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Research Paper

The Impact of E-Government on Economic Recovery in Lebanon

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Abstract

This study investigates the impact of e-Government implementation in the public sector on economic recovery in Lebanon. Utilising a mixed-methods approach, the study examines key factors such as service delivery, transparency, citizen engagement, data management, technology, financial management, digital skills, and their influence on economic recovery. Data was collected through stakeholder surveys, governmental reports, and secondary sources, providing a comprehensive analysis. The findings reveal significant correlations, with transparency and accountability emerging as critical drivers of economic growth. Effective financial management and sustainability practices also play a substantial role in fostering economic resilience. The study highlights the importance of robust data management and cybersecurity measures in creating a secure and efficient public sector environment. Capacity building and digital skills development are vital for empowering the workforce and fostering innovation, contributing significantly to economic recovery. Despite limitations such as data availability and the specific focus on Lebanon, the research offers valuable insights for policymakers and stakeholders. Recommendations include investing in comprehensive e-Government frameworks, enhancing data security, and promoting public engagement through transparent practices. Further exploration of longitudinal impacts and comparative analyses is suggested to enhance the generalizability of the findings. In conclusion, e-Government implementation in Lebanon's public sector is pivotal for economic recovery, providing a foundation for sustainable growth and resilience. This research underscores the transformative potential of e-Government in addressing Lebanon's economic challenges and driving long-term development.

Keywords:
E-Government, Economic Recovery, Transparency and Accountability, Citizen Participation, Financial Management and Sustainability.

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ورقة بحثية

أثر الحكومة الإلكترونية على الانتعاش الاقتصادي في لبنان

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المستخلص

تبحث هذه الدراسة في تأثير تنفيذ الحكومة الإلكترونية في القطاع العام على التعافي الاقتصادي في لبنان. ومن خلال استخدام منهجية مختلطة، تتناول الدراسة العوامل الرئيسية مثل تقديم الخدمات، والشفافية، ومشاركة المواطنين، وإدارة البيانات، والتكنولوجيا، والإدارة المالية، والمهارات الرقمية، وتأثيرها على التعافي الاقتصادي. تم جمع البيانات من خلال استبيانات لأصحاب المصلحة، وتقارير حكومية، ومصادر ثانوية، مما وفّر تحليلاً شاملاً. وتكشف النتائج عن وجود علاقات ارتباط ذات دلالة إحصائية، إذ برزت الشفافية والمساءلة بوصفها محركات أساسية للنمو الاقتصادي. كما تلعب الإدارة المالية الفعّالة وممارسات الاستدامة دورًا كبيرًا في تعزيز القدرة على التكيّف الاقتصادي. وتسلط الدراسة الضوء على أهمية إدارة البيانات بشكل قوي وتدابير الأمن السيبراني في خلق بيئة قطاع عام آمنة وفعالة. ويُعد بناء القدرات وتطوير المهارات الرقمية أمرين حاسمين لتمكين القوى العاملة وتعزيز الابتكار، مما يسهم بشكل كبير في عملية التعافي الاقتصادي. وعلى الرغم من وجود بعض القيود مثل توفر البيانات والتركيز المحدد على لبنان، فإن البحث يقدم رؤى قيّمة لصناع السياسات والمعنيين. وتشمل التوصيات الاستثمار في أطر شاملة للحكومة الإلكترونية، وتعزيز أمن البيانات، وتشجيع مشاركة الجمهور من خلال ممارسات شفافة. كما يُقترح إجراء المزيد من الدراسات الطولية والتحليلات المقارنة لتعزيز قابلية تعميم النتائج. وفي الختام، يُعتبر تنفيذ الحكومة الإلكترونية في القطاع العام في لبنان محوريًا للتعافي الاقتصادي، إذ يوفر أساسًا للنمو المستدام والمرونة. وتؤكد هذه الدراسة على الإمكانات التحولية للحكومة الإلكترونية في مواجهة التحديات الاقتصادية التي يمر بها لبنان ودفع عجلة التنمية طويلة الأمد.

الكلمات الرئيسة:

الحكومة الإلكترونية، التعافي الاقتصادي، الشفافية والمساءلة، مشاركة وانخراط المواطنين، الإدارة المالية والاستدامة

1. Introduction

E-government has appeared as a significant area within Information technology research and a central component of public service (Schaupp et al., 2017). However, officials in public organizations have understood the need to implement and deploy e-government. While some nations have successfully and quickly integrated information and communication technologies (ICTs) into their administrative and political processes, many developing countries have found it challenging to realize this need (Rijarua & Osakwe, 2023)The advent of electronic commerce and its profound influence on business operations have catalyzed the exploration of similar concepts in public administration, leading to the emergence ofe-government. (Alryalat et al., 2023). E-government fundamentally views citizens as consumers or transactional partners, seeking to streamline administrative processes, boost efficiency, and uphold transparency. (Sabani, 2021). Characterized by the use of ICT, particularly theInternet, e-government aims to revolutionize governance by introducing principles such as transparency, accountability, and citizen engagement ((Firman et al., 2024; Islam et al., 2023; Paselle, Nurrahman, et al., 2025). Moreover, it reshapes governmental interactions and service delivery mechanisms, marking a paradigm shift in administrative practices. (Malomane, 2021). In developing countries, e-government is recognized as a pivotal tool for modernization and improvement. (Kibria & Hong, 2024; Papel et al., 2024; Shkarlet et al., 2020). Its capacity to combat corruption, alleviate poverty, and enhance the provision of public services emphasizes its significance in enhancing trust and accountability between citizens and governments (Ning et al., 2021; Ullah et al., 2021). Coming to the Lebanese context, reports such as IIF (2005) point to endemic government corruption as a barrier mostly in the face of foreign and local investment. In response, the Lebanese Finance Ministry has launched the implementation of a series of reforms, one of which is the introduction of e-government practices, aimed at increasing transparency as well as combating corruption (Alaaraj et al., 2014). Despite these efforts, Lebanon lacks empirical evidence on the application of e-government and its role in advancing good governance in the public sector. This study seeks to address this by establishing the key features of e-government that are essential for effective implementation and sustainability of reform. Besides, it advocates for the strategic utilization of ICT tools as a means of combating corruption and instilling good governance culture in organizations through transparency, accountability, and efficiency in governmental operations. The study aims to answer the following main question: RQ: Does the implementation of e-government in Lebanon positively affect economic recovery? The main research question is divided into several sub-questions as follows,

RQ1: What is the existing status of e-government implementation in Lebanon's public sector?,

RQ2: What are Lebanon's key economic challenges, and how are they interconnectedwith governance and public service delivery?,

RQ3: How does e-government modernize administrative processes within the public sector,particularly in terms of efficiency and transparency?,

RQ4: What are the potential obstacles to successful e-government application in Lebanon, including infrastructure limitations and digital literacy levels?,

RQ5: How can we engage citizens to enhance the effectiveness of e-government initiatives?,

RQ6: How do cybersecurity concerns impact the implementation of e-government solutions, andwhat measures can be taken to mitigate risks?

RQ7: How do e-government strategies contribute to attracting investment and fostering businessgrowth in Lebanon?

RQ8: What lessons can be learned from other countries' experiences with e-governmentimplementation, and how can they be applied to the Lebanese context?

1.1. Purpose of the Study

The current study's aim is to investigate the influence of e-government implementation within the Lebanese public sector on the country's economic recovery amidstongoing socio-political challenges. To achieve this objective, the researcher will examine the status of e-government initiatives current in Lebanon and their effectiveness in stimulating economic growth and development.

This study looks to provide a comprehensive comprehension of how e-government strategies contribute to economic recovery in Lebanon.

The main objectives of the current study are as follows.

- To assess the current implementation status of e-government in Lebanon's public sectorand its alignment with economic recovery objectives.
- To analyze Lebanon's economic challenges and their relationship to governance and public service delivery.
- To assess the impact of e-government on administrative processes, efficiency, andtransparency within the public sector.
- To identify and assess the barriers hindering the successful adoption of e-governmentsolutions in Lebanon, including infrastructure, digital literacy, and cybersecurity concerns.
- To explore strategies for enhancing citizen engagement in e-government initiatives topromote accountability and inclusivity.
- To investigate the e-government role in attracting investment and fostering businessgrowth in Lebanon's economy.

The aforementioned research questions and objectives aim to comprehensively realize the relationship between e-government implementation and economic recovery in Lebanon, addressing various dimensions such as governance, technology, and socio-economic factors.

Besides the introduction of the study, the study will comprise five further sections. Section 2, the literature review, will delve into the study's theoretical

foundations and guiding principles by analysing past and current literature on the impact of e-government on economic recovery in Lebanon. This section will also present the conceptual model of the study, and it will also present the hypothesis. In section 3, the research methodology, the researcher will outline the research approach, focusing on conducting a survey and distributing a questionnaire to individuals involved in the Lebanese public sector. Section 4, findings and results, will analyse the data collected from respondents' survey responses, presenting key themes and patterns related to the study's topic. Finally, Section 5, conclusions, Recommendations, and limitations, will present the principal conclusions of the research and discuss their implications. Additionally, it will address the study's significant limitations.

2. Literature Review

2.1. Definition and Conceptualization of E-Government

The e-government concept is an ever-evolving field, underlining the scholarly interest in fullycomprehending its scope (Grigalashvili, 2022). A thorough understanding of the general concept of government is necessary for a more precise definition of e-government. (Fernández et al., 2023) Government is defined as a powerful amalgamation of structures, functions, and objectives. This suggests that e-government extends beyond emails, websites, or internet-based transactions. It involves the electronic management of governmental structures and functions using ICT to achieve objectiveslike enhanced public services. The concept of government refers to the tools used to implement governmental processes and events, specifically applying guidelines under public administration principles. (Alqudah & Muradkhanli, 2021). One of the electronic business forms in governance is called e-government governance, which refers to the procedures and frameworks required to work with business partners, provide electronic services to the public, and conduct electronic transactions inside an organization (Wu et al., 2024) . E-government is the use of the Internet, particularly, to improve government, or, to put it another way, to conduct different government transactions electronically (Agarwal & Maiti, 2020; Field et al., 2003). Cifuentes-Faura explains that using ICT to improve the delivery of government services to the public sector is known as e-government.

This entails proposing to organisations and residents greener access to government information and services to facilitate the effective delivery of public services, engage citizens and business partners, and improve government employees' performance. E-government, which enhances concepts such as accountability, transparency, and citizen participation in government performance measurement, is seen as a revolution in public administration (Paselle, Indarto, et al., 2025). As Philip et al. (2007) E-government re-engineers information and service delivery and is a significant aspect of redesigning basic interactions between government and stakeholders. International organizations such as the World Bank have funded and supported programs intended to aid in the delivery of assistance to

countries such as Lebanon. E-government, in accordance with the World Bank, can be used for many different purposes, including making government services more accessible to the public, improving relations with industry and business, and empowering citizens. Information is available to citizens, and government administration is more effective (Min et al., 2013). The primary purpose of e-government is to efficiently meet the expectations and needs of citizens by simplifying their interaction with various web-based services (Hashim, 2024). E-government also provides transparency, accountability, effectiveness, and efficiency in delivering government services (Ionescu, 2013b).

2.2. Current Status of E-Government Implementation in Lebanon

2.2.1. Barriers to Successful E-Government Adoption in Lebanon

Numerous scholarly works have delved into the complexities surrounding the impediments to developing a robust information system infrastructure. (Listyaningsih & Hidayat, 2023; Matitah et al., 2021; Seljan et al., 2020)Many challenges hindering the adoption of e-government echo those encountered in e-commerce and e-business. (Glyptis et al., 2020)These barriers, ranging from management structures to the availability of skilled personnel, pose significant obstacles to public administrations' realizingthe full potential of e-government technologies.

The success of e-government initiatives hinges not solely on technological prowess but also on effective support structures, comprehensive IT training within the public sector, a proficient IT workforce, public endorsement, robust infrastructure, and adequate resource allocation. (Astuti et al., 2024; Wijaya et al., 2024). In Lebanon, the Dawlati project, spearheaded by the Office of the Minister of State for Administrative Reform, has undertaken multiple studies and research endeavors to discern the specific barriers hampering e-government expansion (Haykal, 2022).

These investigations have identified critical obstacles in Lebanon's e-government landscape, including deficient internet and telecommunication infrastructure, prohibitive costs, regulatory gaps, and trust deficits. Economic factors further complicate matters. (Ahmed, 2012)(Sebastian & Supriya, 2013)Financial constraints, coupled with competing priorities such as education and healthcare, and socioeconomic challenges like poverty and debt, impede the adoption of e-government within public administrations.

The government of Lebanon has initiated a wide-ranging approach to address these matters. Measures include drafting an effective legal regime and enforcing user protection laws, together with mass-scale awareness campaigns to build greater public confidence in e-government (Wu et al., 2024). These campaigns aim to disseminate information about the benefits of e-government technologies for citizens and public institutions.

Besides, significant efforts have been directed towards the upgradation of communication infrastructure, with the Telecom Regulatory Authority leading the efforts to uprade infrastructure and formulate a national broadband plan (El-Baba,

2015). Partnerships, such as the Partnership for Lebanon (PFL), have also contributed by establishing Lebanon's first InternetExchange Point to enhance internet speed. Additionally, initiatives like the "Dialogue on Education" and "School in a Box," undertaken in collaboration with the Office of the Prime Minister, seek to integrate ICT into education, bolstering workforce training and educational outcomes. (El-Baba, 2015). These concerted efforts underscore Lebanon's commitment to overcoming the barriers to e-government adoption and fostering a conduciveenvironment for technological advancement.

2.2.2. Role of E-Government in Modernizing Administrative Processes

A key component of the push for administrative modernization is e-government. It encompasses enhancing processes within authorities, between different authorities, andthe interactions between the government, its citizens, and businesses. This leads to an informed society driven mainly by electronic means. However, it is important to note that E-Government is just one aspect of a larger framework in the journey towards a fully developed information society. The rapid pace of technological progress and increasing citizens' sophistication have created a demand for new, diverse, faster, superior, and cost-effective services. The proliferation of new technologies spurs the evolution of a modern public administration. However, for these technologies to be successfully implemented, changes in legislation are also necessary(Kuleto et al., n.d.). E-Government is a promising strategy for improving communication between citizens and the state. It can make administrative processes more transparent and efficient (Rouibah et al., 2024). Integrating e-government into public administration procedures is one of the most important developments in public administration in the twenty-first century. It presents chances for a more effective, transparent, inclusive, and citizen-friendly administration. This administration can offer end-to-end, individualized, borderless, digital public services. Modern information technology and creative legislative strategies are needed to create and provide better services that satisfy the requirements and demands of modern society. E-Government has already demonstrated its power as a strategic tool for transforming the public sector(Garayová, 2021). By providing online public services, e-government aims to bring governments closer to businesses and citizens. Registration for government services like healthcare, education, or job perks is one of these services for people. E-government services for enterprises can include information and assistance on sector-specific legislation and online alerts for public procurements or funding possibilities. (Teodora Vătuiu, 2008). Effective use of e-commerce technology can improve individuals' access to public information, facilitate communication with government agencies, and increase the ability of local, regional, national, and supranational governments to respond to the needs and expectations of their constituents now and in the future (AlGhatam et al., 2024). E-Government is pivotal in modernizing administrative processes, particularly enhancing efficiency and transparency. Both (Olumekor et al., 2024) and (Udoh, 2024) highlight how e-government can raise transparency and enhance service quality in the public sector.

In order to achieve economic efficiency and cost reduction, effective e-government can help modernize public sector administration, improve the effectiveness of national agencies and government operations, enable citizens to participate in social and political life, and give citizens easy online access to public finance information. Most importantly, it brings administrations closer to businesses and citizens and makes administrative processes more transparent and effective.

2.3. Conceptual Model

This study aimed to investigate the influence of e-government implementation on economic recovery in Lebanon. Central to our study is economic recovery, which encompasses various indicators reflecting the country's economy's overall growth, development, and stability. Alongside economic recovery, we examine seven independent variables representing different dimensions of e-government implementation within the Lebanese public sector. According to the review and discussion presented in the study's literature review, the study variables have been determined, and the hypotheses have been formulated. The conceptual model in Figure 1 was proposed.

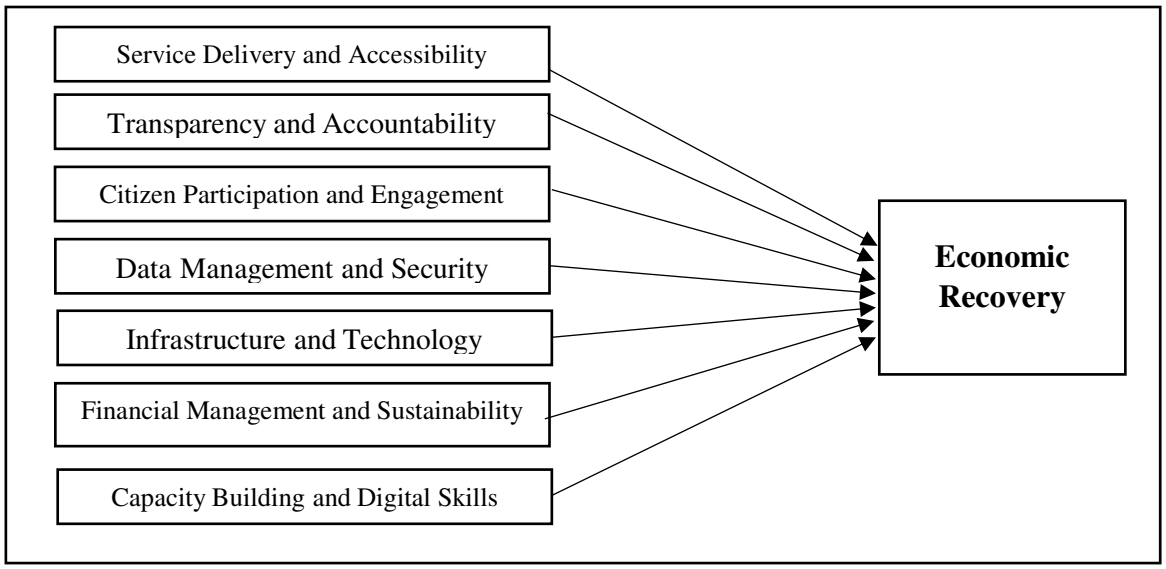


Figure 1 Conceptual Model of the study

The variables demonstrated contain service delivery and access, infrastructure and technology, financial management and sustainability, transparency and accountability, citizens' engagement and participation, data protection and management, capacity development, and digital competency. By closely examining and explaining these variables, our study aims to offer insight into ways in which e-government projects can be linked to economic recovery, with practical applications for Lebanese policymakers and stakeholders. Independent variables are placed on the left side of the model, and dependent variables on the right side. In the regressions that we'll be conducting in this research, we'll be examining the effect of all of the

independent variables on the dependent variable, and also the effect of each of the independent variables on the dependent variable. The Hypothesis of the study as follows:

2.3.1. Main Hypothesis

- H0: There is no significant relationship between the introduction of e-governmentin the public sector in Lebanon and economic recovery.
- H1: The introduction of e-government in the public sector in Lebanon has apositive effect on economic recovery.

2.3.2. Minor Hypotheses

2.3.2.1.Service Delivery and Accessibility:

- H0: There is no important positive relationship between the level of delivery, accessibility of e-government services, and economic recovery in Lebanon.
- H1: There is a significant positive relationship between the level of delivery, accessibility of e-government services, and economic recovery in Lebanon.

2.3.2.2. Transparency and Accountability:

- H0: There is no significant relationship between the transparency and accountability of e-government systems and economic recoveryin Lebanon.
- H1: There is a significant positive relationship betweenthe transparency and accountability of e-government systems and economic recovery in Lebanon.

2.3.2.3. Citizen Participation and Engagement:

- H0: There is no significant relationship between citizen participation and engagement through e-government platforms and economic recovery in Lebanon.
- H1: A significant positive relationship exists betweencitizen participation and engagement through e-government platforms and economic recovery in Lebanon.

2.3.2.4.Data Management and Security:

- H0: There is no significant relationship between the effectiveness of data management and security in e-government systems andeconomic recovery in Lebanon.
- H1: There is a significant positive relationship betweenthe effectiveness of data management and security in e-government systems and economic recovery in Lebanon.

2.3.2.5.Infrastructure and Technology:

- H0: There is no significant relationship between the infrastructure and technology supporting e-government initiatives and economicrecovery in Lebanon.
- H1: There is a significant positive relationship betweenthe infrastructure and technology supporting e-government initiatives and economic recovery in Lebanon.

2.3.2.6.Financial Management and Sustainability:

- H0: There is no significant relationship between financial management practices, the sustainability of e-government projects, and economic recovery in Lebanon.
- H1: There is a significant positive relationship between financial management practices, the sustainability of e-government projects, and economic recovery in Lebanon.

2.3.2.7.Capacity Building and Digital Skills:

- H0: There is no significant relationship between the level ofcapacity building, digital skills development, and economic recovery in Lebanon.
- H1: There is a significant positive relationship between the level of capacity building and digital skills development and economic recovery in Lebanon.

3. Methodology/ Approach Adopted and Rationale

In this study, we adopt a comprehensive approach that integrates both qualitative and quantitativemethodologies to investigate the impact of e-Government in the public sector on economic recovery in Lebanon. The rationale for employing a mixed-methods approach lies in recognizing the multifaceted nature of the research topic and the need to capture its nuances from diverse perspectives.

Quantitative research has the advantage of gathering systematically numeric data, which could be analyzed statistically. It gives us a chance to gauge key variables and inspect interrelations among different determinants of e-Government implementation and economic recovery. With surveys or distribution of structured questionnaires among stakeholders of the public sector and relevant institutions, we aim to collect reliable and valid quantitative data for our analysis.

Conversely, qualitative research provides greater in-depth understanding of the latent factors and contextual mechanisms influencing e-government adoption and its role in economic recovery. Document analysis seeks to unveil rich information on the perspectives of stakeholders, organizational problems, and socio-economic forces shaping the e-government programs in Lebanon.

The interdisciplinary character of e-government issues is putting major weight on the application of a versatile and elastic research philosophy. As Galliers (1992) differentiates, the selection of research approaches is to be decided by the research

question and purpose and the richness of the research context. By integrating qualitative and quantitative strategies, we intend to triangulate evidence, enhance the credibility of our results, and provide an integrative perspective of the research phenomenon.

Research methodology is pivotal in guiding the systematic collection, analysis, and interpretation of data. According to Kothari (2004), the choice of a good methodology is relevant in ascertaining the validity and reliability of research results. Utilization of qualitative and quantitative methodologies within this study is guided by the need to address the research questions comprehensively and present actionable insights to policymakers, practitioners, and researchers in e-Government and economic development.

Generally, the mixed-methods approach used in the present study reflects our commitment to creating thorough and well-researched studies on the role of e-Government in Lebanon's economic recovery. Through the complementary blending of qualitative and quantitative methods, we intend to submit a deep reflection of the complexities and contribute to extending the frontiers in this important line of study.

3.1.Project Scope Statement

The scope statement of the study establishes our research project boundaries and objectives, outlining what is to be included and what is not to be included in our research (Bryman et al., 2015). The scope of this project encompasses:

3.1.1. Focus

Our study will analyse the impact of e-government implementation and deployment on the Lebanese public sector's contribution to the economic recovery of Lebanon amidst current socio-political issues. We specifically want to understand how e-government initiatives are helping to improve governance, transparency, and efficiency for economic development and growth.

3.1.2. Sample

Our survey will aim at a diverse sample of the Lebanese public sector stakeholders, such as government officials, policymakers, e-government experts, citizens, and business users. The survey shall be distributed to 300 respondents to ensure that we have a complete representation of opinions. The sample size will be calculated on statistical grounds in order to achieve representativeness and reliability of the result. The survey responses will give us valuable insights with respect to the efficacy and pitfalls of the execution of e-government in Lebanon

3.1.3. Data Collection

Data collection will primarily involve collecting surveys from selected stakeholders. We will get permission and cooperation from the involved authorities and institutions to get the desired data and respondents. Questionnaires will be

distributed electronically through secure websites in accordance with ethical guidelines and privacy policies. Data collection will continue for over 3 weeks.

3.1.4. Data Analysis

Both qualitative and quantitative data analysis methods will be used in analyzing data gathered. Quantitative analysis will entail statistical procedures for scanning for trends, patterns, and correlations, whereas qualitative analysis will entail thematic coding and interpretation of the answers to the survey. The combination of the analysis techniques will allow for a detailed appreciation of the research phenomenon. Quantitative data analysis will be conducted using SPSS software for reliability and accuracy.

3.1.5. Time Frame

The research will be conducted within a span of 8 weeks. The timeframe will encompass all the phases of the research, from literature review to data collection, analysis, interpretation, and reporting, with definable milestones and timelines for each phase. Effective time management will allow the research to be finished in a timely manner without affecting the quality and validity of the findings.

4. Findings and Results

4.1. Findings on the Correlation between Variables

To examine the relationships between the variables in this study, the Pearson Correlation Test assesses the linear association between pairs of variables. The correlation coefficient,*r*, ranges from -1 to +1, where values closer to +1 indicate a strong positive relationship, and values closer to -1 indicate a strong negative relationship. A correlation coefficient of 0 signifiesno linear relationship between the variables.

The analysis focuses on the correlation between economic recovery in Lebanon (the dependent variable) and various independent variables related to implementing e-government. The Pearson Correlation Test, conducted using SPSS software, shows significant positive correlations between economic recovery and all independent variables.

Significance Level (p-value): A p-value of less than 0.05 generally indicates that the correlation is statistically significant. In this case, all p-values are 0.000, which is far below the threshold of 0.05, indicating that all correlations are statistically significant atthe 0.01 level.

The results show that all tested hypotheses (H1 to H7) are accepted based on the significant positive correlations found between each independent variable related to e-government implementation and economic recovery in Lebanon. The p-values of 0.000 indicate that the relationships are highly significant, providing strong evidence that implementing E-Government in Lebanon positively impacts various aspects of economic recovery.

4.2. Findings on the Relationship between the Dependent Variable (Economic Recovery inLebanon) and Combined Independent Variables

This section presents the regression analysis results, illustrating the causal relationship between thedependent variable, Economic Recovery in Lebanon, and all the independent variables. The findings are as follows:

- **R value (0.821)**: This indicates a strong correlation between the dependent and combined independent variables. A value closer to 1 signifies a high degree of correlation.
- **R-squared (0.674)**: This value suggests that the independent variables can explain approximately 67.4% of Lebanon's economic recovery variation. This highR-squared value implies that the independent variables are good predictors of changes in the dependent variable.
- **Adjusted R-square (0.666)**: Adjusted R-square corrects the R-square value for the number of predictors in the model. An adjusted R-squared of 0.666 indicates that after accounting for the number of predictors, the independent variables still explain 66.6% ofthe variation in the dependent variable.
- **Standard error of estimate (0.352141)**: This value represents the standard deviation of the regression residuals. A lower standard error indicates that the observed data points are closer to the fitted line, suggesting a good fit of the regression model.
- **Degrees of freedom (7)**: This indicates the number of independent variables in theregression model.
- **Mean square (10.935837)**: This value is the mean of the squared differences between the observed and predicted values, providing an estimate of the overall variance explained bythe model.
- **F value (88.189867)**: A high F value indicates that the model fits the data well. It implies that the independent variables significantly predict the dependent variable. In thiscase, the F value is substantially higher than the threshold of 3, confirming the model's strength.
- **Significance (p-value) (6.14E-69)**: The p-value is significantly less than 0.05, indicatingthat the independent variables collectively significantly influence the dependent variable. This very low p-value suggests strong evidence against the null hypothesis, supporting the alternative hypothesis that the independent variables impact Economic Recovery in Lebanon.
- **Average t (2.757)**: The average t-statistic, which is greater than 2, indicates that the coefficients of the independent variables are significantly different from zero, affirmingtheir effect on the dependent variable.

These findings confirm that the independent variables—service Delivery and Accessibility, Transparency and Accountability, Citizen Participation and Engagement, Data Management and Security, Infrastructure and Technology, Financial Management and Sustainability, and Capacity Building and Digital

Skills—are significant predictors of economic recovery in Lebanon. The results support the research hypothesis that improvements in these areas contribute to economic recovery.

5. Conclusion and Recommendations

5.1. Conclusion

In conclusion, the present study has investigated the impact of public sector e-Government projects on Lebanon's economic revival. The findings highlight the multi-dimensionality of economic progress and reinforce the importance of several key determinants that impact this revival.

1. Financial Management and Sustainability

E-Government initiatives are crucial to develop sustainability and financial management by making transparency and resource use efficiency a reality. Through e-transformation in the field of finance and following sustainable economic policies, Lebanon can protect itself from economic shocks and develop long-term growth. By following these actions made feasible through e-Government, the credit rating of the country is improved, foreign investment is encouraged, and healthy economic growth is realised.

2. Capacity Building and Digital Skills:

Capacity development and digital capacity building prioritise investment in e-government operations. Developing a high-quality workforce capable of utilising digital technologies can drive innovation, productivity, and new economic possibilities. E-government services offer training and infrastructure essential to conform to the demands of the global economy and maintain a competitive advantage. Utilising these capacities effectively can help in solving various issues facing societies

3. Service Delivery and Accessibility:

Enhancing delivery and access to services by e-government is the core of economic growth and stability. Effective and accessible government services, enabled through electronic media, promote business practice and the quality of citizens' lives. E-government can yield significant economic dividends and must be put on the agenda priority.

4. Transparency and Accountability:

E-government programs are at the forefront in ensuring transparency and accountability, which are the pillars of good governance and economic revitalization. E-government steps and anti-corruption policies taken ensure trust, foreign investment, and value for public funds. E-government promotes a culture of integrity and trust, which is essential for long-term economic prosperity.

5. Citizen Participation and Engagement:

E-Government websites provide chances for active involvement of citizens and contribution towards governance processes, essential in pursuing representative

and inclusive policy-making. E-Government provides chances for people's involvement through virtual forums, budget participation, and community projects, empowering citizens and making them feel owning and responsible for national development. Participative character of this sort, supported by e-Government, can steady the economic condition and set recovery in motion.

6. Infrastructure and Technology:

It takes investment in e-government technology and infrastructure to facilitate economic activity and productivity in general. Increased digital connectivity and e-government services offer a good platform for business operations and access to markets. The immediate effect could be minimal, but the long-run return on such investments is enormous, leading to economic growth and resilience.

7. Data Management and Security:

Strong data management and protection, enabled through e-Government, are fundamental to economic recovery. Access to secure, consistent, and reliable data through digital channels works to underpin decision-making, mitigate risks, and improve the productivity of operations. Prior investment in e-Government data infrastructure and cybersecurity enables Lebanon to establish trust with stakeholders and make the economic environment more predictable.

In summary, the role of e-Government strategies to Lebanon's economic growth is immense and extensive. By meeting the most salient fields emphasized here—finances management, capacity building, delivery of services, transparency, people's participation, infrastructure, and data administration—through e-Government, Lebanon can enhance its economic stability and development. Policymakers and stakeholders must integrate these findings into their strategic planning to foster a strong and resilient economy that can face upcoming challenges and grasp emerging opportunities.

Actionable suggestions derived from these conclusions are presented in the following section. These suggestions are intended to guide Lebanon on the path to robust and inclusive economic growth, ensuring the nation's bright and sustainable future.

5.2. Recommendations

Some strategic recommendations from the conclusions of the research on the impact of e-Government in the public sector on the economic recovery of Lebanon that can be provided to enhance the economic strength and development of Lebanon are as follows. These recommendations are made with the aim of leveraging e-Government practices to address areas pinpointed in the study.

1. Strengthen Financial Management and Sustainability:

Lebanon needs to accord precedence to the application of e-Government solutions to its financial management operations in the interests of transparency, efficiency,

and accountability. End-to-end electronic financial management systems can automate budgeting, expenditure monitoring, and financial reporting. Moreover, sustainable financial practices and policies with e-Government systems can be adopted to increase economic resilience and foreign investment.

2. Enhance Capacity Building and Digital Skills:

Investment in capacity building and digital skills development is essential in empowering the workforce and executing the rollout of e-Government programs. The government institutions need to collaborate with Lebanon should make sure that it integrates e-Government solutions into fiscal management processes in a bid to improve transparency, efficiency, and accountability. Comprehensive digital financial management systems have the ability to automate budgeting, expenditure tracking, as well as financial reporting. Besides, the implementation of sustainable budgetary policies and procedures, augmented by e-Government technologies, can establish economic stability and promote foreign investment.

3. Improve Service Delivery and Accessibility:

To expand the provision of public services and access, Lebanon needs to establish and enhance its e-government portals. This entails creating accessible, efficient, and simple-to-use electronic services that meet citizens' and business expectations. Enabling government services online, reducing bureaucracy, and allowing interoperable government systems can greatly advance the provision of services and ease economic development.

4. Promote Transparency and Accountability:

E-Government initiative has to be utilized to establish transparency and accountability within the public service. Utilization of government software such as e-procurement software and transparency websites will prevent corruption and establish trust among the public. They will bring in foreign investment, ensure the proper use of public funds, and ensure good governance, which are the foundations to support long-term economic recovery.

5. Foster Citizen Participation and Engagement:

Lebanon needs to develop and promote e-Government portals that allow active citizen involvement and contribution. Participatory forums, budget websites, and e-consultation websites are media through which citizens can take part in decision-making. Opening up government to participation through such online media will render government policies responsive and inclusive, and will develop a sense of ownership and shared responsibility for national development.

6. Invest in Infrastructure and Technology:

Continuing significant investments in digital infrastructure and technology are required to facilitate economic activity and E-Government efforts. These include the enhancement of broadband access, robust IT infrastructure, and the securing of access to digital services in urban and rural areas. Lebanon can enhance

productivity, simplify the doing of business, and access technological innovation through the development of a robust digital foundation.

7. Prioritize Data Management and Security:
Lebanon will have to put in place robust data management and cybersecurity to ensure the security and integrity of electronic data. In order to have proper data governance rules, standardized storage and sharing practices, and data privacy culture are prerequisites. This way, threats will be minimized, sensitive information will be protected, and stakeholders' trust will be built, ultimately paving the way for a healthy economic environment.

8. Develop a Strategic Roadmap for E-Government Implementation:
Lebanon must formulate a strategic plan for a phased implementation of e-government programs. The plan must have well-articulated goals, timelines, and performance indicators to monitor the progress and hold people accountable. Having a clear strategy will guarantee coordination among government institutions, efficient utilization of resources, and quantifiable results.

9. Collaborate with International Partners:
Having partnerships with international organizations, donor agencies, and technology partners, Lebanon is able to gain the support and expertise necessary to make its e-Government efforts move forward. With a reliance on international best practices, access to funding opportunities and knowledge exchange programs, it is possible to accelerate the development and implementation of effective e-government solutions.

10. Monitor and Evaluate E-Government Initiatives:
It is important to have mechanisms in place for ongoing monitoring and assessment of e-government projects to guarantee their effectiveness and sustainability. Routine assessments, feedback mechanisms, and impact analyses need to be carried out to detect areas of improvement and gauge the success of digital transformation initiatives. This process will allow Lebanon to develop and adjust its e-government policy in the long term.

5.3.Implications of the study and limitations

This study investigated the influence of e-government implementation on economic recovery in Lebanon. Central to our study is economic recovery, which encompasses various indicators reflecting the country's economy's overall growth, development, and stability. Alongside economic recovery. This research is significant due to it offers crucial insights and original recommendations regarding the role of e-Government in fostering economic recovery within the Lebanese public sector. By identifying effective e-Government strategies, this study aimed to guide policymakers and stakeholders on leveraging digital technologies to mitigate the influence of socio-political challenges and promote sustainable economic growth in Lebanon.

Furthermore, the current study contributed to the global discourse on e-Government by offering insights into its application in a context characterized by complex socio-political dynamics and economic recovery efforts.

Despite caution to ensure a representative sample of the stakeholders, the application of a purposive sampling technique and web- questionnaires by the study may have excluded some low digital literacy or with limited access ot he internet.

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