enterprise Resource Planning (ERP) tools has encouraged creative problem-solving among government employees	0.706	
8	The use of CRM has enabled data-driven decision-making and promoted innovative thinking	0.824	

9	The use of Online Collaboration Tools has facilitated knowledge-sharing and innovation among government employees	0.704	
10	E-governance practices have promoted a culture of innovation and creativity in government organizations	0.817	
11	E-governance practices have enabled greater social and environmental impact in government decision-making	0.675	
12	The use of Enterprise Resource Planning (ERP) tools has enabled better tracking and management of environmental resources and impacts	0.681	
13	The use of CRM has improved the monitoring and reporting of social and environmental performance indicators	0.781	
14	The use of Online Collaboration Tools has facilitated greater stakeholder engagement and feedback on social and environmental issues	0.638	
15	E-governance practices have led to more socially and environmentally responsible government policies and practices	0.454	
KMO		0.792	
Bartlett's Test of Sphericity – Chi-Square		4227.019	
Df		105	
Eigen Value		7.343	
Sig.		0.00**	

Statistically significant at (0.05 = α) The table prepared by author of the study. (2023).

Based on a number of important discoveries, the data shown in Table No. 2 suggest that the research instrument possesses a high degree of construct validity. Because every Eigen Value was higher than 1, it can be deduced that each of the extracted components is responsible for explaining a sizeable portion of the overall variance in the data. The fact that every Kaiser-Meyer-Olkin (KMO) value was higher than 0.50 provides strong evidence that the data can be used for factor analysis. If the KMO values had been lower than 0.50, this would have indicated that the data were not suitable for factor analysis. At the threshold of statistical significance ($= 0.05$), the results of Bartlett's test of sphericity showed that every single value was statistically significant. This leads one to believe that there are significant correlations between the variables, which indicates that they are most likely measuring the same underlying construct. All of the factor values were loaded onto a single factor, and the values of that factor were more than 0.40, which suggests that the items in the research instrument are assessing the same underlying construct. These findings indeed give evidence for the construct validity of the research instrument; however, it is crucial to note that they do not provide evidence for other forms of validity, such as criterion-related validity or convergent validity. As a result, it is possible that it will be necessary to carry out further validity tests in subsequent studies in order to offer a more in-depth evaluation of the validity of the research instrument.

Reliability of Questionnaire Dimensions:

Table (3): Reliability Test (Cronbach's Alpha) for all Variables.

NO.	Dimensions	NO.	Cronbach's Alpha (Alpha Value (α))
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1	Independent Variable (E-governance)	10	0.84
2	Dependent Variable (Company's performance)	15	0.924
2.1	Social and environmental impact	5	0.784
2.2	Innovation and creativity	5	0.869
2.3	Employee engagement	5	0.810
	Overall	25	0.942

The table prepared by author of the study. (2023)

It would appear that all of the reliability coefficients that are shown in Table No. 3 are higher than the acceptable limit of 0.70, which is specified by Pallant [51]. This suggests that the measurements or items employed in the study are trustworthy and consistent in measuring the construct of interest. If the reliability coefficients for a measurement instrument are high, this suggests that the tool is reliable and consistent over time; as a result, the results that are derived from it are likely to be accurate and trustworthy. However, it is essential to keep in mind that reliability coefficients by themselves do not ensure that the measurements are correct. Validity is a term that describes the extent to which a measurement tool accurately measures what it is designed to measure. Because of this, it is essential to evaluate the validity of the metrics in addition to determining whether or not they can be relied upon. As a result, the research instrument is appropriate for use in the context of the application to accomplish the objectives of the study.

4 Results

Descriptive analysis of study variables:

The items of the questionnaire were graded according to the five scales as follows:

Grade	1	2	3	4	5
Scale	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

Here is how to assess the relative importance of items:

Class	3.68 - 5	2.34 – 3.67	1 – 2.33
relative importance	High	Medium	Low

Table 4: Descriptive Statistics (E-governance).

NO	Items	Mean	Std.	t- value Calculate	Sig.	Rank	Importance level
1	E-governance practices have improved the speed and efficiency of government services	3.77	0.87	16.52	0.001**	10	High
2	E-governance practices have increased transparency in government decision-making processes	4.12	0.60	35.12	0.00**	2	High
3	E-governance practices have made it easier for citizens to access government services and information	4.15	0.65	33.27	0.00**	1	High
4	The use of Enterprise Resource Planning (ERP) tools has streamlined government processes and made them more efficient	4.03	0.92	21.03	0.00**	6	High

5	The use of CRM has improved decision-making processes in government organizations	4.05	0.94	20.89	0.00**	5	High
6	The use of Online Collaboration Tools has enhanced communication and collaboration between government employees	4.10	0.76	26.87	0.00**	3	High
7	E-governance practices have helped to bridge the digital divide and provide greater access to government services and information for marginalized communities	4.07	0.71	28.03	0.00**	4	High
8	The implementation of e-governance practices has reduced administrative costs for government agencies	3.86	0.88	18.35	0.00**	8	High
9	The use of e-governance practices has improved the quality of government services and processes	3.98	0.64	28.56	0.00**	7	High
10	E-governance practices have increased citizen trust in government institutions	3.83	0.69	22.57	0.00**	9	High
Overall		3.99	0.50	High			

Statistically significant at $(0.05 = \alpha)$ The table prepared by author of the study. (2023)

The data presented in Table 4 suggest that the research instrument possesses a high degree of dependability and consistency. This conclusion is derived from a number of important discoveries, including the following: It may be deduced from the fact that the mean values for the items ranged from 3.77 to 4.15 that the participants, on the whole, gave favorable responses to the items. The items had standard deviations that ranged from 0.60 to 0.94, indicating that there was some degree of heterogeneity in the responses. All of the t-test values were statistically significant when compared to the level of statistical significance (0.05), suggesting that the average values for the items were significantly different from the value of 3 that represents a neutral answer. According to the results of the t-test that were statistically significant, the participants in the study exhibited a favorable attitude toward the construct that was being tested by the research instrument. The total mean for the research instrument was 3.99, which places it closer to the positive end of the response scale than the neutral midpoint does. The fact that the standard deviation was only 0.50 suggests that all of the participants provided responses that were comparable to one another. When taken as a whole, these data demonstrate that the research instrument possesses a high degree of reliability and consistency, as indicated by the consistent responses and significant t-test results. However, it is essential to keep in mind that validity and reliability are not interchangeable terms, and it is possible that more testing will be required to determine whether or not the research instrument possesses validity.

Table 5: Descriptive Statistics (Performance).

NO	Items	Mean	Std.	t- value Calculate	Sig.	Rank	Importance level
1	E-governance practices have	4.00	0.69	27.04	0.00**	4	High

	increased employee engagement and motivation						
2	The use of Enterprise Resource Planning (ERP) tools has improved the communication and coordination among employees	4.06	0.60	33.10	0.00**	2	High
3	The use of CRM has increased employee awareness of organizational goals and objectives	4.03	0.74	25.89	0.00**	3	High
4	The use of Online Collaboration Tools has enhanced team collaboration and communication among employees	4.10	0.81	25.35	0.00**	1	High
5	E-governance practices have improved employee job satisfaction	3.92	0.87	19.88	0.00**	5	High
Overall (Employee engagement)		4.02	0.57	High			
1	E-governance practices have facilitated innovation and creativity in government processes	4.15	0.68	31.61	0.00**	1	High
2	The use of Enterprise Resource Planning (ERP) tools has encouraged creative problem-solving among government employees	3.98	0.81	22.50	0.00**	2	High
3	The use of CRM has enabled data-driven decision-making and promoted innovative thinking	3.83	0.92	16.88	0.00**	4	High
4	The use of Online Collaboration Tools has facilitated knowledge-sharing and innovation among government employees	3.86	0.84	19.30	0.00**	3	High
5	E-governance practices have promoted a culture of innovation and creativity in government organizations	3.74	1.00	13.83	0.00**	5	High
Overall (Innovation and creativity)		3.91	0.69	High			
1	E-governance practices have enabled greater social and environmental impact in government decision-making	4.19	0.77	29.09	0.00**	1	High
2	The use of Enterprise Resource Planning (ERP) tools has enabled better tracking and management of environmental resources and impacts	4.02	0.71	27.04	0.00**	3	High
3	The use of CRM has improved the monitoring and reporting of social and environmental performance indicators	3.83	0.79	19.69	0.00**	5	High
4	The use of Online	3.97	0.75	24.34	0.00**	4	High

	Collaboration Tools has facilitated greater stakeholder engagement and feedback on social and environmental issues						
5	E-governance practices have led to more socially and environmentally responsible government policies and practices	4.05	0.72	27.38	0.00**	2	High
Overall (Social and environmental impact)		4.01	0.55	High			
Overall (performance)		3.98	0.55	High			

Statistically significant at (0.05 = α) The table prepared by author of the study. (2023)

The data presented in Table 5 suggest that the research instrument possesses a high degree of dependability and consistency. This conclusion is derived from a number of significant discoveries, including the following: It may be deduced from the fact that the mean values for the items ranged from 3.74 to 4.19 that the participants, on the whole, gave favorable responses to the items. The items had standard deviations that ranged from 0.60 to 1.00, indicating that there was some degree of heterogeneity in the responses. All of the t-test values were statistically significant when compared to the level of statistical significance ($= 0.05$), suggesting that the average values for the items were significantly different from the value of 3 that represents a neutral answer. According to the results of the t-test that were statistically significant, the participants in the study exhibited a favorable attitude toward the construct that was being tested by the research instrument. The total mean for the research instrument was 3.98, which places it closer to the positive end of the response scale than the neutral midpoint does. The fact that the standard deviation was only 0.55 suggests that all of the participants provided responses that were comparable to one another. When taken as a whole, these data demonstrate that the research instrument possesses a high degree of reliability and consistency, as indicated by the consistent responses and significant t-test results. However, it is essential to keep in mind that validity and reliability are not interchangeable terms, and it is possible that more testing will be required to determine whether or not the research instrument possesses validity.

The results of testing hypotheses:

H0: No effects of e governance on corporate performance.

Table 6: shows the results of the analysis.

Direction			β	t	Sig.	R	R ²	Adjusted R ²
E-Governance	---->	corporate performance	0.830	27.84	0.00**	0.830	0.689	0.689

Statistically significant at (0.05 = α) The table prepared by author of the study. (2023)

The results of the analysis indicate that the null hypothesis (H0) should not be accepted since there is evidence to support the alternative hypothesis, which states that there is an influence of e-governance on corporate performance. Due to the fact that the value of the t-test was found to be significant and the correlation coefficient was found to be high, it appears that there is a statistically significant and robust connection between E-Governance and corporate performance. In addition, the proportion of explained variance for e-governance is 68.9%, which suggests that it has a significant impact on the performance of the corporation. As a result, we can reach the following conclusion: e-Governance is an essential aspect that affects the performance of corporations.

H0.1: No effects of e governance on social and environmental impact.

Table 7: shows the results of the analysis.

Direction			β	t	Sig.	R	R ²	Adjusted R ²
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E-Governance	----->	Social and environmental impact	0.73	19.85	0.00**	0.728	0.530	0.529
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Statistically significant at $(0.05 = \alpha)$ The table prepared by author of the study. (2023)

The results of the analysis show that the null hypothesis (H0.1) cannot be supported by the data and instead give support for the alternative hypothesis, which states that there is an effect of E-Governance on social and environmental effects. The fact that the t-test result was found to be significant and the correlation coefficient was found to be high both show that the relationship between E-Governance and the influence it has on society and the environment is statistically significant and robust. In addition, the proportion of explained variance of 53% demonstrates that e-governance has a significant impact on both social and environmental impact. As a result, we can reach the following conclusion: e-governance is a significant aspect that has a significant influence on the impact both on society and on the environment.

H0.2: There is no impact of E-Governance on Innovation and creativity.

Table 8: shows the results of the analysis.

Direction			β	t	Sig.	R	R ²	Adjusted R ²
E-Governance	----->	Innovation and creativity	0.776	22.96	0.00**	0.776	0.602	0.601

Statistically significant at $(0.05 = \alpha)$ The table prepared by author of the study. (2023)

The findings of the investigation indicate that the null hypothesis (H0.2) should not be accepted. Instead, the findings lend credence to the alternative hypothesis, which states that there is an influence of E-Governance on innovation and creativity. The fact that the t-test value was found to be significant and the correlation coefficient was found to be high both show that the association between E-Governance and innovative and creative thinking is statistically significant and robust. In addition, the percentage of variance explained by e-governance is 60.2%, which suggests that it has a significant influence on creative endeavors and innovative practices. As a result, we can reach the following conclusion: e-governance is an essential component that has a significant impact on originality and inventiveness.

H0.3: No effects of e governance on Employee engagement.

Table 9: shows the results of the analysis.

Direction			β	t	Sig.	R	R ²	Adjusted R ²
E-Governance	----->	Employee engagement	0.76	21.69	0.00**	0.758	0.574	0.573

Statistically significant at $(0.05 = \alpha)$ The table prepared by author of the study. (2023)

The results of the analysis, which were based on the information that was supplied, reveal that there is an effect of E-Governance on employee engagement, which refutes the hypothesis that there is no such effect (H0.3). The fact that the t-test value was found to be significant and the correlation coefficient was found to be high both show that the association between E-Governance and employee engagement is statistically significant and robust. In addition, the percentage of variance that can be explained, which comes in at 57.4%, suggests that E-Governance has a significant effect on employee engagement. As a result, the fact that E-Governance is an important component that influences employee engagement may be concluded.

5 Discussions

The discussion of the research's data provides support for the study assumptions, which imply that E-Governance has a favorable influence on business performance, including social and environmental impact, innovation and creativity, and employee engagement. The finding that E-Governance, which includes ERP, CRM, and Online Collaboration Tools, has a statistically significant and strong relationship with the dependent variable, the company's performance, aligns with the literature on the importance of E-Governance in enhancing organizational performance, as cited on the previous studies. In addition, the conceptual framework of the study aligns with the literature on the dependent variables. These variables include employee engagement, innovation and creativity, and social and environmental impact, all of which contribute significantly to a company's overall performance. As a consequence, the hypotheses of the study, as well as the most recent research in the field of organizational performance, are supported by the findings

of this research, which demonstrate a substantial positive link between E-Governance and the dependent variables. The study provides useful insights for policymakers and practitioners to design effective E-Governance strategies that promote sustainability, innovation, and engagement in organizations; however, further research is required to explore the specific mechanisms and factors that mediate the relationship between E-Governance and different performance outcomes. The outcomes of the study have shown that the null hypotheses (H0, H0.1, H0.2, and H0.3) are incorrect. These hypotheses assumed that E-Governance does not have any influence on corporate performance, social and environmental impact, innovation and creativity, and employee engagement, respectively. Instead, the results of the study lend credence to the alternative hypotheses, which contend that e-governance has a bearing that is both substantial and favorable on the aforementioned characteristics. Hence, the findings of the study give empirical evidence that E-Governance is a critical aspect in improving organizational performance. Policymakers and practitioners should build efficient E-Governance methods to increase sustainability, innovation, and participation in companies.

6 Conclusions

In conclusion, the study emphasizes the value of e-government techniques in achieving good governance, economic growth, and social inclusion. According to the findings, e-governance has a beneficial effect on a number of aspects of business performance, including employee engagement, innovation and creativity, and the impact on both society and the environment. According to the findings of the study, e-governance has the potential to improve the quality of services provided by the government, boost economic growth, and broaden social engagement. As a consequence of this, it is essential for both public administrations and commercial businesses to launch e-governance initiatives that aim to boost creativity, operational effectiveness, and overall customer happiness. The findings of the study might be used by policymakers and practitioners to develop efficient e-governance projects that promote sustainability, innovation, and involvement inside companies. Yet, more study is required if we are to get an understanding of the precise mechanisms and components that mediate the connection between e-governance and a variety of performance outcomes. The findings of the study have major implications for the implementation of e-governance in Jordan, a developing nation that has made considerable steps in the acceptance of measures to enhance economic growth and improve government services through the use of e-governance. By adopting the principles of e-governance, Jordanian government agencies and private firms may not only increase their own levels of efficiency and production but also enrich their interactions with people and consumers, leading to higher levels of trust and satisfaction. E-governance can also help to promote social inclusion by making government services and information more accessible to underserved communities. For example, people who live in remote or rural parts of the country may not have access to the same services and information as people who live in urban areas. As a result, the need of invest in e-governance projects in Jordan has been brought to light by this study. These programs are designed to stimulate innovation, increase efficiency, and boost public participation and satisfaction.

Recommendation

The following recommendations are made to assist firms in maximizing the benefits of e-governance in light of the findings of the study on the influence of e-governance on corporate performance, social and environmental impact, innovation and creativity, and employee engagement.

- o Businesses ought to put money into E-Governance technology like Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Online Collaboration Tools. These investments have the potential to improve a company's bottom line, as well as its influence on society and the environment, its innovative and creative capacity, and the level of involvement of its workforce.
- o The upper management should offer their support and commit the necessary resources in order to successfully execute E-Governance projects. Integration of the E-Governance systems with the overarching organizational plan is another important consideration.
- o In order for employees to be able to make efficient use of the e-governance systems, companies should offer sufficient possibilities for professional development and training to their staff members.
- o Those in positions of power should encourage the use of e-governance technologies so that public services

may be provided more effectively, there can be more openness, and there can be fewer instances of corrupt behavior.

o Companies should frequently analyze the efficacy of their E-Governance projects and make modifications as necessary to guarantee continual progress.

Future research

o Further study has to be carried out in order to investigate the effect that e-governance has on other aspects, such as the efficiency of financial reporting, the level of satisfaction experienced by customers, and the administration of supply chains.

O The specific context of e-governance in Jordan should also be the subject of future research, which should investigate the obstacles and possibilities associated with its implementation, as well as the ways in which it can improve the quality of services provided by the government and the level of contentment felt by its constituents. This research has the potential to give insightful information that might be helpful to organizations and officials in Jordan who are interested in maximizing the benefits of e-government.

Limitations

Notwithstanding the substantial contributions that this study has made to our understanding of the influence that E-Governance has on business performance, social and environmental impact, innovation and creativity, and employee engagement, there are several limits that should be addressed.

o The study's primary emphasis was placed on the advantageous effects of e-governance; nevertheless, it did not investigate any potential disadvantages or difficulties connected with the system's deployment. Future study needs to overcome these limitations and give a more thorough knowledge of the possible hazards and problems connected with the deployment of e-government.

O The study did not delve into the specifics of the environment of e-governance in Jordan or the Middle East region as a whole. This makes it more difficult to generalize the findings and emphasizes the requirement for more study to understand the specific difficulties and possibilities associated with implementing e-government in this location.

o The research did not investigate the influence that e-governance has had on vital topics like as financial performance, customer satisfaction, and supply chain management. These are all crucial areas that may give businesses and policymakers with useful new insights. Future study should address these gaps and give a more thorough knowledge of the influence that E-Governance has on diverse dimensions of organizational performance.

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Author Contributions

Conceptualization, Dina Alkhodary; methodology Elias R. Jreissat; formal analysis, Zaid Saidat; investigation, Hussam Ali and Elina F. Hasan; resources, Elias R. Jreissat; Elina F. Hasan writing—original draft preparation, Dina Alkhodary writing—review and editing, Hussam Ali and Zaid Saidat, authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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