

## **Pest Analysis of Greece's External Environment in the View of Digital Transformation of SMEs**

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### **Abstract**

The Digital Transformation has restructured entire sectors in recent years. The Covid-19 pandemic acted as an accelerator in the transition to the new digital era. Yet, SMEs struggle to successfully implement such profound organizational transformation and thus jeopardize their sustainability and their competitiveness. Greece still has a slow pace of digital transformation compared to other countries of the European Union. This paper applies the PEST-framework to investigate the factors of external macro-environment, such as political, economic, social and technological, that are related to the digital transformation of Greek SMEs. The analysis showed that Greek SMEs are facing multiples challenges, yet several environmental factors could be proved extremely beneficial and helpful for them.

**Keywords:** Digital Transformation, SMEs, external environment, Pest analysis, Greece.

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## **1. Introduction**

Small and medium-sized enterprises (SMEs) are the driving force of the economy, both at national and European level, contributing significantly to the GDP, to the creation of new jobs and to the production of added value. They play an important role in boosting employment, competitiveness and innovation, while ensuring social stability. However, business growth, even survival, it is not an easy task in today's global competitive environment and in the post-COVID-19 era.

Innovation and continuous modernization of the production process is required, digitization and adoption of advanced technologies, with the maximum utilization of data, is a fundamental supporting system for their transition to a Circular and Digital Economy. Given their importance to the economy, SMEs are a strategic priority of the European Commission, served by numerous policies. Targeted actions promote entrepreneurship and innovation for SMEs, creating an environment in which they can innovate, grow and prosper.

The economy, at national and European level, is in a transitional phase, driven by both the opportunities and the threats it faces. The opportunities are related to the rapid development of digital technologies and the enormous potential of innovation, while the threats are located in the consequences of climate change, the loss of biodiversity, social inequalities and the increase in global competition.

In Greece, 99.9% of the total number of businesses are SMEs and they cover a wide range of activities and sectors. They account for about 19.3% of GDP and 87% of business employment, and are the largest contributors to national R&D spending (National Documentation Centre, 2021).

The purpose of this paper is to discuss the future of digital transformation in Greece's SMEs and investigate the factors of the external macro-environment that can be an opportunity or a threat to this process. PEST analysis will be applied to depict the political, economic, social and technological factors that are related to the digital transformation of Greek small and medium-sized enterprises.

## **2. Literature review**

### **2.1 Digital transformation in Greece**

The digital era, in which organizations of any nature, are trying to enter, is also characterized as the Fourth Industrial Revolution or Industry 4.0 or Digital Revolution (Digital Revolution) and is the period characterized by the rapid transition from traditional industry to an economy based on Information and Communication Technology (Zin et al., 2018). The ongoing digital age requires the extensive use of digital media and, against consequence, the changes in the business regarding the business relations, the customer processes, the value chain etc. This process can be defined as Business Digital Transformation (Schumann & Tittmann, 2015).

Digital transformation, using modern information technology (IT), represents large-scale change in fundamental business processes and components. These changes generally target business models, products, productivity, employee roles,

production, marketing, financial management, and other processes. They also include cultural changes that challenge the status quo, and the way information is managed, structured, and positioned within an organization. All parts of an enterprise can undergo, or feel the impact of, transformation — from infrastructure supply chain, sales, marketing, purchasing, finance, and human resource management, to customer relations (Savic, 2020).

Industry 4.0 consists of a number of new and innovative technologies (Matt & Rauch, 2020):

- Information and communication technology (ICT) to digitize information and integrate systems at all stages of product creation and use (including logistics and supply), both inside companies and across company boundaries.
- Cyber-physical systems that use ICTs to monitor and control physical processes and systems. These may involve embedded sensors, intelligent robots that can configure themselves to suit the immediate product to be created, or additive manufacturing (3D printing) devices.
- Network communications including wireless and internet technologies that serve to link machines, work products, systems, and people, both within the manufacturing plant, and with suppliers and distributors.
- Simulation, modeling, and virtualization in the design of products and the establishment of manufacturing processes.
- Big data analysis and exploitation, either immediately on the factory floor, or through cloud computing.
- Digital assistance systems for human workers, including robots, augmented reality, and intelligent aid systems.

This paper will focus on the current situation of digital transformation in Greece, where, according to Association of Business and Industries (SEV 2022), DT performances contribute to the overall ranking of the country as 25th in the EU of 27. Latest survey analyzes digital maturity of Greece through the SEV Digital composite index (Maturity Index). Greece achieves its best performance in the "policies & regulatory framework" dimension (23rd), in dimensions "connectivity infrastructures" (24th), in "digital maturity of enterprises" (24th) and in "digital maturity society" (24th), (SEV 2022). In dimensions of "ICT & high-tech sectors" and "public sector digital maturity" Greece occupies the last place in the EU (27th) (SEV 2022). Although investments in ICT equipment and systems range at comparatively high levels, in the digital dimension maturity of businesses, Greece ranks low (24th) (SEV 2022). Exempting implementation of ERP systems and Big Data Analytics, integration of digital technologies in businesses is slow compared to the European average –such an indicative examples adoption of Cloud technologies where the country ranks 27<sup>th</sup> (SEV 2022). Meanwhile, spread of electronic invoicing (B2B) has not still reached satisfactory levels (27th) (SEV 2022). Despite these results, in 2020, turnover of e-commerce in Greece showed the highest growth rate in Europe with 77%, due to pandemic measures (lockdown and

pause of business activity in presence) (SEV 2022). In addition, Covid-19 affected work organization through the implementation of telecommuting model, where this was possible. In Greece, the percentage of employed people who usually work remotely increased from 1.9% in 2019 to 7% in 2020 (SEV 2022). The factors of the external environment in Greece play a significant role in the issues discussed above; thus, a PEST analysis should be conducted.

## 2.2 Microeconomic environment

According to the business strategy, external environment includes all the dynamic, evolving dimensions that lie outside of organism and affect it to a greater or lesser extent (Banham, 2010). This approach accepts that external variables can influence the organizational development of an entity but cannot be controlled directly from it.

Regarding the external business environment, there are several definitions:

-All entities depend on certain elements of their exterior environment. The control of external resources that everyone needs entity for its operation, determines the degree of dependence (Kotter, 1979).

-The external business environment of many companies is changing globally (Vlados & Hatzinikolaou, 2020). International trade grows faster than the production of the countries, while the cross-border business investment is growing faster than domestic investment. Many businesses are oriented towards the global market and respectively to external suppliers.

- The environment consists of all the external elements that influence business decisions and performance. If from the universe subtract the subset representing the organism, what remains it is his environment (Georgopoulos, 2010).

The analysis of the external environment is considered critical, in order to determine and evaluate important facts and trends that are outside the control of the business so that they can be avoided unexpected situations and to identify potential ways of success and development.

## 2.3 Pest analysis

PEST (Indris & Primiana, 2015) analysis provides a framework for the investigation and the analysis of the external generalized macro-environment for one organization. It stands for environmental variables: Political, Economic, Social and Technological.

Business environment could be defined as all relevant physical and social factors outside an organization considered indecision-making process. What should be emphasized is that the changes in one environment category can affect the other categories (Georgopoulos, 2010). Also, the same environmental trend can have different results in companies in different industries.

PEST analysis is used as a strategic planning tool and enables businesses to understand market growth and decline; positioning businesses and knowing the

potential and direction for the activities (Koumparoulis, 2013).

PEST can be found also as PESTEL, PESTLE, PESTEEL or PEST DG. PESTEL or PESTLE has included the ecological/environmental and legal factors, PESTEEL has added the ethical factor, whereas the PEST DG includes demographic and global

factors. However, all the extra factors that were mentioned above (ecological, legal, ethical, demographic and global) can be included in the main four factors of PEST (G. A. Deirmentzoglou and E. A. Deirmentzoglou ,2022)

Regarding the definitions of these factors, it can be concluded that can be described as following: (Abdoh et. al 2020):

- Political Factors (P):  
Political factors refer to stability of government, government regulations and policies regarding e-government, corruption level, inadequate government funding, transparency in government processes, inadequate organizational leadership commitment. Also, may includes tax policy, trade restrictions, tariffs, and bureaucracy.
- Economic Factors (Ec):  
They refer to economic growth, inflation rates, interest rate fluctuations, GDP, income, government expenditure, economic stability, Internet high cost, inadequate allocation of funds for ICT education.
- Social Factors (S):  
These factors refer to society cultures, education level, beliefs, behaviours, users' demographics, social conventions, lack of adequate IT skills in the public sector, insufficient IT skills of citizens in using computers and advanced technologies, poor awareness of the e-government benefits, absence of public trust in e-government.
- Technological Factors (T):  
They refer to technology contribution to quality and quantity of e-services, infrastructure, Internet access and availability, technology development, lack of consistency in ICT applications and business processes, lack of adequate measures to guarantee security and privacy.

The above factors are interrelated. For example, wage can be both an economic and a political factor (G. A. Deirmentzoglou and E. A. Deirmentzoglou , 2022).

### **3. Exploration of external factors**

#### **3.1 Political factors**

The extent to which policy makers are likely to intervene in the commercial environment is a crucial factor in a PEST analysis (Sammuto-Bonnici & Galea, 2014).

- In July 2021, a grant program of 8 million Euros, co-financed by the European Regional Development Fund (ERDF) of the European Union and by national resources, was putted in practice across the country. The Action aimed at

subsidizing SMEs in the retail sector for the development (5.000,00 euros) or the upgrade (1.500,00 euros) and management of an e-shop in order to support their operation during the pandemic (COVID-19), to strengthen the degree of integration of digital technology, as well as their digital transformation and to avoid overcrowding in indoor spaces (ESPA 2021).

- in March 2022, government announced a 30 million euros funding program: Subsidy for businesses providing accounting and tax services 1.500 or 2.000 determined by their previous year income. The Action was co-financed by the European Social Fund (ESF) of the European Union and by national resources. The Action concerns the support of Self-Employed Accountants, as well as Legal Entities providing accounting and tax technical services, in order to immediately respond to their digital modernization needs, due to the expanded and continuous needs for using digital applications to the provision of their services, fulfilling the criteria of being SME (ESPA 2021).
- In June 2022, a funding program, "Digital Transformation of Small and Medium Enterprises", part of the National Recovery and Resilience Plan Greece 2.0, was putted in action. Its purpose is to strengthen the digital maturity of the country's small and medium enterprises (SMEs), in order to modernize their productive, commercial and administrative functions. This Action is divided into three individual State Aid Programs.

**Program I:** "SME Digital Tools" provides vouchers that will be allocated for the acquisition, through purchase or lease, of new digital products and services, aiming to strength the digital maturity of the country's small and medium enterprises (SMEs), by using various digital tools.

**Program II:** "Development of Digital Products and Services", a budget of 100 million euros, digital investments will be subsidized, as a non-refundable grant, amounting between 200,000 and 2 million euros, for the development of infrastructure and cloud services.

**Program III:** "Digital Transactions", includes the upgrade or replacement of cash registers, as well as the replacement of old POS machines. This is a project implemented by National Recovery and Resilience Plan "Greece 2.0" framework, which is funding by European Union – NextGenerationEU. Its total budget amount to 445 million euros (Greece2.0, 2022).

- In May 2022, legislation L. 4935/2022 was passed by the government, referring to incentives for mergers and partnerships of medium-sized, small and micro-enterprises, including income tax relief up to 30% on profits. Moreover, it is exempt from income tax, the income which arises from the capital gain from the transfer of assets of the new company to a third party. Extremely important is the provision in article 11, which refers to the transfer of damage from transforming businesses on the balance sheet of the new company and the possibility tax offset against the profits of the new company. Significant economies of scale will be created and borrowing capacity will be increased (Hellenic Parliament, 2022).

- In September 2022, Ministerial Decision N. 139818/2022 was published. According to this, expenses related to the promotion of the green economy, energy and digitization, since these will be deducted from the gross income of small and medium enterprises, increased by a percentage of up to 100%.

This tax measure includes expenses related to:

- (a) Protection and management of forest environment, sanitation and cleaning of soil, water, marine areas, air and pollution control.
- (b) Improvement in energy efficiency, energy saving (produced and consumed), green transition and renewable energy sources, including research and the preparation of relevant studies
- (c) Research and experimental development in biotechnology and research in electricity technology.

Excluded from the application of this are small and medium-sized enterprises active in primary agricultural production and fishing- aquaculture sector (Taxheaven.gr, 2022).

- In September 2022, pre-publication of Action "Research - Innovation 2021-2027" was announced. It is co-financed by the European Union and the Greek State. The total public expenditure amounts to 300 million euros. The main objective of this program is to connect research and innovation with entrepreneurship and to strengthen competitiveness, productivity and extroversion of businesses towards international markets (Special Action Management and Implementation Service in the areas of Research, Technological Development and Innovation, 2022).
- In June 2022, a Guarantee program, which will enable the granting of loans, working capital and investment purposes, totaling 2.5 billion euros, was announced. Greece is committing 500 million euros, which will be allocated to finance the national leg of InvestEU for investments across the country. The 500 million euros of "Greece 2.0" that will be channeled into this specific financial instrument, will act as a guarantee, so Greek commercial banks, cooperating with the program, will grant working capital and investment loans to small and medium-sized enterprises, from the beginning of 2023(greece2.0.,2022).

### **3.2 Economic Factors**

Economic conditions affect how easy or how difficult it is to be successful and profitable at any time because they affect both capital availability and cost, and demand (Koumparoulis, 2013).

- Economic activity recovered strongly at full speed during 2021, after the forecast recession recorded in 2020 as result of the effects of the pandemic. The 2021 GDP increased by 8.3% in relation to 2020 (National Bank, 2021).

- In Greece, as in most developed economies, since the beginning of 2021 there has been a significant rise in industrial import price index, as well as in goods (National Bank, 2021).
- The increases in energy prices and other basic commodities intensify inflationary pressures, resulting in increase of cost-of-living standards and in limitation of net disposable income of households for consumption. In addition, significant disruptions in production are caused due to increased production costs and transport, with negative consequences for business investment (National Bank, 2021).
- Recovery product of services (mainly in tourism and technical sector), but also of industry and of constructions, characterized the developments from supply side. The dynamic recovery of the economy's product in 2021 is also reflected to the strong increase in the turnover of all businesses in the Greek economy by 21.1% (National Bank, 2021).
- The data of the non-financial accounts of ELSTAT's institutional sectors of 2021 show a significant increase in business profits in relation with the corresponding period of 2020. The lifting of the restrictive measures that were in force until in the first months of 2021, as well as the recovery that has been observed in almost every forms of Greek economy and mainly in the tourism and transport sector have helped Greek businesses to recover significantly. More specifically, the gross operating surplus of businesses increased by 45.8% in first nine months of 2021 (against a decrease of 18.9% in the corresponding period of 2020) (National Bank, 2021).
- Private consumption recovered strongly due the second quarter of the year, as it supports from the release of the deferred of household consumption, but also from the rise in real disposable income (National Bank, 2021).
- In 2022, minimum monthly salary has been increased 4% (from 650 € to 713 €). Although this measure aims to improve the income of low wage earners and boost disposable income and private consumption, labor costs will be affected (National Bank, 2021).
- In 2022, government activated new employment policies by subsidizing 150.000 jobs (National Bank, 2021).
- Access to finance remains difficult for many companies. The percentage of SMEs whose banks loan's applications were refused or rejected is much lower than the EU average. Similarly, venture capital investments and business angels funding is lower than EU average. Over the last two years, public support measures have helped many businesses survive during the COVID-19 crisis (European Commission, 2022).
- According to the Tax Foundation's International Tax Competitiveness Index (18.10.2021), which examines over 40 tax policy variables, Greece was ranked 29th among 36 states in 2021, as it was in 2020. However, its performance in absolute terms marginally improved as further reductions were made in corporate tax rate (to 22% from 24%) (National Bank, 2021).



- Due to Russia's military invasion in Ukraine on February 2022, the direct impact in European Economy is the consolidation of inflationary rates pressures at a higher level and for a longer period of time than initially was expected. War and accompanying economic sanctions cause higher energy prices, given the very high energy dependence of EU to Russia, and higher prices in industrial metals and food. Under these circumstances, inflation rise caused, affects household consumption, reduces income business viability and increases uncertainty of investors with risk of canceling or postponing investment decisions (National Bank, 2021).

### **3.3 Social Factors**

Social factors depict the society's culture and readiness for change. Human factor is of great importance in entrepreneurship.

- Although levels of educational attainment in Greece have increased over time, there are concerns that the education and training system is not sufficiently aligned with labour market needs. In fact, university education is frequently criticized for not conferring upon its graduates the cutting-edge skills that the labour market needs.

In other words, one of the major problems facing the Greek labour market is the relatively large share of low-skilled population. Indeed, Greece had one of the lowest overall scores in the European Skills Index (ESI) survey of 2022, only marginally improving its performance relative to 2020 (Anyfantaki et al., 2022).

- Greece's performance in terms of digital skills in relation to society is at low levels compared to the rest of the European Union countries. The incomplete connection of education with the labor market, the leakage of talent abroad (brain drain), the low level of reskilling and upskilling can be considered the main causes of this phenomenon (SEV, 2022).

### **3.4 Technological Factors**

Technological factors determine, by their availability or lack, the technical requirements that enterprises need to meet their objectives.

- SMEs access to public administration is improving thanks to the recent digitalization efforts of the public domain and the implementation of several laws aimed to simplify the framework for business activities. Further progress is expected since modernization of the regulatory framework to reduce the administrative burden on businesses is a key priority of the Recovery and Resilience plan (European Commission, 2022).
- Greece is implementing significant investments for the further penetration of high-speed connections (3rd place in 5G readiness) and almost all of the spectrum has been allocated through the relevant tender procedures (SEV,2022).

## **4. Discussions**

The above recording and exploration of the external environment for the adoption of digital transformation through Pest analysis framework, the following conclusions can be drawn:

Regarding the political external environment of businesses, Greek government and Greek companies seem to adopt a more active perspective, considering digital transition. At this point it is important to say that the Greek economy seems to be recovering from the effects of the Covid-19 pandemic.

Stability has been observed in the political environment, which is necessary for the implementation of investments. The government, following European policy and aiming to further develop the domestic economy, is trying to create incentives for businesses to adopt new practices and evolve. The offering subsidies are relatively recent and only the creation of e-shops has managed to be completed. The rest are at the initial stage of applications. From the above, it is understood that there are still no data and results to research. The same applies to the tax incentives given for the mergers of SMEs and the tax exemptions concerning expenses related to the digitization.

The analysis of the economic external environment of businesses highlighted the recovery of the tourism sector, construction and the services provided. However, it was highlighted the existence of difficulty of businesses in bank lending, the increase in wage costs, the prices of fuels, metals and raw materials in general. The increase in inflation is mainly due to the ongoing war in Ukraine and the global energy shortage. On the economic side, the war causes economic disturbances in the market. As a result of these, a sense of insecurity is created in businesses and investment freezes. Accordingly, private consumption is also affected, as it had decreased during the period of the pandemic, when there was uncertainty again.

As far as social factors are concerned, the problem is found in low digital maturity. The digital skills of Greek society are deficient both from the employee and consumer side. This acts as a deterrent to business staffing.

Finally, in terms of the digital infrastructure of the external environment there are positive elements, but digital governance is still at an early stage and the 5G installation projects have not yet been completed.

## **5. Conclusions**

Greek SMEs can take advantage of governmental policies to adopt DT in long-term. Using subsidies for their own benefit, companies may confront economic environment challenges and war uncertainty. However, the state should support and reorganize its educational system to align labor market need in digital skills and knowledge with its provided education. In addition, it has to reinforce, through legislation, digital reskilling and public sector assessment. Digital transformation refers not only in implementation of digital processes, but also to adoption of client-centric business culture. So, it is of high importance to establish digital culture in

society. Finally, it is crucial for government to accelerate installation of technological infrastructure, to facilitate entities adjustment in digital era.

The present research is limited to secondary data regarding digital transformation in Greece after the pandemic. Future research should be conducted after the completion of funding and financial programs that government has applied, to identify impacts and results of external factors that were discussed.

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