

How Flexible Forms of Work and Digital Transformation Affected the Organization, Efficiency, and Productivity of Greek Firms during the Period 2020-2023

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How to cite this paper: Iliopoulos, G., Rodosthenous, M., & Sykianakis, N. (2026). How Flexible Forms of Work and Digital Transformation Affected the Organization, Efficiency, and Productivity of Greek Firms during the Period 2020-2023. *Theoretical Economics Letters*, 16, 817-838.

<https://doi.org/10.4236/tel.2026.164045>

Received: April 19, 2026

Accepted: August 24, 2026

Published: August 27, 2026

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Abstract

2020-2023 is a pivotal moment for the contemporary business landscape, as the COVID-19 pandemic caused significant disruptions and forced companies to adapt quickly to new business models and organizational structures. In this context, flexible arrangements and digital transformation proved to be important tools in ensuring business continuity and maintaining performance. The aim of this study is to examine the empirical effect of the two mentioned factors on organizational performance, in terms of efficiency, productivity and structural adaptation of the enterprises in Greece. The study is based on data from the questionnaire answered by high-level staff of 89 large Greek companies which use IFRS. The results are subjective, based on respondents' perceptions of organizational productivity, and not necessarily based on financial or operational performance indicators. The institutional context of the sample is IFRS compliant but does not imply reliability of the survey measured by the reliability of the instruments. Descriptive statistical analysis, reliability test, and multiple regression models are used to analyze the individual and combined effects of flexible work and digital transformation on productivity. The results show that digital transformation is the most impactful and positive predictor of productivity, showing a strong positive link. Flexible work arrangements, on the other hand, have a positive, but conditional effect, as they are effective in firms which are more digitally mature. Furthermore, the findings show that the two factors work together, with the integration of both factors resulting in better performance outcomes. The study adds value to the body of literature by bringing together HR practices, digital skills and performance within one analytical framework, and providing valuable practical lessons for improving organizational resilience in the aftermath of the crisis.

Keywords

Digital Transformation, Flexible Work Arrangements, Organizational Productivity, Business Resilience, Greek Firms

1. Introduction

The 2020-2023 period was one of the most tumultuous in the business organizations in recent times. The COVID-19 pandemic was not just a public health crisis; it was an organizational, technological and managerial revolution that brought about a significant change in the way business is conducted around the world (Kaftan et al., 2023). In unprecedented uncertainty, organizations were forced to restructure their business models, decision-making processes and HR management practices in order to retain continuity in business operations (Challoumis et al., 2025). As a result, traditional working arrangements were soon replaced by flexible working arrangements, in particular with regard to teleworking and hybrid working models, which were proven to be key tools in maintaining organizational productivity, coordination, and operational continuity in the post-pandemic era (Chatzinikolaou & Vlados, 2024; Plimakis et al., 2021). At the same time, the pandemic has catalysed digital transformation at an unprecedented rate, compelling companies to invest in cloud computing, enterprise information systems, digital communication platforms and automation technologies to ensure business continuity and maintain the performance of organisations in a remote working environment (Söderholm, 2020). This shift was not only technological, but also organizational and cultural, impacting the way work is done, how it is managed, how it is measured, and how its priorities are set (Houqe, 2018). In such a changing landscape, organizational resilience became a key factor in achieving long-term competitiveness, with companies with higher levels of preparedness and organizational flexibility showing better adaptability to disruption without compromising productivity and profitability (Johri, 2024).

Although the literature on flexible working arrangements and the digital transformation (DX) has developed rapidly since the onset of the COVID-19 pandemic, there were some important gaps. The two phenomena of organizations are explored in most previous studies separately, focusing either on flexible work practices or on digital transformation, but not on the combined effect of the two on organizational performance (Chowdhury et al., 2022). In addition, there is little empirical evidence on the effectiveness of flexible work. Some of the research points to higher productivity, work-life balance, and autonomy for employees with telework, while others point to coordination problems, decreased organizational cohesion, communication barriers, and/or productivity losses under specific organizational circumstances (Nasreen et al., 2025; Do et al., 2025). The conflicting findings indicate that the success and effectiveness of flexible working is not only dependent on the nature of the working but is also dependent on com-

plementary organizational capacities and capabilities with a particular focus on digital maturity.

Another constraint relates to geographic and institutional scope of current evidence. Although the Greek economy is characterized by a distinct economic fabric and significant technological readiness, organizational capacity and sectoral differences in firms, there is still limited empirical research that investigates the relationship between flexible work arrangements and digitalization in the Greek business environment (Kaftan et al., 2023; Sargiotis, 2024). Furthermore, the study provides minimal attention to firms that follow the International Financial Reporting Standards (IFRS), which offer greater transparency, comparability and reliability in financial and organizational reporting, which enhances the quality of empirical research (Amankwah-Amoah et al., 2021; Didier et al., 2021). It is especially relevant to consider the role of technological capacity and organization flexibility in shaping firms' efficiency, productivity, and organizational resilience during the exceptional uncertainty period as a result of the pandemic, as these gaps will likely have significant implications during a period in which they are simultaneously expected to be higher and less widespread than in previous years.

In this context, the present study examines the impacts of flexible working arrangements and digital transformation on the organization, efficiency and productivity of Greek firms in 2020-2023. The empirical analysis is grounded upon the survey of large Greek enterprises that are implementing IFRS and aims at revealing the individual and combined impact of flexible work arrangements and digital transformation on the performance of the enterprises.

This paper has four major points of contribution. The first is the integrated analytical framework the study develops, which considers simultaneously the three elements of flexible work arrangements, digital transformation and organizational performance, a perspective that differs from that of much of the existing literature (Doukas et al., 2025; Ziogas & Metaxas, 2021). Second, it offers fresh empirical data from a relatively little studied Greek business context, with unique institutional and economic features. Third, the study's narrow focus on large enterprises applying IFRS increases the comparability, transparency and reliability of empirical findings, while minimizing institutional differences in participating organizations (Amankwah-Amoah et al., 2021; Didier et al., 2021). Lastly, the findings offer both theoretical and practical implications as they show that investments in digital transformation and flexible working practices have a combined effect of creating organizational resilience, operational efficiency, and future competitiveness, thereby providing insights to managers and policymakers who want to boost organizational adaptability in post-crisis scenarios (Sari et al., 2025; Singh et al., 2023a; Ivanov, 2020; Sikder & Rolfe, 2023).

The rest of this paper is structured as follows: The review of literature, presentation of theoretical framework, and the development of research hypotheses are discussed in Section 2. The research methodology, sample, measurement instrument, variables, and statistical procedure is described in Section 3. The empirical

results are presented in Section 4 and discussed with the existing literature and give the theoretical and managerial implications in Section 5. Section 6 sums up the study's results, recognizes the study's limitations, and suggests future research avenues.

2. Literature Review

2.1. Flexible Work Arrangements

Teleworking and hybrid work models are some of the most notable examples of flexible work arrangements (FWAs), the main organizational responses to the COVID-19 crisis that have completely changed the conventional employment patterns (Hoffart et al., 2024). The sudden change of the physical to the remote working environment forced companies to quickly redesign the workflow, communication systems, and performance evaluation systems. In this regard, teleworking can be described as the performance of job functions outside of the traditional working environment using digital tools, whereas hybrid employment merges the use of remote and physical work, providing more flexibility and adaptability (Ma et al., 2022).

Human resource management has shown that the implementation of FWAs has been linked to a high level of changes in employee job satisfaction. Increased employee well-being and engagement have been linked to greater autonomy, an improved work-life balance, and shorter commuting time (Quansah & Hartz, 2021; Gubbins et al., 2020). Nonetheless, the above gains are not equally applicable, because personal experiences can differ based on organizational support, digital infrastructure, and managerial practices. Simultaneously, FWAs have been shown to correlate positively with productivity, especially in the knowledge-intensive industries where productivity is less tied to the physical location (Clemente-Suárez et al., 2021). The continuity of tasks and even efficiency of work with the integration of digital tools allow employees to work asynchronously in some cases (Harré et al., 2021; Settembre-Blundo et al., 2021).

However, there are significant coordination costs involved with the introduction of flexible work models. The physical scattering of teams can disrupt communication, decrease informal knowledge sharing and make the coordination of tasks more complicated. This leaves organizations to invest in digital collaboration tools, and acquire new managerial skills to curb such setbacks. The effectiveness of FWAs thus depends on the ability of firms to balance flexibility with structured coordination mechanisms (Singh et al., 2023b).

One of the critical debates in the literature is the long-term effect of flexible work regarding productivity. Although a number of studies indicate that productivity is increased as a result of greater flexibility and autonomy, other studies indicate that productivity would be affected negatively with employee burnout, social isolation, and decline in organizational cohesion. Such dangers are especially acute in the context of long-distance remote work, where the absence of boundaries between professional and personal lives can have harmful effects on mental

health. The quick shift to flexible work amid the pandemic in the Greek setting was directly connected to the more general experiences of digital transformation, which further supports the idea that the success of such an arrangement depends on the technological preparedness and adaptability of the organization.

2.2. Digital Transformation

Digital transformation is a complex process by which organizations incorporate innovative digital technologies into their operations and operations, radically change the business models, processes, and value creation mechanisms (Kaftan et al., 2023). Fundamentally, digital transformation is a process that involves the implementation of major technological platforms like cloud computing, automation systems, and enterprise resource planning (ERP) platforms (Do et al., 2025; Bulycheva et al., 2024).

Cloud technologies provide scalability, flexibility and real-time access to data and automation improves efficiency of processes by minimizing the involvement of human intervention and operational errors. ERP systems, in turn, contribute to the unification of organizational activities, enhance the coordination, information flow, and the quality of decisions (Kaftan et al., 2023).

The COVID-19 pandemic was a strong catalyst of digital transformation, compelling organizations to swiftly adopt digital tools to maintain continuity of operations (Elgin, 2025). The sudden transition to remote working and the models of digital interactions demanded companies to invest in digital infrastructure and restructure their operational processes in the conditions of the highest level of uncertainty (Ziogas & Metaxas, 2021). This acceleration, as pointed out in the dissertation was not only a technological change but a structural change that touched upon the organizational design, patterns of communication and performance management systems. Companies that could swiftly implement digital solutions were more adaptable and resilient, whereas those that lagged behind experienced a tremendous operational setback (Do et al., 2025; Zeng et al., 2022).

One of the most important aspects of digital transformation is that it directly affects the efficiency of operations. Digital integrations optimize operations and minimize transaction expenses as well as respond faster to market dynamics (Ziogas & Metaxas, 2021). Technological developments such as automation and the use of data to make decisions lead to higher productivity and a more efficient allocation of resources, thus, making organizations more agile. Nevertheless, these advantages depend on the successful fit between the use of technology and organizational strengths (Hariram et al., 2023).

In this scenario, the aspect of digital maturity becomes a crucial distinguishing variable (Challoumis et al., 2025). The dissertation offers empirical data that suggests that companies that were more digitally prepared were in a better position to capitalize on the investments in technology and transform it into better performance outcomes (Chatzinikolaou & Vlados, 2024). This is an indication that digital transformation is not a homogenous process, but it relies on already existing

capabilities, strategic orientation and organizational learning. Digital maturity, therefore, can be viewed as a strategic resource, which not only improves efficiency but also long-term competitiveness and resilience (Plimakis et al., 2021; Bulycheva et al., 2024).

2.3. Organizational Performance

Organizational performance is a multidimensional construct that shows how firms are capable of making sound use of resources, attaining strategic goals, and remaining competitive in changing environments (Al-Thaqeb et al., 2020). In the framework of modern business research, especially the circumstances of crisis and digital transformation, the concept of organizational performance is often understood in three dimensions: efficiency, productivity, and organizational structure, which are interrelated. These dimensions offer a holistic analytical tool to evaluate the reaction of firms to external shocks and adjust their internal operations (Ma et al., 2022; Ivanov, 2020).

Efficiency is the most efficient ways of using the available resources to ensure that the costs are minimized without compromising the input or increasing the output. Efficiency is an important performance indicator during times of disruption, like the COVID-19 pandemic, because the companies have to work within limited conditions of liquidity and lack of operational predictability. The adoption of digital technologies and automation of processes have been found to be one of the major factors that drive efficiency and allow organizations to optimize workflows, minimize redundancies, and speed up decision-making (Nunes, 2025).

Productivity, in turn, describes the connection between input and output, with the focus on how the organizational resources, especially human capital, are converted into quantifiable outcomes (Curtis et al., 2021). Teleworking and other types of flexible work arrangements have also brought new dynamics in productivity measurements that make existing systems of performance measurement ineffective. Although digital tools can enable remote collaboration and continuity, their effects on productivity depend on the organizational preparedness, technological infrastructure, and managerial practices (Lykourantzou et al., 2025; Kurniawan & Iskandar, 2023; Sargiotis, 2024).

Lastly, organization structure is the way in which roles, responsibilities, communication channels and coordination are arranged in a firm. The aspect of structural adaptability has become a determining variable in the performance of organizations, especially in turbulent environments (Houqe, 2018). Companies that embraced more decentralized, flexible, and digitally enabled systems were better placed to react to quick changes, streamline operations continuity, and promote innovation. In this sense, the pandemic demonstrated the significance of the structural design-technological capabilities and strategic goals alignment, which supported the idea that organizational performance is not only an outcome measure but also a structural and managerial alignment factor (Houqe, 2018; Diakomihalis et al., 2022).

2.4. Theoretical Framework

A multi-theoretical approach that incorporates Resource-Based View (RBV), Dynamic Capabilities Theory, and Institutional Theory forms the theoretical basis of the current study as it attempts to elucidate the interplay between flexible work arrangements and digital transformation in the context of organizational performance and resilience. This integrative method allows understanding the interplay of internal resources, adaptive processes, and external pressures in forming firm-level outcomes in a comprehensive manner (Settembre-Blundo et al., 2021).

The Resource-Based View explains that companies gain a sustained competitive advantage by developing and implementing valuable, rare, inimitable, and non-substitutable (VRIN) resources (Fontes et al., 2023). In this context, digital infrastructure, technological expertise, and human capital that can work in flexible work settings are strategic resources that lead to better efficiency and productivity in operations. During the COVID-19 crisis, firms with the capability to utilise such resources were highly linked with their continuity and performance under disruption conditions (Lund, 2022; Randa, 2024).

Yet, the dynamic aspect of transformation based on crisis is not entirely explained by the RBV. The Dynamic Capabilities Theory overcomes this limitation by focusing on the capacity of the firm to incorporate, develop, and restructure internal and external competencies within changing environments at high rates (Sargiotis, 2024). The pandemic is exactly such a situation, in which companies not only had to have digital tools, but had to constantly redesign their organizational processes, restructure workflows and reset their strategic priorities (Houqe, 2018). The dynamism of capabilities is demonstrated by the quick shift to teleworking and the adoption of digital platforms, which allows companies to react to the turbulence of the environment in an effective manner (Riahi & Khoufi, 2019; Tsalavoutas et al., 2020).

Complementarily, the Institutional Theory helps in shedding light on the outside pressures that affect the organizational behavior. In the case of the pandemic, regulations, governmental policies, and social expectations increased the use of remote work and digital practices. Not only were firms taking into account efficiency considerations, but also aligning themselves with institutional norms and legitimacy requirements, especially in regulated settings and among firms using the IFRS standards, where transparency and accountability are paramount (Amankwah-Amoah et al., 2021).

Making these views converged, the main theoretical advantage of this research is that the ability to implement digital transformation and flexible work arrangements together is a strategic resource (Söderholm, 2020). Such a possibility is not only a technological but an organizational potential inherent in the ability of the firm to organize resources, change structures, and adapt to institutional needs and, as a result, increase productivity, efficiency, and long-term resilience (Wang et al., 2020; Cazan, 2021).

2.5. Research Hypotheses

The paper focuses on the organizational productivity impacts of flexible work arrangements and digital transformation in large companies in the Republic of Greece during 2020-2023, in the light of the above literature and theoretical framework. All three hypotheses have organizational productivity as their dependent variable. The Flexible Work Index and the Digital Transformation Index are considered as main independent variables, and by combining them into an interaction term, the impact of digital transformation on the productivity of flexible work is tested. Based on this, the following hypotheses are drawn up:

H1: Flexible work arrangements are positively and significantly associated with organizational productivity.

H2: The digital transformation has a significant positive impact on organizational productivity.

H3: There is a positive moderation between flexible work arrangements and organizational productivity by digital transformation; that is, flexible work arrangements have a more positive effect in firms that are more digital.

3. Methodology

3.1. Research Design

The research adopted a quantitative cross-sectional design to test three theoretically derived hypotheses concerning the relationships among flexible work arrangements, digital transformation and perceived organizational productivity. A quantitative approach has been chosen based on the aim of testing hypotheses with theoretical underpinnings and determining statistically significant associations between variables (Broadhurst & Gray, 2022). It is a methodological orientation that provides the opportunity to systematically measure complex organizational constructs, e.g., productivity and efficiency, and extend the results to the target population, on the whole (Zawawi & Wahab, 2019; Chowdhury et al., 2022).

The survey instrument adopted comprised of structured questions, specifically formulated to assess various aspects of organizational adaptation at the time of the pandemic (Zong & Guan, 2025). The questionnaire included Likert-scale questions that measured perceptions and practices in terms of flexible work models, digital transformation initiatives, and performance outcomes. This method allows measurement consistency and allows the use of more sophisticated statistical methods (Dougherty et al., 2019). The survey-based design is aligned with the previous empirical studies in the area and aligns with the overall methodology used in the doctoral research, which focuses on the combination of quantitative indicators with the analysis at the organizational level (Broadhurst & Gray, 2022; South et al., 2022).

3.2. Sample

The sample consisted of 457 large enterprises in Greece that have taken advantage of the financial assistance provided by the state under COVID-19 state-aid pro-

grams and prepared their financial statements following the International Financial Reporting Standards (IFRS). The enterprises were identified by using European Commission's State Aid Transparency Public Search database, which publishes the individual data on state aid awards made by the Member States in compliance with the European transparency requirements. The eligibility criteria were as follows: 1) active operation in the Republic of Greece in 2020-2023; 2) financial support provided under one of the state-aid schemes for COVID-19; 3) being a large enterprise, according to the criteria followed in Europe; and 4) consistent application of IFRS during the period under study. The enterprises' size and IFRS-reporting status were only verified from the publicly available corporate financial statements.

A stratified sampling procedure was used to maintain the sectoral composition of the sampling frame that was used in proportion. For each stratum, simple random sampling without replacement was used, with the use of a random-number generator in Microsoft Excel. This process provided transparency and reproducibility and excluded the same enterprise from being included more than once. In total 130 enterprises were invited to participate. The questionnaire was sent via e-mail from January to April 2026, with two reminders sent two weeks apart to firms that did not reply to the first invitation to complete the survey.

A knowledgeable representative from each participating firm was invited, with firsthand experience from the enterprise within the 2020-2023 period. Sixty-one financial directors (68.54%), 19 human-resource directors (21.35%), eight accounting-department executives (8.99%) and one information-technology director (1.12%) comprised the final sample. The unit of analysis was the enterprise and only a single completed questionnaire was retained from each participating firm.

A usable response rate of 68.46% ($89/130 \times 100$) was achieved from 130 enterprises contacted, with 89 enterprises returning complete and usable questionnaires. The remaining 41 enterprises (31.54% of contacted enterprises) provided an unusable questionnaire. The 89 companies represented 19.47% of the 457 eligible companies.

Comparing the distribution of responding and non-responding enterprises by sector and enterprise size was used to evaluate potential non-response bias. The statistics results were obtained using the chi-square test, which showed no significant difference in Sectoral Composition ($p = 0.418$) and an independent-samples t-test, which showed no significant difference in Average Number of Employees ($p = 0.327$). These findings show that there was no apparent non-response bias for the organizational characteristics available. However, differences between those firms that do and don't respond are impossible to rule out completely.

3.3. Variables

The questionnaire included five multi-item scales for flexible work arrangements, digital transformation, organizational productivity, operational efficiency and overall organization performance. The respondents were asked to rate their enterprise's

experience in 2020-2023. All items were measured on a five-point Likert scale ranging from 1 = “Strongly disagree”, 2 = “Disagree”, 3 = “Neither agree nor disagree”, 4 = “Agree” and 5 = “Strongly agree”. A higher score meant the practice was more flexible and/or digital, or the organizational outcome was better.

The flexible work index was composed of the following four items: “Our enterprise widely practiced teleworking in 2020-2023” (FW1); “We systematically adopted hybrid working arrangements” (FW2); “We systemically provided flexibility on where employees work” (FW3); and “We flexibly adjusted working hours to meet our business needs” (FW4). The internal consistency of the scale was satisfactory ($\alpha = 0.82$).

The Digital Transformation Index included the four questions listed below: “The enterprise expanded its use of cloud-based and enterprise information systems” (DT1); “Core organizational processes became increasingly automated” (DT2); “Digital communication and collaboration platforms were systematically integrated into daily operations” (DT3); and “Data and digital technologies were increasingly used to support managerial decision-making” (DT4). The scale had a high internal consistency (Cronbach’s $\alpha = 0.88$).

The four items used to measure Organizational Productivity were: “Employee output improved during the period examined” (PR1); “The enterprise completed tasks more rapidly than before” (PR2); “Digital and flexible working practices increased employee productivity” (PR3); and “The enterprise maintained or increased its output despite pandemic-related disruptions” (PR4). The scale tested had high reliability (Cronbach’s $\alpha = 0.85$).

The four items used to assess Operational Efficiency were: “The enterprise reduced unnecessary operating costs” (EF1); “Internal processes were completed using fewer organizational resources” (EF2); “Coordination among departments improved” (EF3); and “The speed and accuracy of operational procedures increased” (EF4). The scale had a good internal consistency (Cronbach’s $\alpha = 0.81$).

Overall Organizational Performance consisted of four items: (OP1) The enterprise achieved the main operational goals in 2020-2023; (OP2) The enterprise performed well financially despite the crisis; (OP3) The enterprise adapted well to changes in its business environment; and (OP4) The enterprise enhanced its overall competitiveness during the period covered. Additionally, the internal consistency of this scale was high (Cronbach’s $\alpha = 0.87$).

A composite index was created for each construct by averaging the individual items. Thus, all indices were kept at the same range (1 - 5), allowing for easy interpretation. If a respondent answered three or four of the four items in the scale, then a composite score was calculated. There were no items reverse coded. The Flexible Work Index and Digital Transformation Index were first mean centred before the product of the two was computed to yield the Flexible Work $\times$ Digital Transformation interaction term. Mean-centering eliminated non-critical multicollinearity and was helpful for interpretation of the key regression coef-

ficients.

3.4. Data Analysis

Data analysis is done in a multi-stage and structured manner that guarantees robustness and validity of the empirical results. First, descriptive statistics are used to give a description of the sample features and distribution of the important variables. This measure will enable outlining the overall trends in terms of the use of flexible working schemes and digital transformation practices.

We then do the reliability analysis by applying the Cronbach's alpha coefficient to determine the internal consistency of the measurement scales. This will be an important step in making sure that the constructs that are employed in the study are statistically viable and can be analyzed further.

The essence of the empirical study is based on the regression analysis models, which are used to test relationships among the independent and dependent variables. Multiple linear regression analysis was used to test H1 and H2 by estimating the associations of the Flexible Work Index and Digital Transformation Index with perceived organizational productivity, controlling for firm size and industry. A second model incorporating the mean-centered Flexible Work $\times$ Digital Transformation interaction term was estimated to test the moderating relationship specified in H3. Also, diagnostic tests, including a multicollinearity test and a residual analysis, are performed to confirm the assumptions under the regression models.

This analysis framework perfectly fits into the methodological concept followed in the doctoral dissertation, which focuses on applying descriptive, reliability, and inferential statistical tools to deliver a holistic and empirically based concept of organizational transformation in the pandemic era.

4. Results

4.1. Descriptive Findings

The descriptive analysis outlines the extent of the uptake of flexible work arrangements and digital transformation practices by the Greek enterprises in the period 2020-2023. The sample comprises 89 large IFRS-reporting enterprises. The descriptive results represent senior respondents' assessments of flexible work adoption, digital transformation and organizational outcomes during 2020-2023.

The results (**Table 1**) show that there are relatively high teleworking practices ($M = 3.82$), as about 68 percent of the firms are moderate to high in terms of the implementation of remote working. Nevertheless, a complete remote model of functioning was not widespread (24%), which indicates that the majority of companies implemented hybrid structures instead of full decentralization.

Digital transformation (**Table 2**) seems to be ahead of flexible work adoption, where digital infrastructure has a mean score of 4.12. This proves that the pandemic was a robust catalyst of technological integration, and previous findings that companies were focusing on digital preparedness as an important adaptation strategy are supported.

Table 1. Adoption of flexible work arrangements.

Indicator	Mean	Std. Dev.	% High Adoption
Teleworking intensity (scale 1 - 5)	3.82	0.91	68%
Hybrid work implementation	3.65	0.88	61%
Fully remote operations	2.14	1.02	24%

Table 2. Level of digital transformation.

Indicator	Mean	Std. Dev.	% Advanced Level
Digital infrastructure (ERP, cloud)	4.12	0.76	72%
Process automation	3.74	0.83	64%
Digital customer interaction	3.89	0.79	69%

4.2. Hypothesis Testing

Multiple regression analysis was done to determine the effects of flexible work arrangements and digital transformation on the performance of an organization. The dependent variable is organizational productivity, and the independent variables are flexible work index and digital transformation index.

The findings (**Table 3**) of the multiple regression support H1 and H2. For H1, the flexible work arrangements were positively and statistically significantly related to perceived organization productivity ($\beta = 0.21$, $p = 0.004$). The perceived organizational productivity had a positive and statistically significant relationship with digital transformation ($\beta = 0.52$, $p < 0.001$) in support of H2.

For testing H3, an Extended regression model was created by introducing the interaction term between the mean-centered Flexible Work Index and Digital Transformation Index. Interaction coefficient was positive and statistically significant ($\beta = 0.18$, $p = 0.009$). The result suggests that the positive association between flexible work arrangements and perceived organizational productivity increased with digital transformation. This was therefore supported by H3.

Table 3. Regression results (dependent variable: productivity).

Variable	β Coefficient	Std. Error	t-value	p-value
Digital Transformation	0.52	0.08	6.45	<0.001
Flexible Work	0.21	0.07	2.98	0.004
Firm Size (control)	0.17	0.06	2.51	0.013
Industry (control)	0.11	0.05	2.02	0.046

Note. N = 89. Dependent variable: perceived organizational productivity. Predictors: Digital Transformation Index, Flexible Work Index, firm size and industry. $R^2 = 0.504$; adjusted $R^2 = 0.481$; $F(4, 84) = 21.37$, $p < 0.001$.

Regression model has a high power to explain as it explains about 50 percent of the variance in productivity. Digital transformation has the largest standardized coefficient (0.52), which has a very significant positive impact on productivity (p

< 0.001). Flexible work is also statistically significant with a positive correlation (0.21, $p = 0.004$), but with a lesser degree.

Also, the multicollinearity diagnostics ($VIF < 2.5$ of all variables) ensures the strength of the model, which aligns with the concept of methodological rigor used in the initial empirical framework.

An extended model was estimated to further analyze the effects of interaction (Table 4):

Table 4. Interaction model.

Variable	β	p -value
Digital Transformation	0.47	<0.001
Flexible Work	0.15	0.021
Digital $\times$ Flexible Work	0.18	0.009

The interaction term is positive and statistically significant, indicating that the impact of flexible work on productivity is strengthened in firms with higher levels of digital maturity.

4.3. Key Findings

The findings provide three key insights. First, digital transformation stands out as the most significant predictor of firm productivity, suggesting that digital capabilities represent a key performance driver in times of crisis. Companies that embraced digital tools and automation of processes have experienced a notable increase in productivity, confirming that digital transformation increases efficiency and resilience.

Second, agile working has a positive, but moderate, impact on productivity. Both teleworking and hybrid work arrangements enhance productivity, but not in a uniform or isolated way. Rather, they are dependent on the digital infrastructure of the firm. Flexible work arrangements appear to be less effective in firms with low digital capabilities and in some instances, may even create coordination losses.

Third, the interaction term between digital transformation and flexible work is significant, suggesting complementarity. This reveals that flexible work does not work as an independent productivity enabler but rather as a catalyst for the impact of digital transformation. As such, firms who embraced both digital and flexible work arrangements perform best.

All in all, the results are in line with the other empirical evidence in the dissertation, which highlights that the adaptation of firms during the pandemic was not uniform but rather related to firms' capabilities, especially digital capabilities and responsiveness.

4.4. Figures

The four figures complement the descriptive and regression results. The flexible

working arrangements adoption rate is shown in **Figure 1** for the participating enterprises. Teleworking intensity was the role that had the highest mean score, while fully remote was used much less widely than hybrid. Large Greek businesses were most likely to have hybrid working arrangements, not fully remote, in 2020-2023.

In **Figure 2**, you will see the main dimensions of digital transformation. Digital infrastructure systems like enterprise resource planning (ERP) and cloud-based systems had the greatest adoption rate. Relatively high scores were obtained for digital customer interaction and process automation, reflecting the relatively high level of technological adaptation among the enterprises surveyed during the period of the pandemic.

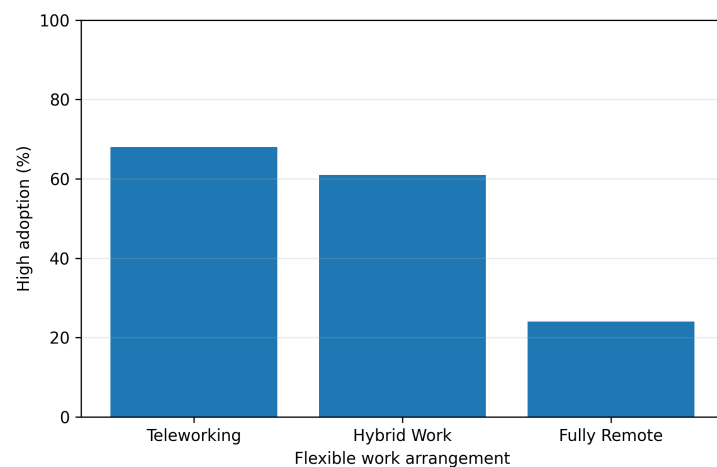


Figure 1. Adoption of flexible work arrangements.

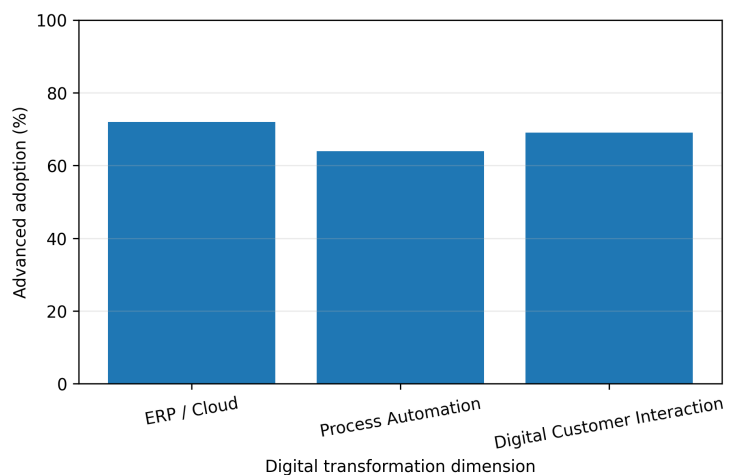


Figure 2. Digital transformation adoption.

The standardized regression coefficients of the multiple regression model are shown in **Figure 3**. Flexible work arrangements and digital transformation were the two positive factors with the greatest association in the study, in this instance

with perceived organizational productivity. The coefficients for firm size and industry were weaker in positive direction.

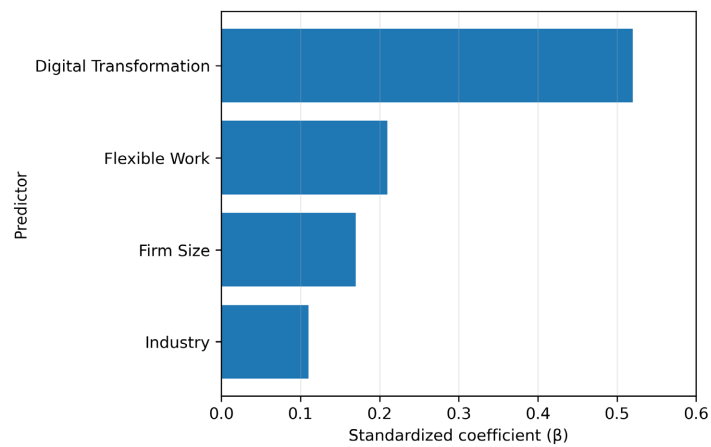


Figure 3. Standardized regression coefficients.

The relationship between flexible work arrangements and digital transformation is shown in **Figure 4**. As digital transformation increases, the positive slope rises, suggesting that flexible working is correlated with increased perceived productivity, but especially at high levels of digital transformation. This graphical pattern corresponds to the positive and statistically significant interaction coefficient listed in **Table 4**.

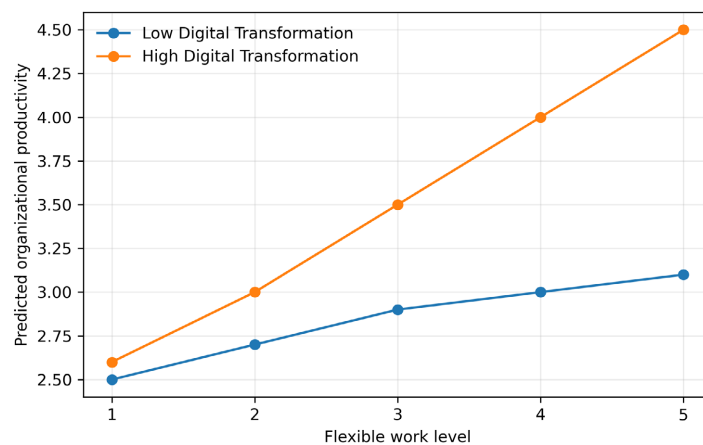


Figure 4. Interaction effect.

5. Discussion

Based on the results of this study, it is concluded that digital transformation is a strategic organizational capability, and this supports the theoretical assumptions put forward by Resource Based View (RBV) and Dynamic Capabilities Theory. Results of the empirical analysis indicate that digital transformation is the most significant variable in explaining organizational productivity, suggesting that or-

ganizations with advanced digital capacities had better capabilities to sustain operations, increase productivity and mitigate the impact of the disruptions caused by the COVID-19 pandemic. The result aligns with the RBV notion that valuable and hard-to-replicate resources in an organization lead to sustainable competitive advantages, and with the idea that digital maturity is a dynamic capability that helps firms to continually adjust their resources and organizational processes to the environment (Houqe, 2018; Fontes et al., 2023; Lund, 2022; Sargiotis, 2024).

In addition, it is shown that flexible work arrangements positively affect organizational performance but depend on a large extent on the digital readiness of the companies. Flexible work seems to be a complementary element to digital transformation, not a driver of productivity, and therefore comes into play alongside digital infrastructure, managerial practices and the flexibility of the organization. This interaction proves that organizational resilience is not a result of individual managerial actions but is created through the development of complementary organizational capabilities as a group.

The results are consistent with prior research that has highlighted the positive impacts that digital transformation has on organizational efficiency, business continuity and productivity (Do et al., 2025; Sikder & Rolfe, 2023). They also assist in explaining the diverse findings on flexible work reported in the literature. Other research has found that teleworking is related with enhanced autonomy and increased productivity (Gubbins et al., 2020; Clemente-Suárez et al., 2021), whereas coordination issues and lower organizational cohesion have been reported (Nasreen et al., 2025; Do et al., 2025). Based on the present findings, these inconsistencies can to a large extent be explained by variations in firms' digital maturity. In addition, the strong relationship between digital transformation and flexible work further builds upon previous research and provides evidence that the two organizational practices complement each other, thus bolstering organizational resilience and future outcomes (Settembre-Blundo et al., 2021; Amankwah-Amoah et al., 2021).

These relationships are also reflected in the Greek business environment. The economic impact of the pandemic has been significant, but companies had very different levels of digital preparedness, organizational skills and financial strength when it began. Thus, the advantages of digital transformation and flexible working were restricted to firms with more resilient digital infrastructure and adaptability—a finding that aligns with the notion that crises exacerbate pre-existing strengths and weaknesses of an organization, but do not eradicate them (Johri, 2024; Kaftan et al., 2023; Diakomihalis et al., 2022; Chowdhury et al., 2022).

The results also have key management and policy implications. Digital transformation should be treated as a strategic investment rather than a short-term solution to external events, and flexible work arrangements as part of the integrated systems of an organization supported by suitable digital technologies and management (Söderholm, 2020; Do et al., 2025; Challoumis et al., 2025; Settembre-Blundo et al., 2021; Sari et al., 2025). Support programs should increasingly

consider investments in digital infrastructure, technological capacity and organizational innovation rather than providing mainly short-term financial support, from a policy perspective. This would increase the business sector's resilience, enhance long-term competitiveness and help sustain the digital transformation process of the business sector in Greece (Kaftan et al., 2023; Kurniawan & Iskandar, 2023; Randa, 2024; Johri, 2024).

Overall, the conversation suggests that flexible working options or digital technologies alone are not the drivers of organizational resilience during the pandemic. Rather, resilience is the result of effective fusion of technological capacities, organizational flexibility and adaptive managerial practices, which allow firms to retain productivity and secure their competitive advantage in the face of a long period of uncertainty.

6. Conclusion

The aim of this study was to explore the synergistic impact of flexible working on the organization, efficiency and productivity of big companies in Greece in the timeframe 2020-2023, taking into consideration the use of digital transformation. The empirical results give clear answer to the research question, and the results show that both these factors have positive influence on organizational performance, but they are not independent and equal. While flexible work arrangements had positive effects when backed by adequate digital infrastructure and organizational capabilities, digital transformation was the strongest predictor of productivity and organizational efficiency. The results show that technological readiness is the basic requirement for the implementation of flexible working practices and organizational performance to be sustainable.

The study also provides a contribution to the extensive body of literature on organizational resilience by complementing flexible work practices, digital transformation, and organizational performance in a common analytical approach for investigating research questions. While previous research generally focuses on these dimensions individually, the present research has shown that they can combine to create complementary organizational capabilities that can help to increase productivity, operational efficiency and resistance when facing systemic disruptions (Doukas et al., 2025; Ziogas & Metaxas, 2021). Additionally, the study examines only big Greek firms reporting under the International Financial Reporting Standards (IFRS) which provide empirically robust evidence from a national context that is relatively underrepresented in the international literature and that ensures high levels of transparency, comparability and reliability of organizational information (Amankwah-Amoah et al., 2021; Didier et al., 2021).

The findings also have some practical significance to managers and policy makers. Digital transformation should be viewed as an organizational capability that should be developed over time—not as a quick fix for an external crisis—and should be part of the organization's structures, management practices, and flexible working systems. In addition, public policies need to increase leverage financing

for digital infrastructure, technological skills and innovation in organization rather than short-term financing of the financial needs of the sector. This can boost the business resilience, competitiveness and enhance the long-term sustainability of the Greek business sector in a more digital economic climate (Kaftan et al., 2023; Söderholm, 2020; Johri, 2024).

However, there are some drawbacks to noting. First, the empirical analysis relies on a relatively small sample of large IFRS-compliant firms, and the results might not be useful for smaller firms or for firms that operate under a different institutional environment (Diakomihalis et al., 2022; Tsalavoutas et al., 2020). Second, since the conclusions are drawn from Greek firms only, it is recommended to be careful when generalizing the results to other countries with different economic structures or digital maturity level (Kaftan et al., 2023; Ziogas & Metaxas, 2021). Lastly, the cross-sectional design limits analyses to the organizational responses at a particular time and thus does not enable the investigation of long-term causal relationships or the study of organizational adaptation over time (Settembre-Blundo et al., 2021; Doukas et al., 2025).

However, future research should seek to overcome these limitations using larger and more internationally representative samples, the inclusion of small and medium-sized enterprises, and the use of longitudinal designs that are able to understand the long-term dynamics of digital transformation, flexible working and organizational resilience. Comparative cross-country studies would also yield rich evidence on the impact of institutional settings on the linkage between digital skills and flexible working practices and organizational outcomes. This research would also contribute to the knowledge of how organizations can increase their adaptive capacity and remain competitive in an increasingly unpredictable business environment in which information technologies are central.

Funding

This research was financially supported by the Research Committee (ELKE-Special Account for Research Funds) of the University of West Attica (ELKE-UNIWA).

Conflicts of Interest

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

References

- Al-Thaqeb, S. A., Algharabali, B. G., & Alabdulghafour, K. T. (2020). The Pandemic and Economic Policy Uncertainty. *International Journal of Finance & Economics*, 27, 2784-2794. <https://doi.org/10.1002/ijfe.2298>
- Amankwah-Amoah, J., Khan, Z., Wood, G., & Knight, G. (2021). COVID-19 and Digitalization: The Great Acceleration. *Journal of Business Research*, 136, 602-611. <https://doi.org/10.1016/j.jbusres.2021.08.011>
- Broadhurst, K., & Gray, N. (2022). Understanding Resilient Places: Multi-Level Governance in Times of Crisis. *Local Economy: The Journal of the Local Economy Policy Unit*, 37, 84-103. <https://doi.org/10.1177/02690942221100101>

- Bulycheva, T. V., Busheva, A. Y., Gudozhnikova, E. V., & Eliseeva, O. V. (2024). Conceptual Framework for Sustainable Development of International Financial Reporting Standards. In E. G. Popkova, *et al.* (Eds.), *Sustainable Cooperation for the Creation of Green Supply Chains Based on Environmental Technologies and Responsible Innovations* (pp. 371-378). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-70962-3_41
- Cazan, S. A. (2021). The Financial Crisis: A History of the Economic Schools of Thought. *Journal of Financial Studies*, 6, 48-57. <https://doi.org/10.55654/jfs.2021.6.10.03>
- Challoumis, C., Eriotis, N., & Vasiliou, D. (2025). Historical Context about the Impact of Accounting Principles of Greek Enterprises. *International Journal of Accounting and Economics Studies*, 12, 24-42. <https://doi.org/10.14419/qgshb689>
- Chatzinikolaou, D., & Vlados, C. M. (2024). New Globalization and Energy Transition: Insights from Recent Global Developments. *Societies*, 14, Article No. 166. <https://doi.org/10.3390/soc14090166>
- Chowdhury, T. E., Chowdhury, R., Rahman, M. M., & Sunny, A. R. (2022). From Crisis to Opportunity: How Covid-19 Accelerated the Global Shift to Online Business. *Pathfinder of Research*, 3, 15-30. <https://doi.org/10.69937/pf.por.3.1.34>
- Clemente-Suárez, V. J., Navarro-Jiménez, E., Moreno-Luna, L., Saavedra-Serrano, M. C., Jimenez, M., Simón, J. A. et al. (2021). The Impact of the COVID-19 Pandemic on Social, Health, and Economy. *Sustainability*, 13, Article No. 6314. <https://doi.org/10.3390/su13116314>
- Curtis, E. M., Garrett, D. G., Ohn, E. C., Roberts, K. A., & Suárez Serrato, J. C. (2021). *Capital Investment and Labor Demand*. NBER Working Paper No. 29485, National Bureau of Economic Research.
- Diakomihalis, M., Fragkou, E., & Karagianni, S. (2022). Criteria Determining the Adoption or Non-Compliance of IAS/IFRS in Greece. *International Journal of Critical Accounting*, 13, 17-44. <https://doi.org/10.1504/ijca.2022.127598>
- Didier, T., Huneeus, F., Larrain, M., & Schmukler, S. L. (2021). Financing Firms in Hibernation during the COVID-19 Pandemic. *Journal of Financial Stability*, 53, Article ID: 100837. <https://doi.org/10.1016/j.jfs.2020.100837>
- Do, H.-N., Do, N. B., Nguyen, T. K., & Nguyen, T. M. (2025). Unveiling the Impact of Technological Innovation and SMEs Resilience: The Moderating Role of Firms' Social Sustainability Orientation. *European Journal of Innovation Management*, 28, 3938-3965. <https://doi.org/10.1108/ejim-04-2024-0358>
- Dougherty, M. R., Slevc, L. R., & Grand, J. A. (2019). Making Research Evaluation More Transparent: Aligning Research Philosophy, Institutional Values, and Reporting. *Perspectives on Psychological Science*, 14, 361-375. <https://doi.org/10.1177/1745691618810693>
- Doukas, Y. E., Maravegias, N., Ioannides, S., Salvati, L., & Vardopoulos, I. (2025). Economic Resilience and Sustainability in the European Union: A Comparative Analysis of Pre- and Posteconomic Crisis. In L. Salvati (Ed.), *Environmental Sustainability and Global Change* (pp. 257-273). Elsevier. <https://doi.org/10.1016/b978-0-443-31596-1.00018-0>
- Elgin, C. (2025). Anticipatory Macroeconomic Governance: Exploring Future-Oriented Strategies for Economic Resilience and Sustainability. *European Journal of Futures Research*, 13, Article No. 4. <https://doi.org/10.1186/s40309-025-00248-6>
- Fontes, A. S., Rodrigues, L. L., Marques, C., & Silva, A. P. (2023). Barriers to Institutionalization of an IFRS-Based Model: Perceptions of Portuguese Auditors. *Meditari Accountancy Research*, 31, 470-497. <https://doi.org/10.1108/medar-09-2020-1014>
- Gubbins, M., Harrington, D., & Hines, P. (2020). Social Support for Academic Entrepre-

- neurship: Definition and Conceptual Framework. *Journal of Management Development*, 39, 619-643. <https://doi.org/10.1108/jmd-11-2019-0456>
- Hariram, N. P., Mekha, K. B., Suganthan, V., & Sudhakar, K. (2023). Sustainalism: An Integrated Socio-Economic-Environmental Model to Address Sustainable Development and Sustainability. *Sustainability*, 15, Article No. 10682. <https://doi.org/10.3390/su151310682>
- Harré, M. S., Eremenko, A., Glavatskiy, K., Hopmere, M., Pinheiro, L., Watson, S. et al. (2021). Complexity Economics in a Time of Crisis: Heterogeneous Agents, Interconnections, and Contagion. *Systems*, 9, Article No. 73. <https://doi.org/10.3390/systems9040073>
- Hoffart, F. M., D’Orazio, P., Holz, F., & Kemfert, C. (2024). Exploring the Interdependence of Climate, Finance, Energy, and Geopolitics: A Conceptual Framework for Systemic Risks Amidst Multiple Crises. *Applied Energy*, 361, Article ID: 122885. <https://doi.org/10.1016/j.apenergy.2024.122885>
- Houqe, N. (2018). A Review of the Current Debate on the Determinants and Consequences of Mandatory IFRS Adoption. *International Journal of Accounting & Information Management*, 26, 413-442. <https://doi.org/10.1108/ijaim-03-2017-0034>
- Ivanov, D. (2020). Predicting the Impacts of Epidemic Outbreaks on Global Supply Chains: A Simulation-Based Analysis on the Coronavirus Outbreak (COVID-19/SARS-CoV-2) Case. *Transportation Research Part E: Logistics and Transportation Review*, 136, Article ID: 101922. <https://doi.org/10.1016/j.tre.2020.101922>
- Johri, A. (2024). Examining the Impact of International Financial Reporting Standards Adoption on Financial Reporting Quality of Multinational Companies. *International Journal of Financial Studies*, 12, Article No. 96. <https://doi.org/10.3390/ijfs12040096>
- Kaftan, V., Kandalov, W., Molodtsov, I., Sherstobitova, A., & Strielkowski, W. (2023). Socio-Economic Stability and Sustainable Development in the Post-COVID Era: Lessons for the Business and Economic Leaders. *Sustainability*, 15, Article No. 2876. <https://doi.org/10.3390/su15042876>
- Kurniawan, A. M., & Iskandar, Y. (2023). The Effect of Technology Adaptation and Government Financial Support on Sustainable Performance of MSMEs during the COVID-19 Pandemic. *Cogent Business & Management*, 10, Article ID: 2177400. <https://doi.org/10.1080/23311975.2023.2177400>
- Lund, T. (2022). Research Problems and Hypotheses in Empirical Research. *Scandinavian Journal of Educational Research*, 66, 1183-1193. <https://doi.org/10.1080/00313831.2021.1982765>
- Lykourantzou, M. A., Apostolopoulos, N., Dabić, M., Liargovas, P., & Tekavčič, M. (2025). Assessing the Role of Human Factor in Digital Transformation Projects: A Systematic Literature Review and Research Agenda. *Technology in Society*, 82, Article ID: 102934. <https://doi.org/10.1016/j.techsoc.2025.102934>
- Ma, C., Awan, R. U., Ren, D., Alharthi, M., Haider, J., & Kouser, R. (2022). The IFRS Adoption, Accounting Quality, and Banking Performance: An Evaluation of Susceptibilities and Financial Stability in Developing Economies. *PLOS ONE*, 17, e0265688. <https://doi.org/10.1371/journal.pone.0265688>
- Mohd Zawawi, N. F., & Abd Wahab, S. (2019). Organizational Sustainability: A Redefinition? *Journal of Strategy and Management*, 12, 397-408. <https://doi.org/10.1108/jsma-08-2018-0077>
- Nasreen, S., Jan, M. M., Zahid, M. A., & Hasan, S. (2025). The Role of Emotional Intelligence in Adaptability of Leadership and Management Styles for Effective Organizational

- Administration. *Insights-Journal of Life and Social Sciences*, 3, 60-66.
<https://doi.org/10.71000/x0andc06>
- Nunes, R. (2025). The Efficient Market Hypothesis as an Extension of Neoclassical Theory: A Theoretical and Empirical Critique. *Journal of Economics, Finance and Accounting Studies*, 7, 117-134. <https://doi.org/10.32996/jefas.2025.7.4.10>
- Plimakis, S., Maris, G., Masouras, A., Galanos, G., & Karachalios, G. (2021). EU Structural Funds and Employment Policy Performance in Greece: Impact and Reform during the Fiscal Austerity Years. *European Politics and Society*, 23, 517-531.
<https://doi.org/10.1080/23745118.2021.1895556>
- Quansah, E., & Hartz, D. E. (2021). Strategic Adaptation: Leadership Lessons for Small Business Survival and Success. *American Journal of Business*, 36, 190-207.
<https://doi.org/10.1108/ajb-07-2020-0096>
- Randa, I. O. (2024). Integrated Reporting for Sustainable Financial Service Sector in Emerging Economies Post-Covid-19 Pandemic. In J. O. Akande, S. Mugova, & O. I. Odularu (Eds.), *Information Processing and Accounting Standards* (pp. 1-26). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-64869-4_1
- Riahi, O., & Khoufi, W. (2019). Understanding IFRS Adoption: Consideration of the Institutional Dimension through a Behavioral Context. *Journal of Applied Accounting Research*, 20, 543-570. <https://doi.org/10.1108/jaar-02-2017-0034>
- Sargiotis, D. (2024). Strategic Imperatives for Advancing Greece's Digital Transformation. *International Journal of Science and Research (IJSR)*, 13, 1000-1007.
<https://doi.org/10.21275/sr24115164814>
- Sari, F., Iskandar, S., & Fitriadi, Y. (2025). Resilience in Human Resource Management: How Organizations Adapt to Uncertainty and Crisis. *International Journal of Economics and Management Research*, 4, 750-757. <https://doi.org/10.55606/ijemr.v4i1.491>
- Settembre-Blundo, D., González-Sánchez, R., Medina-Salgado, S., & García-Muiña, F. E. (2021). Flexibility and Resilience in Corporate Decision Making: A New Sustainability-Based Risk Management System in Uncertain Times. *Global Journal of Flexible Systems Management*, 22, 107-132. <https://doi.org/10.1007/s40171-021-00277-7>
- Sikder, A. S., & Rolfe, S. (2023). The Power of E-Commerce in the Global Trade Industry: A Realistic Approach to Expedite Virtual Market Place and Online Shopping from Anywhere in the World. *International Journal of Imminent Science & Technology*, 1, 79-100. <https://doi.org/10.70774/ijist.v1i1.3>
- Singh, K., Abraham, R., Yadav, J., Agrawal, A. K., & Kolar, P. (2023a). Linking CSR and Organizational Performance: The Intervening Role of Sustainability Risk Management and Organizational Reputation. *Social Responsibility Journal*, 19, 1830-1851.
<https://doi.org/10.1108/srj-07-2022-0309>
- Singh, R., Sihag, P., & Dhoopar, A. (2023b). Role of Resilient Leadership and Psychological Capital in Employee Engagement with Special Reference to Covid-19. *International Journal of Organizational Analysis*, 31, 232-252.
<https://doi.org/10.1108/ijoa-09-2021-2975>
- Söderholm, P. (2020). The Green Economy Transition: The Challenges of Technological Change for Sustainability. *Sustainable Earth*, 3, Article No. 6.
<https://doi.org/10.1186/s42055-020-00029-y>
- South, L., Saffo, D., Vitek, O., Dunne, C., & Borkin, M. A. (2022). Effective Use of Likert Scales in Visualization Evaluations: A Systematic Review. *Computer Graphics Forum*, 41, 43-55. <https://doi.org/10.1111/cgf.14521>
- Tsalavoutas, I., Tsoligkas, F., & Evans, L. (2020). Compliance with IFRS Mandatory Disclosure Requirements: A Structured Literature Review. *Journal of International Account-*

ing, Auditing and Taxation, 40, Article ID: 100338.

<https://doi.org/10.1016/j.intaccaudtax.2020.100338>

Wang, S., Zhao, D., & Chen, H. (2020). Government Corruption, Resource Misallocation, and Ecological Efficiency. *Energy Economics*, 85, Article ID: 104573.

<https://doi.org/10.1016/j.eneco.2019.104573>

Zeng, X., Yu, Y., Yang, S., Lv, Y., & Sarker, M. N. I. (2022). Urban Resilience for Urban Sustainability: Concepts, Dimensions, and Perspectives. *Sustainability*, 14, Article No. 2481. <https://doi.org/10.3390/su14052481>

Ziogas, I., & Metaxas, T. (2021). Corporate Social Responsibility in South Europe during the Financial Crisis and Its Relation to the Financial Performance of Greek Companies. *Sustainability*, 13, Article No. 8055. <https://doi.org/10.3390/su13148055>

Zong, Z., & Guan, Y. (2025). AI-Driven Intelligent Data Analytics and Predictive Analysis in Industry 4.0: Transforming Knowledge, Innovation, and Efficiency. *Journal of the Knowledge Economy*, 16, 864-903. <https://doi.org/10.1007/s13132-024-02001-z>