23rd RSEP International Economics, Finance & Business Conference – Virtual/Online
25-26 November 2021, University of Washington Rome Center, Rome, Italy

www.rsepconferences.com **CONFERENCE PROCEEDINGS/FULL PAPERS** **ISBN: 978-605-70583-5-5/December 2021**

Sabau (Popa), A.I., Achim, M.V., Safta, L.I. pp.287-302

Does corporate governance may enhance the digitalization process? A panel data analysis

Andrada-Ioana Sabău (Popa)[a], Monica Violeta Achim[b], Lavinia-Ioana Safta [c]

[a] *PhD candidate, Babeș-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Cluj, Romania*
E-mail: andradaa.ioana@yahoo.com

[b] *Prof. Ph.D. Babeș-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Cluj, Romania*

[c] *PhD candidate, Babeș-Bolyai University, Faculty of Economics and Business Administration, Cluj-Napoca, Cluj, Romania*

Abstract

Digitalization of the economy has many benefits for the general well-being of the society. Economic entities through the economic activities carry out to contribute directly to the growth rate of the digitization process. The corporate governance of the entities plays the main role in the leading of the companies. It reflects in a transparent manner the state of a certain business, increasing the trust of the interested parties. That is why, for the current study our purpose was to identify how does corporate governance may boost the digitalization process among companies. The quality of corporate governance is measured using two elements extracted from the Global Competitiveness Index (GCI): Efficacy of corporate boards and Strength of auditing and reporting standards. To measure the Digitalization, three elements were considered: Individuals using the internet, Mobile cellular subscriptions, and Fixed telephone subscriptions, from the World Bank database, for the same period. A panel data analysis is conducted on a sample of 185 countries over the period 2007-2017. We obtain important evidence that show a positive impact on corporate governance quality on the process of digitalization of economy measured by Individuals using the internet and partially, using Mobile cellular subscriptions. A robustness checks using Digital Economy Society Index (DESI) as measures of digitalization also validate our results. The obtained results are important for public governance, investors, companies, governments to highlight the playing role of a good corporate governance for increasing the general well-being of the society within the digital economy.

Keywords: digitization, financial statements, corporate governance, audit reporting

Jel codes: G32, M11

1. Introduction

During the time, specialists have struggled to digitalize various processes that compose the business. At the same time, technologies have evolved and created the need to be synchronized with the interested parties' expectations. Thus, in a digital world, companies must keep the rhythm with all that is changes around them. Now, more than ever digitalization has reached the highest potential, and became a necessity for every company. It is a challenge for everyone since novelty was always seen with scepticism. Some adapt easier, some take longer. The Corporate Governance reporting is one of the important parts of the business. Various researchers have approached the impact of digitalization over the corporate governance reporting. Fenwick et al. (2019) concluded that, in terms of business models, and its implications (corporate governance), it cannot be a one-size-fits-all approach. They must be personalized. Also, Cheffi & Abdennadher (2019), have reached to the conclusion that executives members worry about the internet voting, in sense that it will lead to loss of control. In another study conducted by Fenwick (2019) the author has conceptualize a new perspective over corporate governance in terms of digitalization. Despite various approaches, there are still gaps to be filled. The novelty of the conducted study is the variables approached and tested, to see how they interconnect. Thus, in the current study we have set our focus over the impact of digitalization over the quality of corporate governance. In such a rush era, it is quite impossible to ban digitalization. We have used data selected from the Global Competitiveness Index (GCI), for the period 2007-2017, containing 185 countries.

To measure Corporate Governance, we have considered two elements from the database: *Efficacy of corporate boards and Strength of auditing and reporting standards*. For measuring the level of digitalization, *Individuals using the internet, Mobile cellular subscriptions, and Fixed telephone subscriptions* were extracted. The panel data analysis was the most appropriated for the selected sample. Among all the variables a direct and positive relation was found. On one hand, the strongest relationship is found between *Strength of auditing and reporting standards and Efficacy of corporate boards*. On the other hand, the weakest connection was found between *Strength of*

auditing and reporting standards and Mobile cellular subscriptions. To validate the results, we have conducted a robustness test, for European countries, for the period 2015-2017. The results have validated the regression made through panel analysis. Meaning that the relationship between DESI and Strength of auditing and reporting standards, but also between DESI and Efficacy of corporate boards is strong. An increased in efficacy of corporate boards and strength of audit and reporting standards, will translate into an increased level of DESI.

The outline of the paper is as follows; in chapter two a brief literature review regarding Corporate Governance, and Digitalization was presented. In section three the methodology and data were detailed, followed by chapter four, where the results were described. In the end, the conclusion of the study was briefly presented.

2. Literature Review

In the following, a brief literature review regarding Corporate Governance and Digitalization were made.

2.1. The relationship between Corporate Governance and Digitalization

In the report published in 2017, OECD indirectly encounters the benefits of digitalization: "*technologies, smart applications and other innovations in the digital economy can improve services and help address policy challenges in a wide range of areas, including health, agriculture, public governance, tax, transport, education, and the environment, among others*" (Kirton, Warren, 2018).

The ideas about the digitalization process are divided in various opinions. Fenwick & Vermeulen (2018) underline in a realistic manner the fact that the stakeholders are various, and move in different directions, each at its own speed. In the context of a digital world, digitalization has made it easier to fulfil the duties as a stakeholder. More specifically, digitalization has made it simpler to prepare, participate and vote in the general meetings. It has made the relationship between the shareholders and company safer and more efficient (Jadek, 2019).

In the literature, it is specified the fact that when it comes to digitalization, the board of directors plays an important part of the process. It has impact over the company's performance and organizational behaviour. Board of directors is involved, and they influence different decisions that are to be made in a company (Bankewitz, 2016).

An insight perspective was made by Nambisan et al. (2017). In terms of digital management, it is necessary to implement various tools, processes and learning to manage them all.

Taking into account the quality of corporate governance, and digitalization, companies must give a great deal of importance over the Risk Management Committee. It is in the management team responsibility that this component will efficiently have establish the principles to follow. The case of Sony Pictures, with the cyber-invasion which have caused significant losses by revealing sensitive information. This matter has risen a lot of questions over the vulnerability of the companies to which are exposed through digitalization (Elkind, 2015).

An interesting overview was made between corporate governance and artificial intelligence, in the sense that, due to the recent studies, it is possible to efficiently be capable of selecting board members. The result would be a decrease of agency costs for the companies Fenwick and Vermeulen (2018).

The digitalization of corporate governance process increases the efficiency of companies, but it also comes with a great deal of risk. Due to the increasing of cyber-attacks, the Risk Management must overcome, as much as it can the possible breaches in the systems. It is an advantage, that can easily turn into disaster, if badly managed.

In the following, we have approach Audit, as a qualitative component in the Corporate Governance reporting, in relationship with Corporate Governance, as whole process. It was also explored the relationship between Digitalization, and Audit.

2.2. The relationship between Corporate Governance and Audit

Audit is a component in the Corporate Governance reporting. It is one of the elements that influence the quality of reporting. In the literature, it is considered that audit is a corporate governance mechanism, designed to identify

and avoid potential misunderstandings between the interested parties and the management team (Carcello et al., 2011)

Wallace (2004) has highlighted the three roles of the audit process related to corporate governance:" *monitoring, information and insurance roles*".

An interesting perspective was mentioned in the article written by Baatwah & Qadasi (2020) underlining the fact that several meaningful profesionists have acknowledge the internal audit function, as the most important corporate governance mechanism, when addressing the agency problem.

Speaking of theories related that demonstrate the need of audit practices, related to corporate governance process, the most appropriate are agency theory and stakeholders' theory (Manita et al., 2020). Regarding this matter, audit is perceived as the solution of the agency issues. On one hand, the management team has the responsibility to have the overview of the financial information, and everything that happens in a company. On the other hand, stakeholders only know what is transmitted from the inside of the company. Here, the asymmetry of information can arise and be a problem. Managers will tend to follow their own interest and neglect the ones of the stakeholders. Thus, the audit is a mean by which the stakeholders are assured that the financial information is transparently transmitted (Manita et al., 2020). In the case of stakeholder theory, the managers must assure the satisfaction of all the stakeholders (customers, suppliers etc.), as a group. This being said, the auditors will ensure the interest of all the financial statement users (Manita et al., 2020). An interesting perspective was detailed by Widani and Bernawati (2020), regarding the relationship between corporate governance and audit. The results from their study, have shown the fact that corporate governance does not affect the quality of audit reporting, but rather the ownership concentration have strengthened the effectiveness of CG on the audit quality.

On the same note, Suwarno and Suwandi (2020) have shown the fact that the effectiveness of corporate governance is proxied by the audit committee, the number of board of directors, and institutional ownership. Ibadin and Ehigie (2019), in the conducted study, have demonstrated that an increase in the Board Composition (non-executive directors), Board Gender Composition (increased level of female gender) audit committee, companies have registered a reduction of financial statement fraudulent activities. Regarding the quality of the audit reporting, it is demonstrated in the literature the fact that the board of directors have found a way to control the managers' opportunistic behaviour. To do so, they issue a qualitative audit from external auditors (Gull et al., 2020).

Auditing process is a component in the corporate governance reporting. As the rest of the components, it is very important to follow the principles of auditing reporting. It was demonstrated, as we have also mentioned above some of the studies, in the literature the fact that a qualitative audit will automatically restore to a qualitative corporate governance reporting, which translated into a successful path of the company. Following the idea that the audit process is an important element in the Corporate Governance reporting, the relationship with the digitalization process was analysed in terms of literature review.

2.3. The relationship between Audit and the Digitalization process

Digitalization is expanding its scope more and more; audit being included in this sphere of impact. The world of fast connections between people and devices is booming. Through connectivity technologies such as platforms, collaborative software, communication applications or portals, huge amounts of information are traded between devices but also between people. Beyond the challenges of such technology, companies also have the opportunity to increase their transparency, risk assessment capacity and audit quality and to automate their processes. This connectivity makes it easier for companies to create an information environment that gives them in-depth knowledge of their operations, including auditing (Adiloglu, and Gungor, 2019). It is often a challenge for organizations to keep pace with this ongoing transformation of technology, but it provides an opportunity in public and private company auditing to increase transparency, improve risk assessment, automate manual processes, and ultimately, to increase the quality of the audit. (Babayeva and Manousardis, 2020) The financial audit that uses digital channels has three components: automation, data analysis and the experience delivered to the customer through digitization.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

The digital infrastructure is very important (platform, software, etc.) because it makes the connection between the members of the audit team and the connection between them and the audited company (Nezhyva and Miniailo, 2020). In the conditions of a permanent information from any device, it is self-evident the existence of a functionality that allows accessing the information from the mobile phone as well. The importance of a digital platform used for financial audit is demonstrated by the digitization of worksheets, the way information is stored, shared and accuracy, etc. Real-time updates on each step of the audit process allow the audit team and the audited company to exchange information quickly and securely (Manita et al., 2020). Companies can use the power of connectivity to benefit from a digitally transformed audit that enhances quality while driving value.

The benefits of transformation: use with the auditor the amount of structured and unstructured data collected; gain a deeper understanding of balance sheets and allow monitoring of fraud controls and improved reporting processes; facilitate information sharing and auditors' access to their own work systems. When information is shared securely and efficiently through a fully digital audit platform, the audit process will run more smoothly, and the quality of the audit will be improved. (Babayeva and Manousardis, 2020).

The digitalization of the audit process is an aspect that must be taken into considerations, even if we talk about the internal audit or external. The connectiveness between the available data and information communicated will make the process more efficient and easier. Also, it will ensure a safer processing of the data minimizing the human error.

Taking into account the literature, the following working hypothesis is stated:

Hypothesis: Does corporate governance may enhance the digitalization process?

3. Data & Methodology

3.1. Dependent variable- Digitalization

In our paper we measure digitalization using the following variables: Individuals using the internet, Mobile cellular subscriptions, and Fixed telephone subscriptions (Achim et al., 2021). The data are provided from the World Bank Group (2021).

3.2. Independent variable- Corporate governance quality

In order to measure the quality of corporate governance in different countries, we will use two important indicators (Achim and Borlea, 2020): (a) *Efficacy of corporate board* and (b) *Strength audit and reports.* Both indicators are calculated and reported in the Global Competitiveness Indicator (GCI) (2021), determined as a global tool for measuring national competitiveness for economies around the world. This score is provided annually by the World Economic Forum in the Global Competitiveness Report. Both indicators are between level 1 (the weakest) and 7 (the best), thus reflecting the efficiency of corporate governance within national economies.

3.3. Control variables- Economic development

According to Gomez et al. (2019) and Naumova et al. (2019) economic development is found one of the main determinants of the digitalization process. Gross domestic product measures the level of development of a certain country. Previous literature has demonstrated the fact that an increased GDP (Gross domestic product) translates into an increase in the digitalization process. We intend to investigate if a high quality of corporate governance may increase the level of digitalization. For this purpose, a panel analysis is conducted for a sample of 185 countries over the period 2007-2017. Statistical processing was performed using the program Eviews 10.0.

The general form of our model is:

$$\boldsymbol{Digitalization_{it} = \beta_0 + \beta_1 Corporate\ governance_{it} + \beta_{(j)2} Controls(j)_{it} + C_i + \varepsilon_{it}}$$

Where,

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

- $Digitalization_{it}$ is the dependent variable for the country i and period t;
- $Corporate\_governance_{it}$ is the independent variable, namely Education of the country i for the period t ;
- $Controls(j)$ is the control variable for country i in year t;
- β0 denotes intercept;
- β1 is the regression coefficient that will indicate the extent to which the independent variable Corporate+governancei is associated with the dependent variable Digitalizationit, if β1 is found to be statistically significant;
- $\boldsymbol{\beta_{(j)2}}$s the regression coefficient for the jth variable in the vector of controls; j denotes the ranges, for the vector of control variables;
- ε_{it} is the residual or prediction error for country i at year t.

4. Results and discussions

4.1. Descriptive statistics

Table 1 presents the summary statistics for our original variables, before rescaling them. As such, *Mobile cellular subscriptions* vary from 2,88 to 9,17, with an average value of 6.67% and a standard deviation of 0.852. Then, *Fixed telephone* subscriptions scores range from 0 to 8.5, with an average value of 5.76 points. *Efficacy of corporate boards* registers an average value of 4,64, with the maxim value of 6,34 and minimum 0. Furthermore, the average value of *Individuals using internet* is 38,38. with the maxim value of 98,26 and minimum 0,22. Nonetheless, the summary statistics on *Strength of auditing and reporting* show than on average 4,67% of our sampled companies have an audit committee.

Table 1. Summary Statistics on values

Variabile	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
Mobile cellular subscriptions	6.77	6.8400	9.1700	2.8800	0.85275	2009
Fixed telephone subscriptions	5.76	5.7700	8.56000	0.00000	1.02920	1979
Efficacy of corporate boards	4.643093	4.6200	6.34000	0.00000	0.65836	1513
Individuals using internet	38.38329	34.070	98.2600	0.22000	29.1378	1943
Strength of auditing and reporting	4.671874	4.6450	6.730	2.13000	0.87803	1510

Source: Own processing

Table 2 reflects the correlation coefficients between the indicators: *strength of auditing and reporting, effectiveness of corporate boards, individuals using internet, mobile cellular subscriptions, fixed telephone subscriptions*. Correlation coefficients are used to measure the strength of the linear relationship between two variables. A correlation coefficient greater than zero indicates a positive relationship, while a value less than zero means a negative relationship, to determining the degree to which indicators contribute to the relationship by composing equations, regressions. Following the correlation matrix, it is observed that the strongest positive 0.797244 link is between *Strength of auditing and reporting* and *Efficacy of corporate boards*. The connections that stand out are

those between landline and *Mobile cellular subscriptions* which also indicates value 0.779384, *Strength of auditing and reporting* and *Individuals using internet* and *Efficacy of corporate boards*, landline and individual. The weakest but still positive connection is between mobile and hearing. Overall, all links between the indicators analysed are positive.

Correlation	**Strength of auditing and reporting**	**Individuals using internet**	**Efficacy of corporate boards**	**Fixed telephone subscriptions**	**Mobile cellular subscriptions**
Strength of auditing and reporting	1.000000				
Individuals using internet	0.639149	1.000000			
Efficacy of corporate boards	0.797244	0.533982	1.000000		
Fixed telephone subscriptions	0.284809	0.413889	0.211685	1.000000	
Mobile cellular subscriptions	0.012378	0.041843	0.061922	0.779384	1.000000

Table 2. Correlation Matrix

Source: Own processing

To determine the connections or the lack of connections between the analysed indicators, regressions were created and thus we obtained the following conclusions. As a significant threshold for regressions, we chose 0.05 (5%), which means that a p value less than 0.05 is taken as evidence to reject the null hypothesis of a zero coefficient.

In table 3, the first regression shows that the *Individuals using the internet* as the dependent variable is affected by *Strength of auditing and reporting* and GDP. The independent variable and control variable are statistically significant, and the following equation is created.

Individuals using internet = 1.79 * Strength of auditing and reporting + 38 * GDP-110

When the *Strength of auditing and reporting* increased by one unit, *Individuals using the internet* increased by 1.79, and when the GDP increased by one unit, individuals using the internet increased by 38 units. The Adjusted R2 of this first model is of 76%, so str explains 76% of individuals using internet

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 3. Strength of auditing and reporting within Individuals using internet regression

Dependent Variable: Individuals using internet regression				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1448				
Variable	***Coefficient***	***Std. Error***	***t-Statistic***	***Prob.***
Strength of auditing and reporting	1.795045	0.583098	3.078463	0.0021
GDP	38.08420	0.806615	47.21484	0.0000
C	-110.1516	2.292605	-48.04647	0.0000
R-squared	0.769984	***Mean dependent var***		44.03004
Adjusted R-squared	0.769666	***S.D. dependent var***		29.01192
S.E. of regression	13.92374	***Akaike info criterion***		8.107137
Sum squared resid	280142.9	***Schwarz criterion***		8.118072
Log likelihood	-5866.567	***Hannan-Quinn critter.***		8.111218
F-statistic	2418.585	***Durbin-Watson stat***		0.106417
Prob(F-statistic)	0.000000			

Source: Own processing

In table 4, the equation was formed using also statistically significant variables, between *Individuals using the internet, Efficacy of corporate boards* and GDP.

Individuals using internet regression = 5.16 * Efficacy of corporate boards +37.08 GDP-121

When the *efficiency of corporate boards* increased by one unit, *Individuals using internet regression* increased by 5.16, and when the GDP increased by one unit, it increased by 37.08 units.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 4. Efficacy of corporate boards within Individuals using internet regression

Dependent Variable: Individuals using internet regression				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1451				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Efficacy of corporate boards	**5.168338**	**0.625890**	**8.257586**	**0.0000**
GDP	37.08014	0.652826	56.79941	0.0000
C	-121.9088	2.740240	-44.48838	0.0000
R-squared	0.776822	**Mean dependent var**		44.02957
Adjusted R-squared	0.776514	**S.D. dependent var**		29.00500
S.E. of regression	13.71191	**Akaike info criterion**		8.076473
Sum squared resid	272248.0	**Schwarz criterion**		8.087389
Log likelihood	-5856.481	**Hannan-Quinn critter.**		8.080546
F-statistic	2520.051	**Durbin-Watson stat**		0.117458
Prob(F-statistic)	0.000000			

Source: Own processing

In table 5, having as a dependent variable *Mobile cellular subscriptions* and as independent variable, *Strength of auditing and reporting*, the significance threshold is increased which makes them statistically insignificant.

Table 5. Strength of auditing and reporting within mobile cellular subscriptions regression

Dependent Variable: Mobile cellular subscriptions				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1490				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Strength of auditing and reporting	0.026337	0.029109	0.904787	0.3657
GDP	-0.027116	0.040003	-0.677841	0.4980
C	6.984585	0.114901	60.78783	0.0000
R-squared	0.000553	**Mean dependent var**		7.003987
Adjusted R-squared	-0.000791	**S.D. dependent var**		0.707147
S.E. of regression	0.707426	**Akaike info criterion**		2.147645
Sum squared resid	744.1723	**Schwarz criterion**		2.158329
Log likelihood	-1596.996	**Hannan-Quinn criter.**		2.151627
F-statistic	0.411483	**Durbin-Watson stat**		0.011052
Prob(F-statistic)	0.662742			

Source: Own processing

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 6 represented relationship between M*obile cellular subscriptions* and *Efficacy of corporate boards*, controlling for GDP. The results show that only *Efficacy of corporate boards* is statistically significant what follows from the following equation.

Mobile cellular subscriptions = 0.111172975375 * Efficacy of corporate boards + 6.71224275134

When the E*fficiency of corporate boards* increases by one unit, it increases by 0.11, and when it increases by one unit, the GDP decreases by -0.059 units. GDP is statistically insignificant.

Table 6. Efficacy of corporate boards within mobile cellular subscriptions regression

Dependent Variable: Mobile cellular subscriptions				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1493				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Efficacy of corporate boards	0.111173	0.031614	3.516583	0.0005
GDP	-0.059075	0.032669	-1.808268	0.0708
C	6.712243	0.140335	47.83026	0.0000
R-squared	0.008241	**Mean dependent var**		7.002451
Adjusted R-squared	0.006910	**S.D. dependent var**		0.707667
S.E. of regression	0.705218	**Akaike info criterion**		2.141387
Sum squared resid	741.0246	**Schwarz criterion**		2.152054
Log likelihood	-1595.545	**Hannan-Quinn criter.**		2.145362
F-statistic	6.190411	**Durbin-Watson stat**		0.013414
Prob(F-statistic)	0.002102			

Source: Own processing

In the table 7 the link between the dependent variable *Fixed telephone subscriptions* and the independent variable *Efficacy of corporate boards* is analysed, with GDP as control variable. The results do not show a statistical significance between *Fixed telephone subscriptions* and the independent variable *Efficacy of corporate boards,* but a positive and statistically significant relationship with GDP.

Fixed telephone subscriptions = 0.617986168617 * GDP + 3.53585177349

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 7. Efficacy of corporate boards within Fixed telephone subscriptions regression

Dependent Variable: Fixed telephone subscriptions				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1486				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Efficacy of corporate boards	0.028919	0.036005	0.803187	0.4220
GDP	0.617986	0.037424	16.51326	0.0000
C	3.535852	0.159761	22.13216	0.0000
R-squared	0.202064	**Mean dependent var**		6.034132
Adjusted R-squared	0.200988	**S.D. dependent var**		0.896160
S.E. of regression	0.801054	**Akaike info criterion**		2.396241
Sum squared resid	951.6237	**Schwarz criterion**		2.406949
Log likelihood	-1777.407	**Hannan-Quinn criter.**		2.400232
F-statistic	187.7729	**Durbin-Watson stat**		0.036824
Prob(F-statistic)	0.000000			

Source: Own processing

Table 8 shows the link between the dependent variable *Fixed telephone subscriptions* and the independent variable *Strength of auditing and reporting* with GDP as control variable. As in the previous case, the results do not show a statistical significance between *Fixed telephone subscriptions* and the independent variable *Strength of auditing and reporting*, but a positive and statistical significant relationship with GDP.

Fixed telephone subscriptions = 0.634227786519 * GDP + 3.60862874311

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 8. Strength of auditing and reporting within Fixed telephone subscriptions regression

Dependent Variable: Fixed telephone subscriptions				
Method: Panel Least Squares				
Total panel (unbalanced) observations: 1483				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Strength of auditing and reporting	0.000179	0.033059	0.005429	0.9957
GDP	0.634228	0.045435	13.95910	0.0000
C	3.608629	0.131162	27.51266	0.0000
R-squared	0.202943	**Mean dependent var**		6.035374
Adjusted R-squared	0.201866	**S.D. dependent var**		0.896476
S.E. of regression	0.800897	**Akaike info criterion**		2.395853
Sum squared resid	949.3258	**Schwarz criterion**		2.406578
Log likelihood	-1773.525	**Hannan-Quinn criter.**		2.399850
F-statistic	188.4155	**Durbin-Watson stat**		0.036802
Prob(F-statistic)	0.000000			

Source: Own processing

4.2. Robustness checks

To reinforce our results, we perform as robustness checks consists in considering an alternative variable for the dependent variable, digitalization. Therefore, we use Digital Economy Society Index (DESI) as an alternative measure of Digitalization. Digital Economy and Society Index measures the progress that Member States of the European Union carry them out in the direction of a digital economy and society. DESI is calculated annually and consists of five major areas: connectivity, human capital, use internet, integration of digital technology and services digital public. In order to determine the connections or the lack of connections between the analysed indicators, regressions were created and thus we obtained the following conclusions. As a significant threshold for regressions, we chose 0.05 (5%), which means that A p value less than 0.05 is taken as evidence to reject the null hypothesis of a zero coefficient.

Table 9 shows the link between *Digital Economy and Society Index* as the dependent variable and *Efficacy of corporate boards* as independent variable, controlling for GDP. The results show a positive and statistical influence of *Efficacy of corporate boards* on the level of digitalization measured by *Digital Economy and Society Index.* Also, the influence of GDP over the level of digitalization is positive and statically significant.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 9. Efficacy of corporate boards within Digital Economy and Society Index regression

Dependent Variable: Digital Economy and Society Index				
Method: Panel Least Squares				
Sample: 2015 2017				
Cross-sections included: 28				
Total panel (balanced) observations: 84				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Efficacy of corporate boards	7.928046	1.152939	6.876379	0.0000
GDP	8.304445	2.989300	2.778057	0.0068
C	-35.88318	9.916782	-3.618430	0.0005
R-squared	0.669874	**Mean dependent var**		42.27667
Adjusted R-squared	0.661723	**S.D. dependent var**		9.009318
S.E. of regression	5.239962	**Akaike info criterion**		6.185566
Sum squared resid	2224.033	**Schwarz criterion**		6.272381
Log likelihood	-256.7938	**Hannan-Quinn criter.**		6.220465
F-statistic	82.18052	**Durbin-Watson stat**		0.171919
Prob(F-statistic)	0.000000			

Source: Own processing

Table 10 shows the link between *Digital Economy and Society Index* as the dependent variable and *Strength of auditing and reporting* as independent variable, controlling for GDP. The results show a positive and statistical influence of *Strength of auditing and reporting* on the level of digitalization measured by *Digital Economy and Society Index.* Also, we find that the influence of GDP over the level of digitalization is positive and statically significant.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Table 10. Strength of auditing and reporting within Digital Economy and Society Index regression

Dependent Variable: Digital Economy and Society Index				
Method: Panel Least Squares				
Sample: 2015 2017				
Cross-sections included: 28				
Total panel (balanced) observations: 84				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Strength of auditing and reporting	6.168407	1.070135	5.764139	0.0000
GDP	11.70058	2.958371	3.955075	0.0002
C	-41.24779	10.35615	-3.982926	0.0001
R-squared	0.629241	**Mean dependent var**		42.27667
Adjusted R-squared	0.620087	**S.D. dependent var**		9.009318
S.E. of regression	5.553084	**Akaike info criterion**		6.301645
Sum squared resid	2497.776	**Schwarz criterion**		6.388460
Log likelihood	-261.6691	**Hannan-Quinn criter.**		6.336544
F-statistic	68.73541	**Durbin-Watson stat**		0.255209
Prob(F-statistic)	0.000000			

Source: Own processing

It can be seen that after the two regressions the robustness test validates our results. The results are consolidated by the robustness test, it was used as a dependent DESI variable and as proxy variables.

We have aligned our results with other researchers, regarding the chosen topics. In the literature on one hand, Zerni 2012, Cahan & Sun 2015, have focused on the digitization of industries. On the other hand, the study conducted by Maghakyan et al. 2019, have shown the fact that an increase in the digitalization of customers helps auditors. More specifically, they have found that digitalization completely changes the business of acquisitions and offers auditors the opportunity to add value to working methods. An interesting approached was made by Bankewitz (2016), questioning whether the board of directors could be the key role to adapt the organization to new strategic changes. The researcher has partially answered, stating the there is a base on which digitalization could be introduced in a company trough the board of directors, leaving the question open for further researchers. On the same note, Manita et. al (2020), have studied the relationship between digitalization and audit as a governance mechanism. The authors have discovered a positive relationship, meaning that the digitalization of the audit function will increase the efficacy of corporate governance reporting.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Sabau (Popa), A.I., Achim, M.V., Safta, L.I. pp.287-302

5. Conclusions

The present paper intends to identify how does corporate governance may boost the digitalization process among companies. For the current study, we have used a panel data analysis over a sample of 185 countries with data provided from the World Bank database and Global Competitiveness Index (GCI) index, for the period 2007-2017.

The quality of corporate governance is measured using two elements extracted from the Global Competitiveness Index (GCI): *Efficacy of corporate boards* and *Strength of auditing and reporting standards.* To measure the Digitalization, three elements were considered: *Individuals using the internet, Mobile cellular subscriptions, and Fixed telephone subscriptions,* from the World Bank database, for the same period. We obtain important evidence that show a positive impact on corporate governance quality on the process of digitalization of economy measured by *Individuals using the internet and partially,* using *Mobile cellular subscriptions*. To consolidate our results, a robustness test was performed and confirmed the results by using DESI index, as measure of digitalization. The obtained results are important for public governance, investors, companies, governments to highlight the playing role of a good corporate governance for increasing the general well-being of the society within the digital economy.

To keep transparency increased, in a digital world seems like an easy thing to do. Especially for the companies where there are several employees working for the growth of the business. Digitalization in the context of Corporate Governance efficacy, becomes more and more a must rather than an option. Especially in the pandemic times that we live in, the economy must go on, and find various ways to function. The Corporate Governance process must be qualitatively fulfilled. Thus, new strategies, processes starting from the election of the board members, annual reports, audit commissions, risk assessment evaluation and so on, should be rethought in terms of digital processes, so the well-being of the business will continue to increase. Digitalization will continuously keep setting new challenges, to which companies must adapt their strategies. It is very practical to see the fact that the digital aspects can be enhanced by the quality of corporate governance. It is valuable information for public governance, investors, companies, governments to increase the prosperity of the business in a digital world.

The research is limited primarily by the lack of measures the quality of corporate governance at the macroeconomic level. As a future direction for the study, we intend to realize an extended analysis of relationship between corporate governance and digitalization using both microeconomic and microeconomic analysis. In addition, for reinforce our results in the future studies to reinforce our results, we intend to add other control variables such as innovation, intelligence, culture.

Aknowledgement: This work was supported by a grant of the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P4-ID-PCE-2020-2174, within PNCDI III.

References

Achim, M. V., Borlea, N. S (2020). Economic and financial crime. Corruption, shadow economy, and money laundering. *Springer*

Achim, M. V., Borlea., N.S., Mare C. (2016). Corporate governance and business performance: evidence for Romanian economy, *Journal of Business Economics and Management,* ISSN: 1611-1699, 17(3), 458-474.

Achim, M. V., Vaidean V.L., Borlea., N.S., (2021). Does technology matter for combating ecoomic and financial crime? A panel data study. *Technological and economic development of economy.* 27(1), pp. 223-261, DOI: 10.3846/tede.2021.13977.

Adiloglu, B., Gungor, N. (2019). The impact of digitalization on the audit profession: a review of Turkish independent audit firms. *Journal of Business Economics and Finance*, 8(4), 209-214.

Bankewitz M., Åberg C., Christine Teuchert, (2016), Digitalization and Boards of Directors: A New Era of Corporate Governance? *Business and Management Research*, Vol. 5, No. 2; 2016

Babayeva, A., Manousaridis, N. D. (2020). The Effects of Digitalization on Auditing-A Study Investigating the Benefits and Challenges of Digitalization on the Audit Profession, *INFM10 Department of Informatics*.

Baatwah S. R. , Qadasi A. A. A. (2020)Determinants of outsourced internal audit function: a further analysis, *Eurasian Business Review* volume 10, pages629–659.

Chan, P., M. Ezzamel, and D. Gwilliam. 1993. Determinants of audit fees for quoted UK companies. *Journal of Business Finance & Accounting* 20 (6): 765–786.

Cheffi W. & Abdennadher S. (2019), Executives' Behaviour and Innovation in Corporate Governance: The Case of Internet Voting at Shareholders' General Meetings in French Listed Companies, *Journal of Business Ethics* volume 156, pages775–798.

Dobrynin A.P., Chernykh K.Yu., Kupriyanovskiy P.V., Sinyagov S.A., (2016) Digital economy various ways to effectively apply technologies (BIM, PLM, CAD, IOT, Smart City, BIG DATA and others, *International Journal of Open Information Technologies*, 4(1), 4-11.

Elkind, P. (2015). Sony Pictures: Inside the Hack of the Century, *Part 1. Retrieved from http://fortune.com/sony-hack-part-1/*

Erceg-Hurn, D. M., Mirosevich, V. M. (2008). Modern robust statistical methods: an easy way to maximize the accuracy and power of your research. *American Psychologist*, *63*(7), 591.

Fenwick M., Erik P.M. Vermeulen, (2018), Technology and Corporate Governance Blockchain, Crypto, and Artificial Intelligence, *ECGI Working Paper Series in Law*, 48, p.1.

Fenwick M., McCahery J.A. &Vermeulen E.P.M. (2019). The End of 'Corporate' Governance: Hello 'Platform' Governance, *European Business Organization Law Review*, volume 20, pages171–199

Fenwıck M., Kaal W.A.,& Vermeulen E.P.M (2019). The "Unmediated" and "Tech-driven" Corporate Governance of Today's Winning Companies, *YUJL & Bus.*, 16, p.75.

Global Competitiveness Indicator (GCI) (2021), http://reports.weforum.org/global-competitiveness-report-2015-2016/competitiveness-dataset-xls/?doing_wp_cron=1636313429.21299004554748535156 2, accessed on 10.09.2021.

Gull A. A., Abid A., Lateef R. , Usman M., (2020) Women on board and auditors' assessment of the risk of material misstatement, *Eurasian Business Review*.

Gomez. P., Antonio G., Latorre, M.C., (2019), Digitalization, Multinationals and Employment: An Empirical Analysis of Their Causal Relationships, *Jahrbucher fur Nationalokonomie und Statistik*, Volume 239, Issue 3, Page 399-439

Jadek A. (2019), Impact of digitalisation on corporate governance, https://jadek-pensa.si/en/impact-of-digitalisation-on-corporate-governance/ , accessed on 29.10.2021

Kirton J.J. , Warren B. (2018) G20 Governance of Digitalization. *International Organisations Research Journal*, vol. 13, no 2, pp. 16–41 (in Russian and English).

Manita, R., Elommal, N., Baudier, P., & Hikkerova, L. (2020). The digital transformation of external audit and its impact on corporate governance. *Technological Forecasting and Social Change*, 150, 119751.

Maghakyan, A., Jarva, H., Niemi, L., & Sihvonen, J. (2019). Effect of Audit Partner Digitalization Expertise on Audit Fees:Empirical Evidence from the US and Finland, *SSRN*.

www.rsepconferences.com CONFERENCE PROCEEDINGS/FULL PAPERS ISBN: 978-605-70583-5-5/December 2021

Majumdar C.T. (2018), Digitalization and Corporate Governance: Challenges, Impact and the way Forward,https://www.linkedin.com/pulse/digitalization-corporate-governance-challenges-impact-majumdar/, accessed on 29.10.2021

Neogronte N., (1995). Being digital. *New York, NY: Knopf*

Naumova, O. A., Svetkina, I. A., & Korneeva, T. A. (2019). The impact of digitalization on the economic security index of GDP. In International Scientific Conference "Digital Transformation of the Economy: Challenges, Trends, New Opportunities", *Springer*, pp. 159-164.

Nambisan S., Lyytinen K., Majchrzak A. Song M., (2017), Digital Innovation Management: Reinventing Innovation Management Research In A Digital World, *MIS Quarterly* Vol. 41 No. 1, pp. 223-238/March 2017

Nezhyva, M., , Miniailo, V. (2020). Digitalization of audit in the conditions of the COVID-19. *Visnik of Kiev National University of Trade and Economics Audit*, 3, 123-134.

Nguyen T.L.A. , Vo X. V. (2020), Does corporate governance really matter for bank efficiency? Evidence from ASEAN countries, *Eurasian Economic Review* volume 10, pages681–706 (2020).

Riadh M., Najoua E., Patricia B. & Lubica H. (2020), The digital transformation of external audit and its impact on corporate governance, *Technological Forecasting & Social Change*

Joseph V. Carcello, Dana R. Hermanson, Corporate Governance Research in Accounting and Auditing: Insights, Practice Implications, and Future Research Directions, *AUDITING: A Journal of Practice & Theory*, 30 (3): 1–31.

Suwarno M., Suwandi W., (2020), Management Incentives and Corporate Fraud: An Effectiveness Review of Corporate Governance in Indonesia, *International Journal of Scientific & Technology Research*

Wallace A.W., (2004), The economic role of the audit in free and regulated markets: a look back and forward, *Research in Accounting Regulation*, 17, 267-298.

Widani, N. A. & Bernawati, Y., (2020), Effectiveness of Corporate Governance and Audit Quality, *The Role of Ownership Concentration as Moderation*, Vol 19, Issue 1, pp. 131-140

World Bank. (2020). *World development indicators*, https://www.worldbank.org/en/home , accessed on 10.09.2021

Zerni, M. 2012. Audit partner specialization and audit fees: Some evidence from Sweden. *Contemporary Accounting Research* 29 (1): 312–340.