University of Oradea
Faculty of Economic Sciences
Doctoral School of Economics

with the support of the Research Centre for Competitiveness and Sustainable Development &
Department of Economics and Business

Oradea Journal of Business and Economics

Volume 8/2023, Issue 1

ISSN 2501-1596, ISSN-L 2501-1596

This page intentionally left blank.

Oradea Journal of Business and Economics is an open access, peer-reviewed journal, publishing researches in all fields of business and economics.
The Journal is published exclusively in English. It publishes two regular issues per year, in March and September, and occasionally one special issue, on a special theme (if case). Articles published are double-blind peer-reviewed and included into one of the following categories: theoretical and methodological studies; original research papers; case studies; research notes; book reviews.

Volume 8, Issue 1, March 2023

ISSN 2501-1596 (in printed format). ISSN-L 2501-1596 (electronic format)
Journal site: http://ojbe.steconomiceuoradea.ro/.

Acknowledgement

Oradea Journal of Business and Economics wishes to thank all individuals for their assistance with the peer reviewing of manuscripts for this issue, IT support, on-line and print publishing, as well as international databases indexing. Their help and contributions in maintaining the quality of the journal are greatly appreciated.

This page intentionally left blank.

Contents

AN EMPIRICAL ANALYSIS OF INSTITUTIONAL QUALITY AND FOREIGN DIRECT INVESTMENT INFLOWS IN NIGERIA

Idris Abiodun Adenuga*
Department of Economics, Faculty of Social Sciences, Lagos State University, Ojo, Lagos, Nigeria
iaadenuga@yahoo.com

***Abstract**: This study investigated the relationship between the measures of institutional quality provided by the World Bank, World Governance Indicators and foreign direct investment inflows in Nigeria. The study used time-series data covering the period between 1996 and 2019. We sourced the data from the World Bank, World Development Indicators and World Governance Indicators databases. The measures of institutional quality used along with other selected control variables include voice and accountability, government effectiveness, rule of law, regulatory quality, control of corruption, political stability and the composite of these six variables. In order to control for endogeneity problem, we employed generalized method of moments (GMM) estimation for this study. The empirical results from GMM show that the composite institutional index, control of corruption, voice and accountability, government effectiveness, rule of law, and regulatory quality has a positive and insignificant effect on foreign direct investment inflows into Nigeria, while political stability has a negative and insignificant effect on foreign direct investment inflows. In light of these findings, this study concluded that the amount of foreign direct investment inflows into Nigeria reflect the poor institutional quality prevalent in Nigeria. This study therefore recommended that the Nigerian government should intensify measures to improve the institutional quality of Nigeria.*

Keywords: FDI inflows, institutional quality, WGIs, GMM, Nigeria**.**

JEL Classification: E02, F00, F21

1. Introduction

Studies have shown that countries with strong institutional quality attract more foreign direct investment (FDI) than countries with weak institutional quality (Buchanan, Le & Rishi, 2012; Siddica & Angkur, 2017; Peres et al., 2018). North (1990) postulated that institutions are human-made limitations in form of political, economic and social interactions that reduce uncertainty and allow firms and individual to interact efficiently. Institutions seek to promote investment, reduce transaction and production costs. Invariably, institutions affect the profitability of investments (North, 1990). FDI is unarguably the most sought-after foreign source of capital, especially in developing countries (Jude & Levieuge, 2015). The interest in FDI is related to the fact that FDI provides necessary capital and supplies host economies with foreign technology and expertise, enabling the host economies to stimulate economic growth and development (Naudé & Krugell, 2007; Uwubanmwen & Ogiemudia, 2016).

* Cite as:
Adenuga, I. A., 2023. An Empirical Analysis of Institutional Quality and Foreign Direct Investment Inflows in Nigeria. *Oradea Journal of Business and Economics,* 8 (1), pp. 8–18, http://doi.org/10.47535/1991ojbe160

However, Multinational companies (MNCs), which drive FDI, consider various factors when deciding where to invest (Osabutey & Okoro, 2015). Availability of strong institutional framework is one of the factors MNCs consider in locating (OECD, 2002; Nsofor & Tankon, 2017; Forte & Moura, 2013).

Nigeria has a developing country requires FDI inflows as a critical factor to her economic success. The domestic investment alone is insufficient to boost economic development. Nigerian government over the years have implemented numerous FDI policies to attract FDI inflows. These policies include the Structural Adjustment programme (SAP) in 1986, the Industrial Development Co-ordinating Committee (IDCC) in 1988, the Multilateral Investment Guarantee in 1988 and the Nigerian Investment Promotion commission in 1995 among others. Instructively, before the establishment of NIPC in 1995, the policy focusing on FDI were contractionary limiting the flow of FDI in Nigeria (Ayanwale, 2007). Despite the policy on FDI, the inflow of FDI into Nigeria has been unstably low. Nigeria's net inflow of FDI from 1996-2019 was less than 1% of the GDP between 1996 and 1998 and grew above 1% between 1999 and 2004. Between 2005 and 2009, it grew above 2% reaching a peak of 2.93% in 2009 when it started the downward movement to the lowest point of 0.50% in 2018 before moving marginally upward to 0.74% in 2019 (see World Development Indicators,2020). More so, Nigeria has suffered from political instability, social unrest, insecurity, inadequate public services, weak law enforcement, and justice systems. Other are incidence of corruption in the public service, pervasive rent seeking and failure to diversify the economy, significantly depending on the oil sector. Thus, Nigeria has consistently scored poorly on all the six indices of institutional quality when benchmarked against the World Bank, World Governance Indicators between 1996 and 2019. This implies that Nigerian institutional framework is weak. The six indices of institutional quality are control of corruption (CC), government effectiveness (GE), political stability and absence of violence/terrorism (PS), regulatory quality (RQ) and rule of law (RL). The scores range between -2.5 (indicating weak institutional quality) and +2.5 (indicating good institutional quality). (See World Governance Indicators, 2020).

Given Nigeria's weak institutional framework, it is crucial to investigate the extent to which institutional quality influences FDI inflows. The relationship between institutional quality and FDI inflows has generated several empirical questions which studies have attempted to provide answers. This question centres on the desirability or otherwise of institutional quality in shaping the direction of FDI.

Nevertheless, most of the empirical studies on the relationship between FDI and institutional quality are cross-countries analysis, and the evidence is quite mixed with respect to various measures of institutional quality (Subasat, & Bellos, 2013; Bissoon, 2011; Nondo, Kahsai, & Hailu, 2016; Peres, Ameer, & Helian, 2018; Asongu, Akpan & Isihak, 2018; Bouchoucha & Benammou, 2018; Sabir, Rafique, & Abbas, 2019). Again, the institutional environment that determines the flow of FDI varies for different countries, and as such, the validity of cross-country study becomes doubtful (Deaton, 1989). This study, therefore, attempts to add to the literature by focusing on country-specific problem with Nigeria as a case study, as there are just few studies on Nigeria. The few studies; Salanko, Obilikwu & David (2020) used aggregated institutional variable from World Governance Indicators to examine the relationship between FDI and institutional quality, while Zangina & Hassan (2020) only utilised control of corruption as institutional variable in their study. The objectives of this study, therefore, is to investigate the extent to which individual institutional quality measure influences foreign direct investment inflows into the Nigerian economy for the period between 1996 and 2019, utilising institutional quality variables provided by World Governance Indicators and the generalized method of moments (GMMs) estimation.

The rest of this paper is structured as follows: section two covers the brief literature review. Section three describes the methodology. Section four presents the empirical results and discussion, while section five is the conclusion and recommendations.

2. Brief review of related literature

Empirical studies have been conducted on the relationship between institutional quality and FDI in developed countries, as well as in emerging and developing countries. Bissoon (2011) employed OLS estimates to analyse how control of corruption, political stability and regulatory quality matter for attracting FDI inflows in a sample of 45 developing nations between 1996 and 2005. The outcome of the results revealed that all the three indices of institutional quality exact a significant and positive influence in attracting FDI to all the countries in the sample. In another study Saidi et al. (2013) employed a fixed effects panel regression to investigate the impact of six institutional variables (from WGI) on FDI net inflows in 20 countries (comprising developed and developing) between the period 1998 and 2011. In the overall sample, the results revealed that only political stability and regulatory quality are significant positive in attracting FDI inflows. However, when the sample is divided into developed and developing countries, the result for developed countries showed that only political stability, regulatory quality, government effectiveness and control of corruption exact a significant and positive effect on FDI inflows. For developing countries, only regulatory quality is significantly positive in attracting inward FDI. Using OLS and GMM, Peres, Ameer & Xu (2018) investigated the effect of control of corruption and rule of law (from WGI database) on inward FDI in a sample of 110 countries (both developed and developing) between the period 2002 and 2012. The results supported a significant positive influence of institutional quality on FDI in developed economies, while in developing countries it was insignificant due to the weak institutional structure prevalent. In conclusion, the study identified institutional quality as an important variable in attracting FDI inflows. Bouchoucha & Benammou (2018) employed the fixed effect (FE), random effect (RE) and SGMM estimations to investigate the effect of the six institutional indices (from WGI) on the attractiveness of FDI to 41 African countries between 1996 and 2013. The results showed that all the six institutional measures for FE and RE are positive but insignificant. However, the results for the SGMM revealed that government effectiveness, control of corruption, regulatory quality and voice and accountability have a positive and significant impact, while rule of law and political stability are positive but not significant. Sabir, Rafique and Abbas (2019) used SGMM to study the role of aggregated and disaggregated institutional variables (from WGI dataset) in attracting FDI to high-income, upper-middle, lower-middle and low-income economies between 1996 and 2016. The study showed that control of corruption, political stability and government effectiveness significantly and positively influence FDI to LDCs. At the same time, regulatory quality and voice and accountability are insignificant in influencing FDI to LDCs. However, all the six institutional variables are significantly positive in attracting FDI to developed economies. The composite of the six institutional variables are significant positive determinant of FDI inflows in all the countries, but a more important determinant of FDI in developed countries than developing countries.

In some studies, institutional quality does not influence the inflows of FDI. For instance, Subasat & Bellos (2013) employed a panel gravity model to investigate the impact of bureaucratic quality, law and order, democratic accountability, control of corruption (sourced from ICRG) and regulatory quality (sourced from WGIs) on the Latin American region between 1985 and 2008. Their findings suggested that all institutional measures used in the study are statistically insignificant negative related to inward FDI. In conclusion, weak institutional quality does not influence the decision of MNCs to invest in Latin American region. Similarly, Nondo, Kahsai & Hailu (2016) employed the FE estimation technique to investigate the effect of disaggregated and aggregated institutional indicators (from WGI) on inward flows of FDI to 45 countries in the Sub-Saharan region between 1996 and 2007.The study found that all the institutional variables have no statistically significant effect on FDI inflows. They attributed this to the prevalence of weak institutional quality in Sub-Saharan region. In the same fashion, Asongu et al. (2018) used a panel analysis and institutional

index among other factors to search for the determinants of FDI inflows to MINT and BRICS countries between the period 2001 and 2011.The results found that Institutional index is insignificant.
To the best of our knowledge, there is scarce evidence of exclusively based studies on Nigerian. Esew & Yaroson (2014) used the Vector Error Correction Model (VECM) to study the impact of political stability and corruption index on FDI inflows to Nigeria between 1980 and 2011. The results revealed that political stability and corruption positively and significantly related to inward FDI to Nigeria. Salanko, Obilikwu & David (2020) employed NARDL to investigate the impact of an institutional index (from the six measures of institution provided by the WGIs) on FDI inflows to Nigeria, using quarterly data from 1996Q1-2019Q4. The findings of the study showed that the institutional quality index has an asymmetric and statistically significant impact on FDI inflows to Nigeria, both in the short-run and in long-run. In Another study, Zangina & Hassan (2020) employed NARDL to analyses the asymmetric relationship between corruption control and FDI inflows to Nigeria between 1984 and 2017. The findings confirmed that corruption influences foreign direct investment inflows and corruption control had asymmetric effects on foreign direct investment inflows to Nigeria. This study therefore departs from these few existing studies on Nigeria by making use of both the aggregate and disaggregate measures of institutional quality provided by WGIs. For the aggregate measure, the six indices of institutional quality are bundled by finding the simple average. The unbundling of institutional quality allows for determining how each of the six component indices influence FDI inflows to Nigeria.

3. Methodology

3.1. Model specification

The relationship between institutional quality and foreign direct investment inflows can be described under two prominent theoretical frameworks, eclectic paradigm (OLI) framework provided by Dunning (2001) and North’s institution theory. The OLI framework describes how MNEs will move to a host country when three sets of advantages, namely; Ownership (O), Location (L) and Internalisation, are met. It is instructive to know that ownership and internalisation are firm-specific advantages, most firms that desire to invest in foreign markets possess them, while location is country-specific advantages. Therefore, location advantages of different countries may make some countries to attract more FDI inflows than the others. In this sense, institutional quality can be considered as a locational factor that motivate or discourage foreign investors. Secondly, North (1990) established a link between institutional quality and investment. He argued that institutions reduce uncertainty and allow firms and individuals to interact efficiently. Institutions influence transaction and production costs, which in turn affects the profitability of investments (both local and foreign investments). Hence, incorporating institutional quality (IQ) as a critical determinant of FDI among others determinant (X), and taking note that ε is the unexplained term, the relationship may be specified as

$$FDI = f\left(IQ, X, \varepsilon\right) \tag{1}$$

Hence, we specify the model thus:

$$FDI = f\left(FDI_{(-1)}, RGDPC, EXCH, INFL, OPN, INFR, INV, HC, IQ\right) \tag{2}$$

$$IQ = f\left(CC, GE, PS, RQ, RL, VA\right)$$

In econometric form, the model can be written thus:

$$\ln FDI_t = \beta_0 + \beta_1 \ln FDI_{t(-1)} + \beta_2 \ln RGDPC_t + \beta_3 \ln EXCH_t + \beta_4 \ln INFL_t + \beta_5 \ln OPN_t + \beta_6 \ln INFR_t + \beta_7 \ln INV_t$$
$$+ \beta_8 \ln HC_t + \beta_9 \ln IQ_t + \mu_t \quad (3)$$

Where: lnFDI is the natural log of net foreign direct investment inflows as a % of GDP, $\ln\mathrm{FDI}(-1)$ is the natural log of one year lag of net foreign direct investment, lnRGDPC is the natural log real GDP per capita (LCU constant 2010), lnEXCH is the natural log of real effective exchange rate index., lnINFL is the natural log of inflation measured as consumer price index, lnOPN is the natural log of trade openness measured by the sum of exports and imports of goods and services as a % of GDP, lnINFR is the natural log of infrastructure measured by the number of telephones per 100 population , lnIVN is the natural log of domestic investment measured by gross capital formation as percentage of real GDP) and lnHC is the natural log of human capital development measured by the gross rate of secondary school enrolment ratio. IQ represents the measure of institutional quality with six component indices: control of corruption (CC), government effectiveness (GE), political stability (PS), regulatory quality (RQ), rule of law (RL), and voice and accountability (VA)). $\beta_0 - \beta_9$ are the parameters to be estimated and μ_t is the error term. The choice of natural logarithmic form of the variables in the analysis of this study is to achieve a normal distribution and for statistical convenience in interpreting the estimates as elasticities. However, it must be noted that the institutional indicators for Nigeria are negative in value and in order to take the logarithm, there is the need to normalize the data by converting the base data into new range from 0 - 100 by the following formula, with the higher index indicating higher quality of institution: New index = country indicator value – minimum indicator value divided by maximum indicator value – minimum indicator value multiplied by 100 (Giang, 2017).

3.2. Estimation Technique

This study adopted Generalized Method of Moments (GMMs) estimators proposed by Hansen (1982), which provides consistent estimators when lagged dependent variables are used. This is necessary to solve the endogeneity problem. This method involves the instrumentalisation of the explanatory variables with their appropriate lags and prevent the instruments from correlating with the error term.

4. Analysis of Data

4.1 Descriptive Analysis and Tests for Stationarity

As shown in Table1, all the series display a high level of consistency as the mean and median values are within the range of minimum and maximum values of the series. Each variable has 24 observations. Also, the standard deviation (S.D), which measures the level of variation or degrees of dispersion of each series from its mean value is shown in the table to be generally low. Again, the normally distribution assumption is valid for almost all the series in the variables at a 5 per cent level of significance. Table 2. Presents the Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests. It shows mixtures of cointegration order.

Table 1: Summary of the Descriptive Statistics

	lnCC	lnPS	lnRL	lnRQ	lnVA	lnGE
Mean	3.292	2.546	3.297	3.470	3.580	3.380
Median	3.288	2.485	3.296	3.481	3.581	3.384
Maximum	3.472	3.638	3.484	3.605	3.780	3.472
Minimum	3.063	1.792	3.063	3.135	2.944	3.250
Std. Dev.	0.091	0.411	0.121	0.117	0.168	0.059
Skewness	-0.659	0.757	-0.439	-1.559	-2.247	-0.713
Kurtosis	3.476	3.738	2.508	4.851	9.639	2.713
Jarque-Bera	1.962*	2.836*	1.011*	13.146	64.275	2.118*
Probability	0.375	0.242	0.603	0.001	0.0000	0.347
Obs.	24	24	24	24	24	24
	lnIQ	***lnOPN***	***lnINV***	***inINFR***	***lnRGDPC***	***lnHC***
Mean	3.320	3.613	3.149	-1.071	12.581	3.576
Median	3.317	3.671	3.179	-0.871	12.630	3.561
Maximum	3.400	3.976	3.704	0.169	12.862	4.029
Minimum	3.200	3.031	2.702	-2.617	12.221	3.159
Std. Dev.	0.052	0.253	0.344	0.926	0.237	0.260
Skewness	-0.250	-0.697	0.103	-0.516	-0.389	-0.216
Kurtosis	2.521	3.026	1.633	1.934	1.597	1.842
Jarque-Bera	0.479*	1.943*	1.912*	2.200*	2.576*	1.529*
Probability	0.787	0.379	0.384	0.333	0.276	0.465
Obs.	24	24	24	24	24	24
	lnFDI	***lnEXCH***	***lnINFL***			
Mean	0.296	4.665	2.440			
Median	0.457	4.608	2.471			
Maximum	1.075	5.609	3.377			
Minimum	-0.687	4.237	1.684			
Std. Dev.	0.513	0.359	0.381			
Skewness	-0.353	1.293	0.217			
Kurtosis	2.060	4.149	3.073			
Jarque-Bera	1.382*	8.007*	0.193*			
Probability	0.501	0.018	0.908			
Obs.	24	24	24			

Source: Author’s Computation.

Table 2: Unit Root Tests Results

Variable	Augmented Dickey-Fuller (ADF) Test			Phillips-Perron (PP) Test			Order of Integ-ration
	LEVEL	1ST DIFF	2nd DIFF	LEVEL	1ST DIFF	2nd DIFF	
InCC	-2.096 (0.248)	-6.259* (0.0001)	---	-2.244 (0.198)	-5.193* (0.000)	---	I(1)
InGE	-4.011* (0.006)	-----	----	-4.012* (0.006)	----	----	I(0)
InRL	-1.439 (0.546)	-3.406* (0.024)	----	-1.567 (0.483)	-4.385* (0.003)	----	I(1)
InPS	-3.304* (0.027)	----	----	-3.270* (0.029)	----	-----	I(0)
InRQ	-2.470 (0.135)	-5.442* (0.0002)	----	-2.489 (0.131)	-5.376* (0.0002)	-----	I(1)
InVA	-6.284* (0.000)	-----	----	-5.870 (0.0001)	----	-----	I(0)
InIQ	-2.860 (0.066)	-6.555* (0.000)	----	-2.921 (0.058)	-6.632* (0.0000)	-----	I(1)
InRGDPC	-1.413 (0.558)	-2.323 (0.174)	-6.042* (0.0001)	-1.236 (0.640)	-2.353 (0.166)	-6.029* (0.0001)	I(2)
InFDI	-1.935 (0.312)	-6.486* (0.0000)	-----	-1.808 (0.367)	-6.662* (0.0000)	-----	I(1)
InEXCH	-2.686 (0.092)	-4.953* (0.0007)	-----	-2.585 (0.1102)	-4.976* (0.0007)	-----	I(1)
InINFL	-4.713* (0.001)	-----	------	-4.672* (0.0012)	----	-----	I(1)
InOPN	-2.231 (0.202)	-5.213* (0.0004)	-----	-2.265 (0.1909)	-5.531* (0.0002)	-----	I(1)
InINFR	-2.644 (0.101)	-1.403 (0.561)	-9.056* (0.0000)	-0.239 (0.9200)	-2.915 (0.060)	-9.503* (0.0000)	I(2)
InINV	-1.346 (0.590)	-2.924 (0.059)	-5.609* (0.0002)	-1.346 (0.5903)	-2.919 (0.059)	-8.077* (0.0000)	I(2)
InHC	-1.549 (0.492)	-5.073* (0.001)	-----	-1.549 (0.492)	-5.073* (0.001)	-----	I(1)

Source: Author's Computation.

4.2 Empirical Results and Discussion

The empirical results of this study is presented in Table 3. The study found that institutional index (InIQ), control of corruption (InCC), voice and accountability (InVA), government effectiveness (InGE), the rule of law (InRL) and regulatory quality (InRQ) promote, to a limited extent, the inflow of foreign direct investment to Nigeria. This study also found the coefficients of these five institutional variables positively related to inflows of FDI to Nigeria over the study period. The Positive sign conforms to the apriori expectations, although the impacts of these indices are insignificant. Saidi et al. (2013) findings supported the insignificance of these institutional variables. They found that voice and accountability is insignificantly and positively correlated with FDI inflows into developing countries. Peres et al. (2018) also found that rule of law and control of corruption positively and insignificantly related to FDI inflows into developing countries. Nondo, et al. (2016) documented that all the six variables were insignificantly related to inward FDI flows into Sub-Saharan African countries. Again, Kurul & Yalta (2017) confirmed an insignificant positive relationship between the rule of law and FDI to developing countries. Bouchoucha and Benammou (2018) revealed that the government effectiveness and rule of law insignificantly and positively related to inward FDI to African countries. The insignificant effect of these institutional variables on FDI inflows to Nigeria for the study period can plausibly be explained by the weak institutional structure, given its low scores in all the six dimensions of institutional quality according to the World Bank's Worldwide Governance Indicators (2020).

Table 3: GMM Estimates on the Impact of Institutional Quality on Foreign Direct Investment in Nigeria

Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
lnFDI(-1)	-0.582* (0.004)	-0.546* (0.010)	-0.588* (0.010)	-0.591* (0.013)	-0.571* (0.008)	-0.612* (0.007)	-0.523* (0.007)
lnRGDPC	-1.249 (0.066)	-1.723 (0.1096)	-1.361 (0.154)	-1.354 (0.184)	-1.065 (0.151)	-1.522 (0.096)	-0.976 (0.150)
lnEXCH	-0.809* (0.001)	-0.850* (0.003)	-0.633* (0.029)	-0.655* (0.032)	-0.712* (0.001)	-0.769* (0.002)	-0.725* (0.001)
lnINFL	0.142 (0.183)	0.127 (0.272)	0.224 (0.338)	0.118 (0.397)	0.131 (0.327)	0.194 (0.201)	0.193 (0.194)
lnOPN	0.035 (0.880)	0.054 (0.827)	0.149 (0.555)	0.083 (0.716)	0.119 (0.558)	0.068 (0.769)	0.095 (0.654)
lnINFR	0.721* (0.0001)	0.666* (0.0001)	0.676* (0.0002)	0.729* (0.006)	0.679* (0.000)	0.733* (0.0002)	0.658* (0.000)
lnINV	-1.599* (0.006)	-1.600* (0.009)	-1.859* (0.003)	-1.764* (0.003)	-1.744* (0.003)	-1.692* (0.004)	-1.618* (0.007)
lnHC	0.372 (0.590)	0.654 (0.500)	-0.147 (0.782)	0.192 (0.838)	-0.052 (0.906)	0.421 (0.591)	-0.109 (0.435)
	0.872 (0.424)	----	----	-----	-----	-----	-----
lnCC	-----	0.559 (0.385)	---	----	----	-----	-----
lnPS	-----	----	-0.130	----	----	-----	-----
lnVA	-----	----	-----	0.364 (0.791)	-----	-----	-----
lnGE	-----	-----	-----		0.153 (0.892)	-----	-----
lnRL	----	----	-----	-----	-----	0.413 (0.428)	-----
lnRQ	-----	----	-----	-----	-----	-----	0.263 (0.435)
C	21.04* (0.035)	27.14* (0.027)	26.89* (0.051)	24.30* (0.015)	22.31 (0.089)	25.73* (0.022)	20.57 (0.058)
R-squared	0.833	0.818	0.824	0.826	0.831	0.829	0.855
Adj. R-squared	0.709	0.682	0.691	0.695	0.704	0.700	0.746
DW Stat.	2.611	2.441	2.374	2.494	2.495	2.280	2.594
Instr. rank	15	15	15	15	15	15	15
J-stat.	1.382	1.250	2.221	2.370	2.421	1.512	1.862
Prob (J-stat.)	0.926	0.940	0.818	0.796	0.788	0.912	0.868
*NB: *represents significance at 5 per cent. Probability of t-statistic is in the parenthesis*							

Source: Author's Computation.

The results also suggest that political stability (InPS) hinders the inflows of foreign direct investment into Nigeria for the period of study. The coefficient of this dimension of institutional quality is negatively and insignificantly related to FDI inflows to Nigeria for the period of study. This is contrary to the apriori expectation. The result does not conform to most of the findings in the literature. However, few studies found similar results Jadhav & Katti (2012); Berden et al. (2014); Lucker & Eichler (2016) found negative political stability with FDI. Nevertheless, one cannot conclude that this result is strong enough to disregard the importance of political stability in foreign firms' decisions to invest in Nigeria. More so, some of these large multinational corporations are often involved in rent-seeking activities (Subasat & Bellos, 2013).
Regarding the behaviour of Control Variables to FDI, Infrastructure, human capital, inflation and international trade promote the inflow of foreign direct investment (FDI). At the same time, high exchange rate, increase real GDP per capita, and increased domestic investment discourage the inflow of FDI to Nigeria.

5. Conclusions

This study investigated the relationship between measures of institutional quality and FDI inflows in Nigeria spanning the period between 1996 and 2019. We employed the GMM estimation technique to control endogeneity and make analysis robust. We found that the composite institutional index, control of corruption, voice and accountability, government effectiveness, rule of law and regulatory quality are positively but insignificantly related to FDI inflows in Nigeria for the study period. At the same time, political stability is negative and insignificant at 5%. The results also showed that infrastructure, human capital, inflation and trade openness have positive impact on FDI inflows. In contrast, exchange rate, domestic investment, real GDP per capita and FDI (-1) negatively impact FDI inflows. These insignificant institutional variables could be attributed to Nigeria's weak institutional framework (Nondo, et al., 2016).
This study therefore recommended that Nigeria government should intensify policies that would improve the institutional structure in the country in order to attract desirable FDI to the countries. The anti-corruption agencies should be strengthened, not only to fight corruption but also to tackle corruption at all levels of government. More importantly, the anti-corruption agencies should be independent and be helmed by men of integrity who are committed to the fight against corruption. Furthermore, sanctity of the rule of law should be sacrosanct, the independent of the judiciary guaranteed, the reform of the police, enforcement of property rights and tackling of insecurity to life and property. In addition, there should be improved government effectiveness in terms of the quality of public service delivery, absence of undue pressure of public officeholders on public servant, openness and transparency in providing sound policies and effective implementation. The democratic system should be strengthened to allow citizens to participate in the choice of their leaders, freedom of speech and association as well as independent of mass media should be guaranteed. This would attract the much-needed FDI to the country, and assist in delivering the benefits of FDI into Nigeria.

5.1. Limitations and Further Studies

This present study focuses on the relationship between institutional quality and aggregate FDI inflows to Nigeria. According to Busse (2004), the influence of institutional factors may differ across FDI sectors. Therefore, further study should investigate the effect of institutional quality on sector-specific FDI, namely, agriculture, manufacture and service.

References

Asongu, S., Akpan, U. S., Isihak, S. R., 2018. Determinants of Foreign Direct Investment in Fast-Growing Economies: Evidence From the BRICS and MINT Countries. *Financial Innovation,* 4(1): 1-17. https://doi.org/10.1186/s40854-018-0114-0

Berden, K., Bergstrand, J. H., Ettan, E. V., 2014. Governance and Globalisation. *World Economy,* 37(3): 353-86. https://doi.org/10.1111/twec.12135

Bissoon, O., 2012. Can Better Institutions Attract More Foreign Direct Investment? Evidence From Developing Countries. *International Research Journal of Finance and Economics,* 82**,** pp. 142-158.

Bouchoucha, N. Benammou, S., 2020. Does Institutional Quality Matter For Foreign Direct Investment? Evidence From African Countries. *Journal Knowledge of Economics*, 11, pp. 390-404. https://doi.org/10.1007/s13132-018-0552-y.

Buchanan, B. G., Le, Q. V., Rishi, M., 2012. Foreign Direct Investment and Institutional Quality: Some Empirical Evidence. *International Review of Financial Analysis,* 21**,** pp**.** 81-89. https://doi.org/10.1016/j.irfa.2011.10.001

Busse, M., 2004. Transnational Corporations and Repression of Political Rights and Civil Liberties: An Empirical Analysis. *Kyklos,* 57, pp. 45-65. https://doi.org/10.1111/j.0023-5962.2004.00242.x

Dunning, J., 2001. The Eclectic (OLI) Paradigm Of International Production: Past, Present and Future. *International Journal of the Economics of Business,* 8(2): 173-90. https://doi.org/10.1080/13571510110051441

Dunning, J. H., 1981. *International Production and the Multinational Enterprise,* London: Allen&Unwin, Ltd.

Esew, N., Yaroson, E., 2014. Institutional Quality and Foreign Direct Investment (FDI) in Nigeria: A Prognosis. *IOSR Journal of Humanities and Social Science (IOSR-JHSS),* 19(6): 37-45. https://doi.org/10.9790/0837-19653745

Forte, R., Moura, R., 2013. The Effects of Foreign Direct Investment on the Host Country's Economic Growth: Theory and Empirical Evidence. *Singapore Economic Review,* 58(3): 1-28. https://doi.org/10.1142/S0217590813500173

Giang, N. H., 2017. Institutional Determinants Of FDI in Vietnam. Master in International Economics & Business, Nijmegen School of Management, Radboud University, Nijmegen, Netherlands.

Jadhav, P., Katti, V., 2012. Institutional and Political Determinants of Foreign Direct Investment: Evidence From BRICS Economies. *Poverty&Public Policy,* 4(3): 49-57. https://doi.org/10.1002/pop4.5

Jude, C., Levieuge, G., 2015. Growth Effect of FDI in Developing Economies: The Role of Institutional Quality. *Banque de France Working Paper,* 559*,* available at*:* https://publications.banque-france.fr/publications-economiques-et-financieres-documents-de-travail/les-effets-des-ide-sur-la-croissance-des-pays-en-developpement-le-role-de-la-qualite [accessed 12.06.2018].

Kurul, Z., Yalta, A., 2017. Relationship between Institutional Factors and FDI Flows in Developing Countries: New Evidence from Dynamic Panel Estimation. *Economies,* 5(2): 1-10. http://dx.doi.org/10.3390/economies5020017

Lucke, N., Eichler, S., 2015. Foreign Direct Investment: the Role of Institutional and Cultural Determinants. *Applied Economics,* 48(11): 935-56. https://doi.org/10.1080/00036846.2015.1090551

Naudé, W. A., Krugell, W.F., 2007. Investigating Geography and Institutions as Determinants of Foreign Direct Investment in Africa Using Panel Data. *Applied Economics,* 39(10): 1223-33. https://doi.org/10.1080/00036840600567686

Nondo, C., Kahsai, M., Hailu, Y., 2016. Does Institutional Quality Matter in Foreign Direct Investment? Evidence From Sub-Saharan African Countries. *African J. of Economic and Sustainable Development,* 5(1): 12-30. https://doi.org/10.1504/AJESD.2016.074441

North, D. C., 1990. *Institutions, Institutional Change and Economic Performance*, Cambridge: Cambridge University Press.
Nsofor, E. S., Tankon, S.M., 2017. Impact of Foreign Direct Investment on Economic Growth: Empirical Evidence From Nigeria, 1985-2016. *European Journal of Economic and Financial Research,* 2(6): 11-23. https://doi.org/10.5281/zenodo.1160689
OECD. (2002). *Foreign Direct Investment for Development: Maximizing Benefits, Minimizing Costs* [online], available at: https://www.oecd.org/investment/investmentfordevelopment/foreigndirectinvestmentfordevelopmentmaximisingbenefitsminimisingcosts.htm.
Osabutey, L. C., Okoro, C., 2015. Political Risk and Foreign Direct Investment in Africa: The Case of the Nigerian Telecommunications Industry. *Thunderbird International Business Review,* 57(6): 417-29. https://doi.org/10.1002/tie.21672
Peres, M., Ameer, W., Helian, X., 2018. The Impact of Institutional Quality on Foreign Direct Investment Inflows: Evidence for Developed and Developing Countries. *Economic Research* 31(1): 626- 44. https://doi.org/10.1080/1331677X.2018.1438906
Sabir, S., Rafique, A., Abbas, K., 2019. Institutions and FDI: Evidence From Developed and Developing Countries. *Financial Innovation,* 5(1): 1-20. https://doi.org/10.1186/s40854-019-0123-7
Sakanko, M. A., Obilikwu, J., David, J., 2020. The Effect of Aggregate Institutional Quality On Foreign Direct Investment in Nigeria: Evidence From NARDL. *Economics&Law,* 2(2): 1-13. https://doi:10.37708/el.swu.v2i2.1
Siddica, A., Angkur, M.T., 2017. Does Institutions Affect the Flow of Foreign Direct Investment? A Panel Data Analysis of Developed and Developing Countries. *International Journal of Economics and Finance,* 9(7): 214-21. https://doi.org/10.5539/ijef.v9n7p214.
Subasat, T., Bellos, S., 2013. Governance and Foreign Direct Investment in Latin America: A panel Gravity Model Approach. *Latin American Journal of Economics,* 1, pp. 107-131. https://doi.org/10.7764/laje.50.1.107
Zangina, S., Hassan, S., 2020. Corruption and FDI Inflow to Nigeria. A nonlinear ARDL approach. *Journal of Financial Crime,* 27(2): 635-50. https://doi.org/10.1108/JFC-09-2019-0116

Bio-note:
Idris Abiodun Adenuga is a lecturer in the department of Economics, Lagos State University. He obtained his Ph.D. degree in Economics at Lagos State University in 2021. Idris Abiodun Adenuga has good record of teaching, research and administrative experiences. He has served in many committees at the departmental and faculty levels. His research papers have been published in different Journals both locally and internationally. His areas of interest is in Development Economics and Economic theory. He is a member of Nigerian Economic Society (NES).

THE COVID-19 PANDEMIC. CONTROVERSIES AND MEASURES PROPOSED TO REDUCE THE IMPACT OF FUTURE PANDEMICS

Afrodita Borma*
[1]*Department of Economics and Business, Faculty of Economic Sciences, University of Oradea, Oradea, Romania*
aborma@uoradea.ro

Abstract: *The Covid-19 pandemic has strongly affected the entire planet. Although artificial intelligence is more and more present in our daily activities, leaving its mark in most fields of activity (education, science, medicine), the coronavirus has managed, to some extent, to slow down or even block the natural evolution of things, forcing a change of the lifestyle and the reality in which we live. Forced isolation, imposed restrictions, activities conducted online, etc. had a negative effect especially on people who were coerced to adapt to a new situation and comply with the rules imposed in order to reduce/eliminate the devastating effect of the Covid-19 virus. The paper presents a brief summary of the evolution of influenza epidemics, especially of the coronavirus, as well as the names associated with human coronaviruses that have occurred in the last 20 years. Furthermore, the paper captures a series of controversies that arose in relation to the measures taken during the Covid-19 pandemic, but also the steps necessary to combat the impact of future pandemics as efficiently as possible. The research method used focuses on documentation using, in particular, specialized literature (articles, case studies, books, etc.) from various fields but also information provided by the World Health Organization.*

Keywords: influenza epidemics, human coronaviruses, the Covid-19 pandemic, modern technologies

JEL classification: I10

1. Introduction

The cumulative impact of the pandemic on the political, economic and social life is significant. Two years ago, the whole planet was in a state of relative disarray: among nations and among aspirations, a situation that still dominates today due to the war between Russia and Ukraine. The isolations and quarantines caused by the pandemic, by reducing daily and industrial activities, had a beneficial effect on the environment and climate, by reducing pollution. But, the pandemic has also provided new opportunities for illegal activities with negative social effects, such as the deforestation of the Amazon rainforest (Roberton and Bodo, 2020) and poaching in Africa (Deliso, 2020). The coronavirus pandemic is considered by Nancy to be a product of globalization (Nancy, 2021 cited by Sfetcu, 2020:46), an idea also supported by Wallace, who believes that the dynamics and pressures of the global economy constituted the main causes of the expansion of the pandemic (Wallace, 2013). Duflo, believes that one of the challenges of the Covid 19 pandemic consists in the effort made to maintain jobs and salaries, fearing that large

* Cite as:

Borma, A., 2023. The Covid-19 Pandemic. Controversies and Measures Proposed to Reduce the Impact of Future Pandemics. *Oradea Journal of Business and Economics*, 8 (1), pp. 19–25, http://doi.org/10.47535/1991ojbe161

companies will opt for automation (Mars 2020 cited by Sfetcu, 2020:46). The traditional world before the technological age, was fragmented and evolved slowly, almost imperceptibly. Currently, we live in a highly integrated world, which moves at an unimaginable speed. Many authors highlight an endless array of technological advancements while drawing attention to the dangers generated by the abuse of technology. Modern technologies enable already almost total surveillance, motivated by the pandemic. A series of digital applications, which, prior to the Covid-19 pandemic, were considered enemies of the human species, have become the most important work tools during the pandemic: "*the famous GAFA group (Google, Apple, Facebook and Amazon) which, from a plagued cast-off, as it was considered prior to the pandemic, became overnight a blessed supporter of the possibility of working from home, of distance schooling, of online advice"* (Levy, 2020:79-80). The Covid 19 pandemic has demonstrated to the world that although we are in the age of digitization, humanity moves slowly when new challenges arise that require a response against time (Nicola, 2020:435).

2. Research Methodology

This paper aims to present the research progress on the term covid 19 pandemic by conducting a methodological review based on various empirical and review articles, books and books chapters, case studies, conference papers, conceptual papers, presenting the controversies related to social distancing and highlighting the proposed measures to reduce the impact of future pandemics.

3. Literature review

Influenza epidemics were extremely virulent in the 18th to 20th centuries. In the years 1918-1919, the Spanish flu emerged, which manifested all over the globe, registering between 50-100 million victims, i.e., around 2.5-5% of the world's population (Spinney, 2017:20). Although the 1918 pandemic did not occur in Spain, it came to be called *the Spanish flu* (ispanka, espanhola, la grippe espagnole, die Spanische Grippe) thus marking a historical error that has not been corrected since (Spinney, 2017:85). This was, probably, the largest demographic disaster of the 20th century, possibly even of all centuries (Spinney, 2017:206).
Influenza epidemics, with their multiple varieties, continue even today, the respective virus proving capable of permanent transformations and adaptations, its variable nature hindering its combating and immunization (Boia, 2020:33). The first report on bird flu was published in 1931 by Schalk and Hawn, and the viral aetiology of the disease was suggested in 1933 and definitively established in 1936 (Estola, 1970:331-332). In the 1940s, two other animal coronaviruses were isolated (McIntosh, 1974 cited by Sfetcu, N. 2020:60) and in 1964 the first human coronaviruses were also identified. The report conducted by Hartley is considered the first study that indicates the occurrence of human infections caused by coronaviruses (Estola, 1970:333). In 1965, the name HCoV was established, for the human coronavirus identified from the nasal discharge of a patient with a common cold. In 2002-2003, the severe acute respiratory syndrome coronavirus, called SARS-CoV, emerged as a serious epidemic, involving 29 countries in North America, South America, Europe and Asia (Kahn, and McIntosh, 2005:223 -224). In the post-SARS era, two other human coronaviruses (HCoVs) emerged: HCoV - NL63 (NetherLand 63) in 2004 and HCOV - HKU1 (University of Hong Kong 1) in 2005. Since then, two more zoonotic HCOVs have emerged: the Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012 and the new SARS-CoV-2 coronavirus in December 2019 (Liu et al., 2021:429). The last human coronavirus, that of December 2019, was reported in Wuhan, China, initially named 2019-nCoV by the World Health Organization (WHO, 2020a) and later renamed

SARS-CoV-2 by the International Committee on Taxonomy of Viruses. The World Health Organization declared the Covid-19 outbreak as an urgent public health concern on January 30, 2020 and as a pandemic on March 11, 2020 (WHO, 2020b).

4. Controversies regarding the measures taken during the Covid-19 pandemic

One of the most contested measures adopted globally during the COVID-19 pandemic was social distancing (later called physical distancing, to avoid the development of negative social associations). Social distancing methods have included quarantines, travel restrictions, closing schools, workplaces, stadiums, theatres or shopping centres (WHO, 2022c).

Agamben approaches the topic of social distancing as a new way of society organisation, based on falseness and contradictions. He believes that it is not normal to give up good to save the good, nor to forego freedom to protect freedom (Levy, 2020:83). Humans are social beings, that is, they need their peers to evolve and to preserve their physical and mental health. Biologically speaking, humans can only live through the cooperation between the social and economic aspects, being forced to adhere to this process in order to be able to survive.

The expression: *"Umuntu ngumuntu ngabantu"*, actually means: “I am because we all are” (Stoica, 2015). *Ubuntu* is an African ethic or philosophy of life, from Sub-Saharan Africa, that focuses on loyalty and human relationships. This desire for belonging, for love and for safety has been and is highlighted in many specialised works, through the important role played by the relationships that are created among people (Sfetcu, 2020:84). Moreover, Maslow (1943) stated that: *“people have a deep need for love and social belonging, and only then for safety and physiological needs*, (Sfetcu, 2020:85).

Žižek shows us how the media has ruthlessly exploited the topic of the pandemic, creating panic and chaos worldwide. The author believes that catastrophic situations push people towards reevaluating everything that surrounds them (everyday life, time and priorities): *“we needed havoc to be able to meditate again on the society we live in”*, (Sfetcu, 2020:76-77). Also, in 2020, Latour claims that the pandemic was the most astounding lesson delivered to humanity: “*we have actually proved that it is possible to stop, in a few weeks, all economic systems in the world* “, (Latour, 2020:1).

Bhusal (2020) states that the Covid-19 pandemic is about to change the whole society, that is everything that was considered to be the normality, prior to the pandemic, will be overshadowed by a “new normality”: where teaching and learning, shopping, work or medicine will take place remotely.

Kojeve compares the panic set in during the pandemic with the “animalization of people”, that is the manipulation/training of the mass through the requirement of isolation and the prohibition of movement over long distances, a situation that has induced a state of fear and anxiety among people, who somehow resigned themselves to the rules imposed on them: *“this sizzling solidarity with which they fooled us all, this insurrection of fraternity against a background of robinsonade and of limiting consumption…were just hoaxes”.* Kojeve is also of the opinion that, during the two years of the pandemic, it was as if all the problems (global warming, massive deforestation, wars, etc.), which had been overwhelming the world for years, suddenly disappeared, people’s only concern being exclusively related to the Covid-19 virus. As Levy (2020) mentioned, the current problems of humanity as massive migration, global warming and deforestation seemed to have disappeared and no one remembered them, no one was worried about them.

5. Limiting and mitigating future pandemic effects

The basic steps in controlling a pandemic are limiting the spread of the virus (through monitoring, containment and therapy, including vaccination) and mitigating it by various means, but these steps can also be addressed simultaneously (Threats, 2007 and Baird, 2020). Reducing the epidemic peak lowers the risk of overcrowding health services and provides time for the development of vaccines and treatments. In addition to the production of vaccines and medicines, both non-pharmaceutical measures are promoted: hand hygiene, mask wearing, self-quarantine (Stanislaw et al., 2020 cited by Sfetcu, 2020:36), as well as social distancing (Qualls et al., 2017 cited by Sfetcu 2020:36).
Albert D.M.E. Osterhaus and collaborators also present a number of measures that should be adopted during the "peace period" between pandemics, namely: supervision and diagnosis of new pathogens, development of tests for diagnosis and mechanisms for their distribution, research on how new infections cause diseases, medicine and vaccine development, communication between scientists, governments and the public. (Mackenzie, 2020:212). Mackenzie, shows us 7 important lessons to follow in order to reduce the impact of pandemics to come (Mackenzie, 2020:276-288).

Table 1: 7 important lessons to follow in order to reduce the impact of pandemics to come

LESSON 1	We need an authoritative, high-level system, which brings together countries and international agencies, in order to work together in cases of infectious diseases, so that no one hides important details regarding worrying epidemics and which should all work together from the start.
LESSON 2	Now is the time to improve monitoring and response systems, first of all by enhancing the surveillance activity for emerging infectious diseases, and second by investing in medicines, vaccines and diagnostic tests for the threats we already know exist.
LESSON 3	We need personal protective equipment (for those working in the field of health care) and the development of new remedies (antibiotics, vaccines, ventilators, etc.) as respiratory viruses will always be among our biggest threats.
LESSON 4	When scientists start to vocally argue that there is a real threat, we need to listen and determine officials to act.
LESSON 5	If new influenza pandemics occur, we must react and limit them quickly, as soon as they occur.
LESSON 6	We need to determine governments to be accountable for the promises they make and make sure that they do whatever it takes.
LESSON 7	We must understand that a much more serious pandemic could occur, and it would trigger non-linear effects in our global system, which would lead to the collapse of local or global systems.

Source: adapted by the author based on Mackenzie (2020, pp.276-288)

6. In conclusion

For national and international organisation responsible for public health, and for politic and economic decision-makers, the COVID-19 crisis represented a challenge, but also an opportunity to identify ways to mobilize resources and stimulate domestic and international cooperation. As the authorities tried to find solutions to protect the population, to identify and control outbreaks, the territory of uncertainty expanded), lack of knowledge and resources went hand in hand with misinformation and panic, politicization and rejection of science (Tandoc & Lee, 2020; Kaim et al, 2021). Public health gradually became a priority area of political and community decisions, with a massive impact on social life and individual habits, with a possible long-term impact (Mofijur et al., 2021, Oldekop et al., 2020; Shadmi et al, 2020). Many researchers have pointed out that the reality of COVID-19 has highlighted social inequities, the vulnerability of certain segments of the population, the inefficiency of international cooperation and even the selfishness of human nature. The global economic recession, accentuated budget deficits, depletion of resources, economic volatility, major shocks on the stock market, the increase in the global level of poverty and unemployment, the difficulties of global supply chains are major effects of the economy in recent years (Kaim, 2021), which have their main source in the COVID- 19 crisis.
Although we have a lot of information and effective methods to process it, it is difficult to accurately predict what will happen in the immediate future. Unfortunately, currently, social networks, a world with no time and space barriers, have become the main sources of communication. The Internet and the media hold and present a large volume of information to the general public, on a daily basis. The trend of fake news has gained momentum, becoming, in most situations, impossible to counter since a multitude of people tend to believe it. Lies and manipulation have always existed, but nowadays they are so present in everyday life that it is very difficult to see the true face of things and people. Furthermore, the variety of software available on the Internet allows falsifying and reproducing, with extreme ease and in the most credible light, all the information and images presented. The same thing happened during the Covid-19 pandemic (alarming news about the number of dead, statistical data presented daily about the number of new infections, mandatory vaccination, etc.) when the global population seemed to be divided into two camps: on the one hand, people who resigned themselves to accepting all of the imposed restrictions and, on the other hand, people who revolted trying to prove that everything that was happening was just a plan for manipulating the world's population. Now, no one can accurately say whether the methods applied during the Covid-19 pandemic were the most appropriate, or what would it have been like if... But, after the two years of the pandemic, people realized that they live in a world full of uncertainties, that their freedoms are very fragile, that rights can have a provisional meaning and that the life we live can change in any moment.

References

Baird, R. P., 2020. *What It Means to Contain and Mitigate the Coronavirus.* [online] Available at: https://www.newyorker.com/news/news-desk/what-it-means-to-containand-mitigate-the-coronavirus [accessed 13.10.2022].
Boia, L., 2019. *Întrebări Fără Răspunsuri (Sau cu Prea Multe Răspunsuri) (Questions Without Answers (or With Too Many Answers))*, Bucharest: Humanitas.
Bhusal, M. Kr., 2020. The World After COVID-19: An Opportunity For a New Beginning. *International Journal of Scientific and Research Publications (IJSRP)* [online], 10(5), pp. 735-741. http://dx.doi.org/10.29322/IJSRP.10.05.2020.p10185
Deliso, M., 2020. *Conservationists Fear African Animal Poaching Will Increase During COVID-19 Pandemic*. [online] Available at:

https://abcnews.go.com/International/conservationists-fear-african-animal-poaching-increase-covid-19/story?id=70118142 [accessed 10.10.2022].

Estola, T., 1970. Coronaviruses, a New Group of Animal RNA Viruses. *Avian Diseases*, 14(2): 330–36. https://doi.org/10.2307/1588476.

Kahn, J.S., McIntosh, K., 2005. History and Recent Advances in Coronavirus Discovery. *The Pediatric Infectious Disease Journal,* 24(11): 223-27. https://doi.org/10.1097/01.inf.0000188166.17324.60

Kaim, A., Gering, T., Moshaiov, A., Adini, B. 2021. Deciphering the COVID-19 Health Economic Dilemma (HED): A Scoping Review. *International Journal of Environmental Research and Public Health*, 18(18): 9555. https://doi.org/10.3390/ijerph18189555

Latour, B., 2020. *Imaginer Les Gestes-Barrières Contre le Retour à la Production D'avant-Crise*, Soumis a AOC-média. [online] Available at: http://www.bruno-latour.fr/sites/default/files/P-202-AOC-03-20.pdf [accessed 10.10.2022].

Levy, B.H., 2020. *Acest Virus Care Ne Smintește (The Virus in the Age of Madness)*, Bucharest: ACT and Politon.

Liu, D.X., Liang, J.Q., Fung, T.S., 2021. Human Coronavirus-229E, -OC43, -NL63, and -HKU1 (Coronaviridae). In D. Bamford, M. Zuckerman Eds. *Encyclopedia of Virology,* 4th Ed., Cambridge: Academic Press, pp. 428-440. https://doi.org/10.1016/B978-0-12-809633-8.21501-X

Mackenzie, D., 2020. *Covid 19: The Pandemic That Never Should Have Happened and How to Stop the Next One*, Bucharest: RAO.

Maslow, A. H., 1943. A Theory of hHman Motivation, *Psychological Review* [online], 50(4), pp. 370-396, Available at: https://doi.org/10.1037/h0054346 [accessed 13 October 2022].

Mars, A., 2020. *Esther Duflo: "Las Máquinas No Enferman. Temo Que Esta Crisis lleve a Una Mayor Automatización"*. [online] Available at https://elpais.com/ideas/2020-05-23/esther-duflo-las-maquinas-no-enferman-temo-que-esta-crisis-lleve-a-una-mayorautomatizacion.html [accessed 13.10.2022].

McIntosh, K., 1974. Coronaviruses: A Comparative Review. In W. Arber, R. Haas, W. Henle, P. H. Hofschneider, N. K. Jerne, P. Koldovský, H. Koprowski, O. Maaløe, R. Rott, H. G. Schweiger, M. Sela, L. Syruček, P. K. Vogt, E. Wecker Eds. *Current Topics in Microbiology and Immunology,* Berlin: Springer Berlin, Heidelberg, 63, pp. 85-129. https://doi.org/10.1007/978-3-642-65775-7_3

Mofijur, M., Fattah, I.R., Alam, A., Islam, A.S., Ong, H.C., Rahman, S.A., Najafi, G., Ahmed, S., Uddin, A., Mahlia, T., 2021. Impact of COVID-19 on the Social, Economic, Environmental and Energy Domains: Lessons Learnt From a Global Pandemic. *Sustainable Production and Consumption*, 26, pp. 343–359. https://doi.org/10.1016/j.spc.2020.10.016

Nancy, J.L., 2021. A Much Too Human Virus. In F. Castrillón, T. Marchevsky Eds. *Coronavirus, Psychoanalysis, and Philosophy, Conversations on Pandemics, Politics, and Society*, 1st Edition, London: Routledge, pp. 114-117. https://doi.org/10.4324/9781003150497

Nicola, M., 2020. Înainte Va Fi Bine. In O. Todorean, S. Celac, G. Scutaru Eds. *Lumea de Mâine. Ce Urmează După Pandemie,* Bucharest: Curtea Veche Publishing, pp 432-444.

Oldekop, J.A., Horner, R., Hulme, D., Adhikari, R., Agarwal, B., Alford, M., Bakewell, O., Banks, N., Barrientos, S., Bastia, T., et al., 2020. COVID-19 and the Case for Global Development. *World Development*, 134, pp. 1-4. https://doi.org/10.1016/j.worlddev.2020.105044

Qualls, N., et al., 2017, Community Mitigation Guidelines to Prevent Pandemic Influenza - United States, 2017, *Recommendations and Reports* [online], 66(1), pp. 1-34, Available at: https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm [accessed 13 November 2022]. https://doi.org/10.15585/mmwr.rr6601a1

Roberton, J. and Bodo, L., 2020. *Deforestation of the Amazon Has Soared Under Cover of the Coronavirus*. [online] Available at:

https://www.nbcnews.com/science/environment/deforestation-amazon-has-soared-under-cover-coronavirus-n1204451 [accessed 18.10.2022].

Shadmi, E., Chen, Y., Dourado, I., Faran-Perach, I., Furler, J., Hangoma, P., Hanvoravongchai, P., Obando, C., Petrosyan, V., Rao, K.D., et al., 2020. Health equity and COVID-19: Global perspectives. *International Journal for Equity in Health*, 19, pp. 1-16. https://doi.org/10.1186/s12939-020-01218-z

Sfetcu, N., 2020. *Pandemia Covid 19 Abordări Filosofice*, (*Covid-19 Pandemic – Philosophical Approaches*), Bucharest: MultiMedia Publishing, https://doi.org/10.13140/RG.2.2.27611

Spinney, L., 2017. *Gripa Spaniolă din 1918 (The Spanish Flu of 1918),* Bucharest: Corint Books.

Stanislaw P. S., et al. 2020, The 2019–2020 Novel Coronavirus (Severe Acute Respiratory Syndrome Coronavirus 2) Pandemic: A Joint American College of Academic International Medicine-World Academic Council of Emergency Medicine Multidisciplinary COVID-19 Working Group Consensus Paper. *Journal of Global Infectious Diseases* [online], 12(2), pp. 47-93, Available at: https://journals.lww.com/jgid/Fulltext/2020/12020/The_2019_2020_Novel_Coronavirus__Severe_Acute.3.aspx [accessed 18 September 2022]. https://doi.org/10.4103/jgid.jgid_86_20

Stoica, M., 2015. *Ubuntu În Cultura Xhosa Înseamnă: "Eu Sunt Pentru Că Noi Toţi Suntem"*. [online] Available at: https://epochtimes-romania.com/news/ubuntu-in-cultura-xhosa-inseamna-eu-sunt-pentru-ca-noi-toti-suntem-video---240631 [accessed 25.10.2022].

Tandoc, E.C., Jr., Lee, J.C., 2020. When Viruses and Misinformation Spread: How Young Singaporeans Navigated Uncertainty in the Early Stages of the COVID-19 Outbreak. *New Media Society*, 24(3): 778-96. https://doi.org/10.1177/1461444820968212

Institute of Medicine, 2007. *Ethical and Legal Considerations in Mitigating Pandemic Disease: Workshop Summary [online],* available at: https://www.ncbi.nlm.nih.gov/books/NBK54163/ [accessed 25.10.2022], Washington DC: National Academies Press. https://doi.org/10.17226/11917

Wallace, R., 2013. *The Virus and the Virus*. [online] Available at: https://www.counterpunch.org/2013/06/14/the-virus-and-the-virus/ [accessed 25.10.2022].

World Health Organization (WHO), 2020a. *Laboratory Testing of Human Suspected Cases of Novel Coronavirus (nCoV) Infection* [online], available at: https://apps.who.int/iris/bitstream/handle/10665/330374/WHO-2019-nCoVlaboratory-2020.1-eng.pdf [accessed 25.10.2022].

World Health Organization (WHO), 2020b. *Coronavirus Disease (Covid-19) Pandemic* [online], available at: https://www.who.int/europe/emergencies/situations/covid-19 [accessed 25.10.2022].

World Health Organization (WHO), 2022c. *Advice for the Public. Coronavirus Disease (COVID-19)* [online], available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/coronavirus-disease-COVID-19 [accessed 25.10.2022].

Žižek, S. 2020. *Pandemic! COVID-19 Shakes the World*. Cambridge: Polity Publishers. https://doi.org/10.2307/j.ctv16t6n4q

Bio-note:

Afrodita BORMA – Graduate of the Faculty of Economic Sciences Oradea 2000, with a Master's degree in tourism (2007), PhD in Economics (2013) and Postdoctoral studies in Business Administration (2015), currently working as Lecturer at the University of Oradea, Faculty of Economic Sciences, Department of Economics and Business. The main research areas are: tourism, regional development and economy.

STUDENTS' COPYING STRATEGIES WITH COVID-19 PANDEMIC IN TANZANIA: A CROSS SECTIONAL STUDY OF UNIVERSITIES IN MOROGORO MUNICIPALITY

Venance Shillingi*, Eliza Mwakasangula
Mzumbe University, Morogoro, Tanzania
vshillingi@mzumbe.ac.tz
efaty@mzumbe.ac.tz

Abstract: *Globally, COVID 19 caused closure of all educational institutions to control the spread of this pandemic. The spread of the disease has caused various emotional and mental distortions of university students. Thus, this study aims to establish students' coping strategies used to cope with COVID-19 pandemic. The cross-sectional study was conducted among four (4) universities where 389 valid respondents out of 400 sampled students out of 3200 final year students in the faculty of social science and humanities through stratified random sampling technique within Morogoro Municipality in Tanzania. The study used structured questionnaires and interview guide to obtain data. The study used multiple linear regressions and content analysis to analyse the collected data. The findings of the study indicated that seeking for social support and social distancing were significantly and positively related to students coping strategies with COVID-19 in Tanzania's universities. Also, students copying strategies contributed about 79.1% of all initiatives of copying with COVID 19, while 20.1% is contributed by other copying strategies which were not part of this study. The study concluded that, COVID 19 pandemic has an adversative effect on the health of university students and their studying environments. In this vein, the study recommends that, students should be encouraged to maintain social distancing among each other, wash hands with running water, do physical exercises, and get social support so as to reduce anxiety and the spread of COVID-19 pandemic within universities.*

Keywords: Copying strategies, Students, Tanzania universities, mixed method design, Regression Analysis.

JEL classification: C12, C18, I230, I190

1. Introduction

The impact of COVID-19 pandemic was felt across a wide range of industries, populations and organisations. University, colleges and School closures, moves to online study, and the reduction of social and networking possibilities, are some of examples that have impacted on university students (Gautam & Gautam, 2021). Preliminary research revealed increased isolation and disturbed work routines which sparked increase in mental health problems vulnerability of the population (Anderson, 2020; Hamza et al., 2020). Recent studies have persuasively documented the pandemic's wide-ranging consequences on college students. Aucejo et al., (2020) did a survey at Arizona State University and revealed that, the adverse

---

*Corresponding author: Venance Shillingi

Cite as:

Shillingi, V. and Mwakasangula, E., 2023. Students' Copying Strategies with Covid-19 Pandemic in Tanzania: A Cross Sectional Study of Universities in Morogoro Municipality. *Oradea Journal of Business and Economics*, 8 (1), pp. 26–39, http://doi.org/10.47535/1991ojbe162.

impact of pandemic included delays in degree completion, lost salaries and employment possibilities, and lowered labour market expectations for students after graduation. Rodríguez-Planas, (2022) finds that low-income students in the City University of New York system are more likely to face stress and difficulty with online learning. Browning et al. (2021) and Nagar (2021) found that many students felt a lack of motivation, worry, tension, and loneliness.

Indeed, the growing research portrays a gloomy picture of the COVID-19 pandemic's impact on college students. Despite the speedy publication of these different researches, little is known about copying strategies used by university students to adjust with COVID 19 and respond to the misfortune caused by this pandemic. The main question of this study was, what coping strategies are used by university students during COVID 19 pandemic, and which ones were successful in improving outcomes? Given the pandemic's broad negative effects on students, information on appropriate coping strategies throughout the epidemic is clearly needed to help universities and colleges better serve their students. This study focuses on Universities in Tanzania.

2. Literature Review

This provides literature relating to COVID 19 pandemic and copying strategies used world-wide. The aim was to document literature related to this study.

2.1 COVID 19 Pandemic

Like any pandemic, the outbreak of the COVID-19 pandemic marked a serious interruption in all sectors of economy and all communities. Like other areas, university life was disrupted severely(Nurunnabi et al., 2020). The core academic activities in areas of teaching, research, service, and consultancy were interrupted with lockdowns requiring academics to work from home for extended periods of time (Sophie et al., 2021). However, this did not work well to some universities in Tanzania, due to lack of reliable technological infrastructure such as internet, computers and other electronic gadgets to facilitate smooth e-learning process Also, international evidence quickly began to emerge of the differential gendered experiences of these disruptions(Masha'al et al., 2022).

COVID-19 pandemic caused disruption of education system world-wide where it affected university students' learning from traditional to online learning after closure of campuses (Chandra, 2021). The shift from traditional to on line learning has troubled students through technological difficulties and associated learning gadgets such as laptop, iPad and other computer accessories to easier learning process(Zainel et al., 2021); This has raised a great concern about those university students who largely depend on university housing meal plans, and other support to make them stay secure and safe. Also, insufficient resources owing to the impacts of emotional isolations caused by COVID 19 has let to many problems to students in universities ((Huang et al., 2020; Thai et al., 2021; Urio et al., 2022). Moreover, the pandemic crisis caused health and economic implications which was mostly felt by the most vulnerable people in the communities(Escultor et al., 2022); and the evidence on how to cope with COVID 19 still remains scarce. Therefore, this study set out to investigate the students' copying strategies with COVID 19 pandemic.

Coping strategies are the perceptive and behavioural efforts made by an individual to deal with, mediate, tolerate and minimise the challenges presented by stressful situations and external sources. Studies revealed that, coping strategies help to promote positive attitude, reduce stress and psychological behaviour, whereas others worsen stress and promote a negative attitude and psychological impact (Al-Hasan et al., 2020; Akbar & Aisyawati, 2021; Aquino & Scott, 2022). The practicality of coping strategies depend on other factors such as intensity of the stressor, stressor controllability, adequate coping resources, and nature of the outcomes (Zainel et al., 2021; Franzoi et al., 2022). Students who worried of becoming infected with COVID-19 were seen to be at higher risk of anxiety compared to other students. Also, a positive correlation between students' anxiety levels and their dysfunctional coping strategies were found to include denial, behavioural disengagement, venting, and self-blame to their loved ones (Masha'al et al., 2022; Rodríguez-Planas, 2022). However, students who were studying nursing were willing to use coping planning for their betterment.

2.2 Empirical Literature Review

Masha'al et al., (2022) did a cross-sectional study on the COVID-19 infection in relation to anxiety and coping strategies among students in Jordan University during the COVID-19 pandemic. The result revealed that, there is a positive relationship between students' anxiety level and their coping strategies. The notable copying strategies were denial, venting, disconnected, and self-blame. Babicka-Wirkus et al., (2021) did a study on university students' strategies for coping with COVID-19 pandemic stress in Poland. The result showed that, during COVID 19 pandemic, students used coping strategies of planning, acceptance and seeking emotional support; while the lowest coping skills were observed to the youngest students. Moreover, Sophie et al., (2021) studied on student's perceptions and coping strategies with COVID-19 pandemic during the first wave at the faculty of medicine in Geneva. Results show that the main coping strategies were increased telecommunications and physical activity.

Thai et al., (2021) did a cross-sectional study among public health and medicine students, where the results indicated that, coping strategies and perceived stress was higher than avoidant coping strategies. Also, Akbar & Aisyawati, (2021) conducted a study on coping strategies with COVID 19 pandemic among University Students in Jakarta Indonesia. The findings revealed that coping strategies significantly decreased psychological distress among university students. Further, Nagar, (2021) studied on coping strategies of high school and college for Anxiety students which were selected based on random stratified sampling and snowball sampling technique(Franzoi et al., 2022; Ibarra-Mejia et al., 2022). The findings show that the pandemic has led to an increase in stress and a higher emotional oriented coping strategy, thus during pandemic students opted avoidance coping strategy than seeking social support and problem-solving coping strategies.

Chandra, (2021) did a study on academic stress and emotional copying strategies with COVID 19 among undergraduate and postgraduate students in Indian. The results revealed that, students used creative activities and learned courses that had new technical skills in order to cope with COVID 19; and also found that, distancing and the use of emotional intelligence were preferred copying strategies by most students in order to avoid depression and boredom; while Huang et al., (2020) studied on emotional response and coping strategies in nurses and nursing students during COVID-19 outbreak in China. The findings showed that more women meaningfully took to problem focused coping and more men took to emotion-focused coping strategies. Moreover, Nurunnabi et al., (2020) conducted a study on students coping strategies with anxiety caused by COVID-19 pandemic in China. The results revealed that, techniques for survival and coping strategies were vital due to high level of anxiety caused by the pandemic.

2.3 Conceptual Framework

The framework shows the existing relationship between predictors variables, that is copying Strategies (problem focused, seeking social support, emotion focused, social distancing) and an outcome variable which is the copying with COVID 19 pandemics. It is conceptualized that copying with COVID 19 pandemic is theorized as the outcome variable to copying strategies, that is, problem focused, seeking social support, emotion focused, distancing.

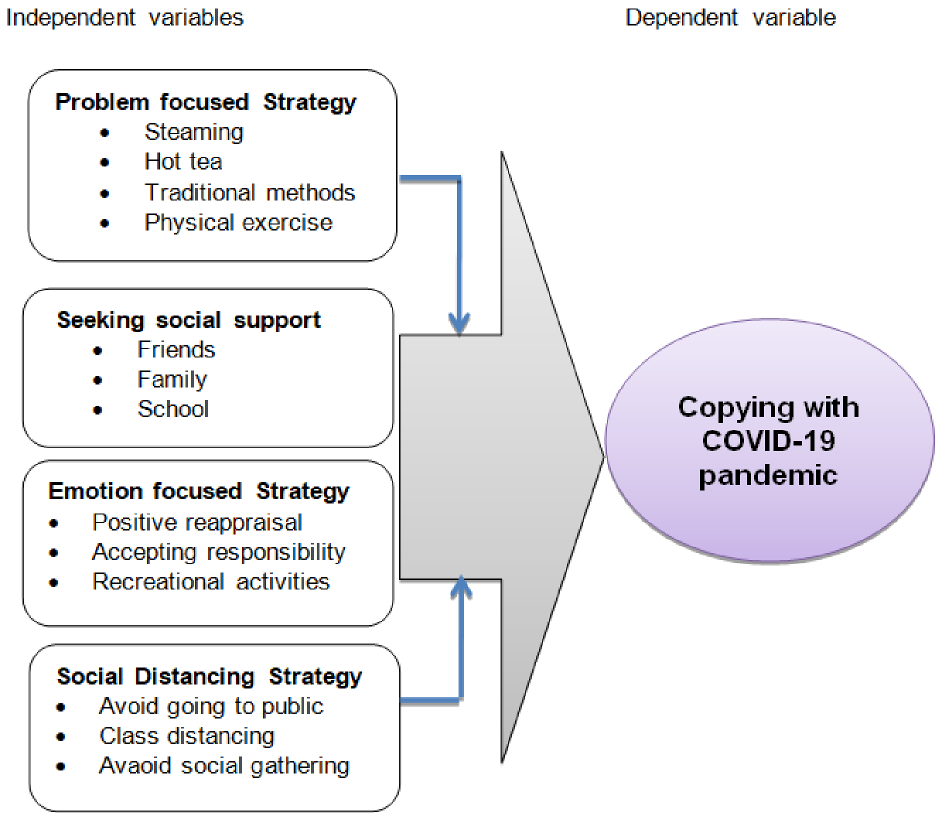

Figure 1: Conceptual framework
Source: Researcher's construct, 2022

3. Methodology

The study philosophy was pragmatism where both positivism and interpretivism were integrated, with a major emphasis on the deductive approach to theory development. This study used explanatory sequential design, that allows collection and analysis of quantitative data followed by qualitative data to explain the quantitative findings (Chandran, 2004; Feilzer, 2010; Cooper & Roger, 2012; Wilson, 2014; Bryman, 2016). The study surveyed four (4) Universities found in Morogoro municipality in Tanzania. These include Sokoine University of Agriculture (SUA), Mzumbe University (MU), Muslim University of Morogoro (MUM), and Jordan University College (JUCo). Both probability and non-probability sampling techniques were used to select a sample size of 400 respondents out of a targeted population of 3200 final year students in faculties of social science and humanities of the four (4) surveyed universities. Qualitative data were collected from twenty (20) class representatives (i.e., 5 class representatives from each university). The sample size of 389 which was 12.2% of the target population was regarded as enough for statistical tests since other scholars like Mugenda and Mugenda (2003); Creswell (2015); Kothari and Garg (2014) and Gibson, (2017) suggested that, a 10% sample size from a target population is large enough for reliable data analysis, tests for significance, and to infer the findings of the study.

Inferential analysis was used to establish the influence of students' copying strategies with COVID 19 pandemic at alpha of 0.05. The study used this regression model:

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_i$$

Whereby $Y =$ copying with COVID 19 pandemic, β_o Is a constant that predicts the level of influence given the Y-value when all predictors' values (X_1, X_2, X_3, X_4 – are zero while $\beta_{1,}\ \beta_2,\ \beta_3, \beta_4$ - are constant regression coefficients representing the conditions of the predictors to the outcome variable. On the other hand, X_1 - Problem focused strategy, X_2 – Seeking social support strategy, X_3 – Emotional focused strategy, X_4– Social distancing strategy and μ_i - A disturbance term explaining other predictors that influence copying with COVID 19 pandemic but the study did not consider them.

4. Presentation of Findings

The study used descriptive statistics and regression analysis as data analysis tools in this study.

4.1 Descriptive Analysis

The study targeted data from a sample size of 400 out of 3200 final year students housed in the faculty of social science and humanities at the main campus of the four (4) surveyed universities in Morogoro municipality, which is 12.2% of the target population. However, out of 400 respondents a total of 389 returned questionnaires, which translated to 97.25% of response rate. This is correlates with other scholars who argue that, response rate of 70% is suitable for a study (Kothari, 2011). Therefore, response rate of 97.25% is appropriate for a study to infer its findings.

4.1.1 Students' Copying Strategies with COVID 19 Pandemic

The study set out to determine the influence of Students' copying strategies (problem focused, seeking social support, emotional copying, and distancing strategies) on copying with COVID-19 pandemic in Tanzania's higher learning institutions. Below were finding obtained. These copying strategies were surveyed by using a five-point likert scale. The result is explained in the following sections as per predictor:

Problem focused Strategy in Copying with COVID 19 Pandemic

The aspects of Problem focused strategy to organization performance were examined by asking the respondents whether leaders had ability to direct subordinates, capability toward organization direction, and the availability of multiple skills in leading. The results in Figure 4.1 show that, out of 389 respondents the majority about 28% strongly agreed and 46% agreed while 7% were neutral. Others, 8% and 11% of the respondents disagreed and strongly disagreed respectively. The findings suggest that, large segments of students used to steam as a copying strategy with COVID 19 in higher learning institutions. These results support other researchers who reported that, use of steam inhalation therapy helps in managing respiratory conditions. However it lacks scientific support as an appropriate practice(Chowdhury et al., 2022).

One of the class representatives of Mzumbe University lamented that:

> *"… some students use steam therapy as their copying strategy with COVID 19, most use their water jugs to boil water mixed with traditional herbs to steam themselves in*

their hall of residents" (*Interview, Class representative, Mzumbe University; 22/03/2022).*

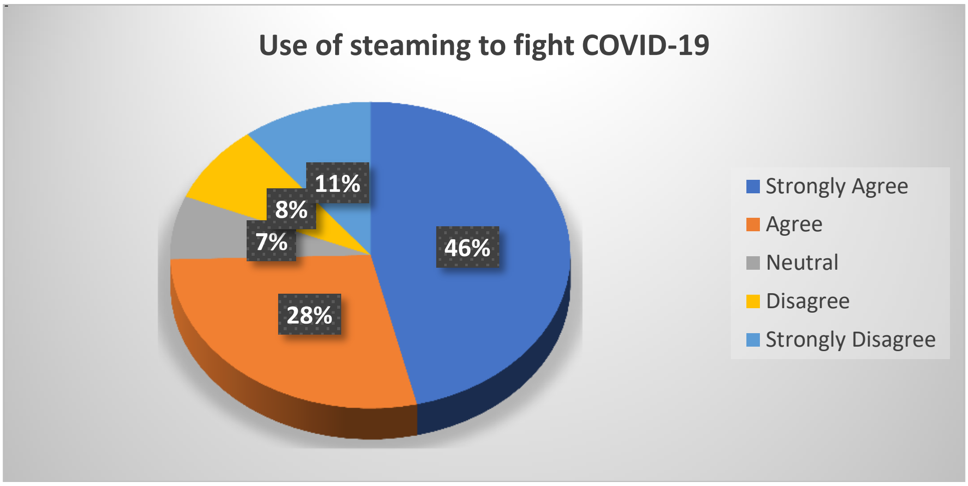

Figure 4.1: Use of Steaming as a strategy for copying with COVID-19
Source: Field data, 2022

Also, one respondent validated the above findings by attesting that:

> *"…COVID 19 has pushed students to use different strategies such as steaming and jogging during morning and evening. Use of steam is mostly used by girls who own water jugs in their rooms, and especially those who live off campus" (Interview, Class representative, JUCo; 22/03/2022).*

Table 4.1: Problem focused strategy on COVID 19 (percentages)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Do students use hot tea as a copying strategy for COVID 19?	8	11	5	22	54
Do students use traditional methods such as traditional herbs as a copying strategy for pandemic?	4	9	6	49	32
Do students engage is physical exercise as a copying strategy for COVID 19?	8	6	24	39	23

Source: Field data, 2022

Findings in Table 4.1 answer a question which asked respondents "Do students use hot tea as a copying strategy for COVID 19". In this case, out of 389 respondents the majority about 54% strongly disagreed and 22% disagreed. On the other hand, 5 % were neutral while the remaining about 11% and 8% agreed and strongly agreed respectively. Further remarks were obtained from the second question which requested students whether use traditional methods such as traditional herbs as a copying strategy for pandemic.
This was supported by one respondent who argued that:

> *"…this depends on the family the students are coming from, those who comes from rural areas where they normally use traditional herbs for treatments of diseases are*

also using as copying strategy for COVID 19, but who live in urban and cities they consider traditional herbs as uncivilized practice" ***(Interview, Class representative, JUCo; 03/03/2022).***

Also, the findings in Table 4.1 reveal that out of 389 respondents, 32% strongly disagreed and 49% disagreed while 6% were neutral. Others, 9% agreed and 4% strongly agreed respectively. The third question asked whether students engage is physical exercise as a copying strategy for COVID 19. The result revealed that, out of 389 respondents, 8% strongly agreed and 6% agreed while 24% were neutral. On the other hand, the majority of respondents about 39% were disagreed and 23% strongly disagreed respectively.

This was supported by one respondent who argued that:

"…most students do not like physical exercise, but those who enjoy it have used it as a copying strategy for COVID 19; and actually, the number of those jogging nowadays has increased tremendously" (Interview, Class representative, MUM; 24/03/2022).

Seeking social support Strategy with COVID 19 Pandemic

The aspects of seeking social support strategy in copying with COVID 19 pandemic, was examined by asking the respondents whether students use their friends as a copying strategy for COVID 19 pandemic. The results in Table 4.2 show that, out of 389 respondents, majority about 31% of respondent strongly agreed and 28% agreed while 6% were neutral. Others, 21% disagreed and 14% strongly disagreed respectively. Therefore, the results suggest that, use of friends to cope with COVID 19 stress was used by most of students in higher learning institutions.

In an in-depth interview with one of the students at SUA confirmed that:

*"… In my view, students use their friends to cope with COVID 19, social media such as Instagram and Whatsup has helped students to connect easily with their friends" (Interview, Class Representative, SUA; 11/3/2022****).***

The result correlate with other scholars who argues that, significant social support decreases psychological distress and serves as the basis for intervention (Akbar & Aisyawati, 2021).

Table 4.2: Seeking social support Strategy in Copying with COVID 19 Pandemic (percentages)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Do students use their friends as a copying strategy for COVID 19?	31	28	6	21	14
Do students use their family relations as a copying strategy for COVID 19 pandemic?	59	15	8	13	5
Do students use their colleagues and lecturers' social relations as a copying strategy for COVID 19 pandemic?	35	17	29	13	6

Source: Field data, 2022

Moreover, the results in Table 4.2 in respect to students who use their family relations as a copying strategy for COVID 19 pandemic show that, out of 389 respondents, majority about 59% of respondent strongly agreed and 15% agreed while 8% were neutral. Others, 13%

and 5% of the respondents disagreed and strongly disagreed respectively. Therefore, the results suggest that, use of family relations to cope with COVID 19 stress was mostly used by students in higher learning institutions.

In an in-depth interview with one of the students at MUM, it was confirmed that:

> *"… In case of stress caused by COVID 19 I normally call my mom, dad, sister or brother to share my experience and get encouragement from them. I realized family is a key for my wellbeing especially during the time of stress. I love my family" (Interview, Class Representative, MUM; 24/3/2022).*

Emotional focused Strategy in Copying with COVID 19 Pandemic

The issue of Emotional focused Strategy in Copying with COVID 19 Pandemic was examined by asking whether students use recreational activities as a copying strategy for COVID 19 pandemic. The results in Table 4.3 show that out of 389 respondents, 16% strongly agreed and 20% agreed while 9% were neutral. Others, 22% and 33% of respondents disagreed and strongly disagreed respectively. These findings suggest that, most students in Tanzania's higher learning institutions do not use recreational activities as a copying strategy for pandemic. Also, in respect to whether students use positive reappraisal as a copying strategy for COVID 19 pandemic, the results in Table 4.3 show that out of 389 respondents, 20% strongly agreed and 11% agreed while 8% were neutral. Majority about 37% disagreed and 24% strongly disagreed respectively. The results suggest that, students do not use positive reappraisal as a copying strategy with COVID 19 in Tanzania's higher learning Institutions.

Table 4.3: Emotional focused Strategy in Copying with COVID 19 Pandemic (percentages)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Do students use positive reappraisal as a copying strategy for COVID 19?	20	11	8	37	24
Do students use accepting responsibility as a copying strategy for COVID 19 pandemic?	21	13	14	38	14
Do students use recreational activities as a copying strategy for COVID 19 pandemic?	16	20	9	22	33

Source: Field data, 2022

Social distancing Strategy with COVID 19 Pandemic

The aspect of social distancing Strategy with Copying with COVID 19 Pandemic was examined by asking whether students avoid going to public places as a copying strategy for COVID 19. The results in Table 4.4 show that out of 389 respondents, majority about 32% agreed and 19% strongly agreed while 10% were neutral. Others, 30% disagreed and 9% strongly disagreed respectively. These results confirm that, students were not going to public places in order to protect themselves with COVID 19 pandemic.

In an in-depth interview with one of the students at Mzumbe University, it was confirmed that

> *"… nowadays activities involving gathering and going to public places are not encouraged at our university, we even don't participate in inter-university games. We take the issue of social distancing very serious as one of our copying strategies with COVID 19 at our university" (Interview, Class Representative, MU; 22/3/2022).*

Also, on the issue whether students use distancing in class arrangement as a copying strategy for COVID 19 pandemic, the results in Table 4.4 show that out of 389 respondents, the majority about 37% disagreed and 17% strongly disagreed while 11% were neutral. Others, 15% and 20% of the respondents agreed and strongly agreed respectively. These findings confirm that, during classes and group discussion students did not observe distancing protocol for COVID 19 were not observed

In an in-depth interview with one of the students at JUCo, it was confirmed that:

> *"… Students do not adhere to distancing protocol due to the small size of our lecture halls to accommodate large number of students. The university should build large halls if distancing is to be applied. So, social distancing does not fit to our university infrastructure" (Interview, Class Representative, JUCo; 22/3/2022).*

Moreover, on the issue whether students use of mask and wash hand with running water as a copying strategy for COVID 19 pandemic. The results in Table 4.4 show that out of 389 respondents, the majority about 30% disagreed and 19% strongly disagreed while 21% were neutral. Others, 13% and 17% of respondents agreed and strongly agreed respectively. These findings confirm that, students in Tanzania's higher learning institutions do not adhere to wearing musk and washing their hands with running water.

In an in-depth interview at JUCo, one of the students had this to say:

> *"… it is unbelievable that students are not washing hands with running water despite the fact that the university had created environment for availability of water in many locations within the university. In the case of mask, only few students do wear them, others have different reasons including financial reasons to buy masks" (Interview, Class Representative, JUCo; 22/3/2022).*

The results on wearing mask differ with other scholars who argued that, wearing of face masks was also related with risk perception as well as compliance to advice from responsible health authorities (Zhao & Knobel, 2021).

Table 4.4: Social distancing Strategy with COVID 19 Pandemic (percentages)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Do students avoid going to public places as a copying strategy for COVID 19?	19	32	10	30	9
Do students use distancing in class as a copying strategy for COVID 19 pandemic?	20	15	11	37	17
Do students use of mask and wash hand with running water as a copying strategy for COVID 19 pandemic?	17	13	21	30	19

Source: Field data, 2022

4.2 Inferential Analysis

Inferential analysis was used to determine copying strategies (Problem focused strategy, seeking social support strategy, emotional focused strategy, and social distancing strategy) as predictors on copying with COVID 19 as dependent variable. Multiple regression analysis was used to determine the variation caused by independent variables. Regression analysis show that there is strong and positive relationship among variables in the study (R=0.890). Also, the results indicate that 79.1 % of variation of coping with COVID-19 in higher learning institutions is explained by problem focusing strategy, distancing, seeking social support and emotional coping strategy value (R square = 0.791). The remaining 20.9% of coping with COVID-19 in higher learning institution in Morogoro Municipality is explained by other strategies which this study did not consider. Table 4.5 below show results of regression analysis

Table 4.5: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.890[a]	.791	.789	.45914169

a. Predictors: (Constant), Emotional coping strategy, Problem focus strategy, Social Distancing, Seeking social support.

4.2.1 Analysis of variance (ANOVA) for all variables

The analysis of variance (ANOVA) results presented in Table 4.6 below confirm that the model goodness of fit is appropriate for this data since F = 364.128 and the p-value of 0.00 is less than significant level of 0.05 with df = 384. Hence, the result means that focusing coping strategy, seeking social support, distancing and emotional coping strategy, collectively can predict relationship with coping with COVID-19 in higher learning institutions.

Table 4.6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	307.049	4	76.762	364.128	.000[b]
	Residual	80.951	384	.211		
	Total	388.000	388			

a. Dependent Variable: Coping with COVID-19
Predictors: (Constant), emotional coping strategy, problem focusing coping strategy, distancing, seeking social support

4.3.3 Combined contribution of predictors of copying with COVID 19 pandemic

The coefficient tables of results below show the contribution of predictors (problem focus strategy, seeking social support, distancing and emotional copying strategy) to the changes in dependent variable (copying with COVID-19 pandemic). The results revealed that (β=0.024, t=0.819, p=0.413) problem focus strategy insignificantly affected coping with COVID-19 in higher learning institutions; while seeking social support strategy significantly influenced coping with COVID-19 in higher learning institutions as indicated by p-value=0.000 which is less the alpha=0.05. Further, result revealed that (β=0.458, t=10.924, p=0.000) confirmed that, distancing strategy has positive significant influenced on coping with COVID-19 in higher learning institutions. Furthermore, the results on emotional copying strategy (β=0.022, t=0.718, p=0.473) implied that, there was no significant influence on COVID 19 pandemic as p-value=0.473 was greater than alpha =0.05. Therefore, seeking social support strategy and distancing strategy had significant influence, while problem focus strategy and emotional coping strategy had no significant influence on coping with COVID-19 in higher learning institutions. The joint effect model goodness of fit was CWC= -3.845 + 0.024X_1+ 0.446X_2 + 0.458X_3+ 0.022X_4 + Ɛ. The model implies that if student copying strategies are not existing, coping with COVID-19 to students in higher learning institutions will decrease at a rate of 3.845.

Table 4.7: Linear regression of independent and dependent variables

Linear Regression Model	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
(Constant)	-3.845	.023		.000	1.000
Problem focus strategy	.024	.029	.024	.819	.413
Seeking social support	.446	.043	.446	10.483	.000
Distancing	.458	.042	.458	10.924	.000
Emotional coping strategy	.022	.031	.022	.718	.473

a. Dependent Variable: coping with COVID-19

5. Discussion of Findings
The following sections provides discussion of the findings in respect to four variables of this study.

5.1. Problem focus strategy and coping with COVID-19
The results from the linear regression analysis of independent variable to dependent variable reveal (β=0.024, p=0.413), which means problem focus strategy was not significant on influencing Coping With COVID-19 for university students in Morogoro Municipality. The model goodness of fit was CWC= -3.845 + $0.024X_1$+ $0.446X_2$ + $0.458X_3$+ $0.022X_4$ + Ɛ. The model implies that a unit change in problem focus strategy will increase coping with COVID-19 by the rate of 0.024 equal to 2.4% and if problem focus strategy does not exist, coping with COVID-19 will decrease at a rate of 3.845, keeping other copying strategies constant. The results differ with other scholars who argues that, women seriously took problem focused strategy to cope with COVID 19 than men (Huang et al., 2020; Chowdhury et al., 2022).

5.2. Seeking for social support Strategy and coping with COVID-19
The results from the linear regression analysis of independent variable to dependent variable reveal (β=0.446, p=0.000), which means seeking social support strategy was significantly influencing Coping with COVID-19 for university students in Morogoro Municipality. The model goodness of fit was CWC= -3.845 + 0.024 + 0.446 + 0.458 + 0.022 + Ɛ. The model implies that a unit change in seeking for social support strategy will increase coping with COVID-19 by the rate of 0.446 equal to 44.6% and if seeking for social support does not exist, coping with COVID-19 will decrease at a rate of 3.845, keeping other copying strategies constant. These findings are comparable with (Babicka-Wirkus et al., 2021), who reveal that seeking for social support was statistically significant coping strategy to coronavirus pandemic in Poland. Further, Akbar & Aisyawati, (2021) revealed that coping strategies and increased social support were significantly related with decreased psychological distress. In line with the findings made by (Stravakou & Lozgka, 2022) shows that seeking social support significantly influencing coping with COVID-19 pandemic and was the most used strategy among colleges' students. The findings were different from that of, (Nagar, 2021) who revealed that during pandemic high school and college students adopted higher avoidance coping strategy than seeking support coping strategy.

5.3 Distancing Strategy and Coping with COVID-19
The results from the linear regression analysis of independent variable to dependent variable reveals (β=0.458, p=0.000), which means distancing strategy was significantly influencing Coping With COVID-19 for university students in Morogoro Municipality. The

model goodness of fit was CWC= -3.845 + 0.024X_1+ 0.446X_2 + 0.458X_3+ 0.022X_4 + Ɛ. The model implies that a unit change in distancing strategy will increase coping with COVID-19 by the rate of 0.458 equal to 45.8% and if distancing strategy does not exist, coping with COVID-19 will decrease at a rate of 3.845, keeping other copying strategies constant. These findings are in line with the findings made by Falasifah, Fitria and Hakim, (2021) which shows that distancing significantly influenced coping with COVID-19 pandemic and was the most used strategy among college students. Also, Al-Hasan, Khuntia and Yim (2020) found that social distance during pandemic significantly influenced citizen in United State to cope with COVID-19. Similarly, Zainel et al. (2021) found that social distancing in children and adolescents during the COVID-19 pandemic were significantly influencing them to cope with COVID-19 pandemic.

5.4. Emotional Copying Strategy and Copying with COVID-19

The results from the linear regression analysis of independent variable to dependent variable reveals (β=0.022, p=0.473), which means emotional copying Strategy was not significant on Coping With COVID-19 for university students in Morogoro Municipality. The model goodness of fit was CWC= -3.845 + 0.024X_1+ 0.446X_2 + 0.458X_3+ 0.022X_4 + Ɛ. The model implies that a unit change in emotional copying Strategy will increase coping with COVID-19 by the rate of 0.022 equal to 2.2% and if distancing strategy does not exist, coping with COVID-19 will decrease at a rate of 3.845, keeping problem focusing coping strategy and emotional coping strategy constant. The results differ with other scholars who argue that, the pandemic has greatly and negatively affected the students' emotional, psychological, and mental state, who experienced mainly fear and anxiety (Franzoi et al., 2022). Similarly, other scholars revealed that, the pandemic has led to an increase in stress and a higher emotional oriented coping strategy. Therefore, students opted avoidance coping strategy than seeking social support and problem-solving coping strategies during pandemic (Franzoi et al., 2022; Ibarra-Mejia et al., 2022).

6. Conclusion

The study concludes that, individually seeking social support and distancing strategies significantly influence copying with COVID 19 pandemic in Tanzania high learning institutions while problem focus and emotional copying strategy insignificantly influence copying with COVID 19. However, collectively F=364.128 and p-value= 0.000 confirms that predictors influence significantly COVID 19 pandemic. In this regard, based on the findings of this study, R-square of 0.791 implies that, 79.1% of COVID-19 initiatives in higher learning institutions in Tanzania is contributed by students copying strategies, while 20.9% is contributed by other strategies which this study did not consider. The study recommends that higher learning institutions should develop an innovative and helpful approach to promote and address the emotional issues of students during a pandemic; encourage students to maintain social distancing among each other so as to reduce the spread of COVID-19; and also ensure social support among students so that they can maintain and handle the spread of COVID-19 within universities.

References

Anderson, D., Kelliher, C., 2020. Enforced Remote Working and the Work-Life Interface During Lockdown. *Gender in Management*, 35(7/8): 677-83. https://doi.org/10.1108/GM-07-2020-0224

Akbar, Z., Aisyawati, M. S., 2021. Coping Strategy, Social Support, and Psychological Distress Among University Students in Jakarta, Indonesia During the COVID-19 Pandemic.

Frontiers in Psychology, *12*, pp. 1–7. https://doi.org/10.3389/fpsyg.2021.694122
Al-Hasan, A., Khuntia, J., Yim, D., 2020. Threat, Coping, and Social Distance Adherence During COVID-19: Cross-Continental Comparison Using an Online Cross-Sectional Survey. *Journal of Medical Internet Research*, *22*(11): 1–14. https://doi.org/10.2196/23019
Aquino, K. C., Scott, S., 2022. “They’re Coming in Pretty Defeated:” Mental Health During the COVID-19 Pandemic (Practice Brief). *Journal of Postsecondary Education&Disability*, 35(2): 175–82.
Aucejo, E. M., French, J., Paola, M., Araya, U., Zafar, B., 2020. COVID-19 Treatment: Close to a Cure? A Rapid Review of Pharmacotherapies for the Vovel Coronavirus (SARS-CoV-2). *International Journal of Antimicrobial Agents,* 56(2): 106080, https://doi.org/10.1016/j.ijantimicag.2020.106080
Babicka-Wirkus, A., Wirkus, L., Stasiak, K., Kozłowski, P., 2021. University Students’ Strategies of Coping With Stress During the Coronavirus Pandemic: Data From Poland. *PLoS ONE*, 16(7): 1-27. https://doi.org/10.1371/journal.pone.0255041
Browning, M. H. E. M., et al., 2021. Psychological Impacts From COVID-19 Among University Students: Risk Factors Across Seven States in the United States. *PloS One*, 17(8): 1-27. https://doi.org/10.1371/journal.pone.0245327
Chandra, Y., 2021. Online Education During COVID-19: Perception of Academic Stress and Emotional Intelligence Coping Strategies Among College Students. *Asian Education and Development Studies*, 10(2): 229–238. https://doi.org/10.1108/AEDS-05-2020-0097
Chowdhury, M. N. R., Alif, Y. A., Alam, S., Emon, N. U., Richi, F. T., Zihad, S. M. N. K., Taki, M. T. I., Rashid, M. A., 2022. Theoretical Efectiveness of Steam Inhalation Against SARS-CoV-2 Infection: Updates on Clinical Trials, Mechanism of Actions, and Traditional Approaches. *Heliyon*, 8(1). https://doi.org/10.1016/j.heliyon.2022.e08816
Escultor, P. T., Galinato, R., Labadan, R., Liwa, L., Arcilla Jr., F. E., 2022. Coping Styles Among College Students During COVID-19 Pandemic. *Randwick International of Education and Linguistics Science Journal*, 3(2): 413–19. https://doi.org/10.47175/rielsj.v3i2.489
Franzoi, I. G., Sauta, M. D., Barbagli, F., Avalle, C., Granieri, A., 2022. Psychological Interventions for Higher Education Students in Europe: A Systematic Literature Review. *Youth*, 2(3): 236-57. https://doi.org/10.3390/youth2030017
Gautam, D. K., Gautam, P. K., 2021. Transition to Online Higher Education During COVID-19 Pandemic: Turmoil and Way Forward to Developing Country of South Asia-Nepal. *Journal of Research in Innovative Teaching & Learning*, 14(1): 93–111. https://doi.org/10.1108/jrit-10-2020-0051
Hamza, C., Heath, N. L., Goldstein, A. L., 2020. When Social Isolation Is Nothing New: A Longitudinal Study On Psychological Distress During COVID-19 Among University Students With and Without Preexisting Mental Health Concerns. *Canadian Psychology/Psychologie canadienne*, 62(1): 20–30. https://doi.org/10.1037/cap0000255
Huang, L., Lei, W., Xu, F., Liu, H., Yu, L., 2020. Emotional Responses and Coping Strategies in Nurses and Nursing Students During Covid-19 Outbreak: A Comparative Study. *PLoS ONE*, 15(8): 1–12. https://doi.org/10.1371/journal.pone.0237303
Ibarra-Mejia, G., Lusk, M., Umucu, E., 2022. Mental Health Among College Students During the COVID-19 Pandemic at a Hispanic-Serving Institution. *Health Promotion Practice*, 0(0), pp. 1–10. https://doi.org/10.1177/15248399221092750
Masha’al, D., Shahrour, G., Aldalaykeh, M., 2022. Anxiety and Coping Strategies Among Nursing Students Returning to University During the COVID-19 Pandemic. *Heliyon*, 8(1): 1-8. https://doi.org/10.1016/j.heliyon.2022.e08734
Nagar, T., 2021. Coping Strategies of Students of High School and College for Anxiety During the Pandemic. *SSRN Electronic Journal*, 7(3): 2235-42. https://doi.org/10.2139/ssrn.3939784
Nurunnabi, M., Hossain, S. F. A. H., Chinna, K., Sundarasen, S., Khoshaim, H. B., Kamaludin, K., Baloch, G. M., Sukayt, A., Shan, X., (2020). Coping Strategies of Students

for Anxiety During the COVID-19 Pandemic in China: A Cross-Sectional Study. *F1000 Research*, 9, pp. 1–16. https://doi.org/10.12688/f1000research.25557.1

Rodríguez-Planas, N., 2022. Hitting Where It Hurts Most: COVID-19 and Low-Income Urban College Students. *Economics of Education Review*, 87, 102233. https://doi.org/10.1016/j.econedurev.2022.102233

Sophie, W. et al., 2021. Medical Students' Perceptions and Coping Strategies During the First Wave of the COVID-19 Pandemic: Studies, Clinical Implication, and Professional Identity. *BMC Medical Education*, 21(1): 1–11. https://doi.org/10.1186/s12909-021-03053-4

Stravakou, P. A., Lozgka, E. C., 2022. The Effects of the COVID-19 Pandemic On University Students' Well-Being and Students' Coping Strategies: A Qualitative Approach. *Scholars Bulletin*, 8(5): 130-40. https://doi.org/10.36348/sb.2022.v08i05.001

Thai, T. T., Le, P. T. V., Huynh, Q. H. N., Pham, P. T. T., Bui, H. T. H., 2021. Perceived Stress and Coping Strategies During the COVID-19 Pandemic Among Public Health and Preventive Medicine Students in Vietnam. *Psychology Research and Behavior Management*, *14*, pp. 795–804. https://doi.org/10.2147/PRBM.S317059

Urio, P. J., Murphy, S. P., Moses, I., Chua, C., 2022. Exploring the Gendered Effects of the COVID-19 Pandemic On Academic Staff In Tanzania. *Alliance for African Partnership Perspectives,* 1, pp. 61–71.

Zainel, A. A., Qotba, H., Al-Maadeed, A., Al-Kohji, S., Al Mujalli, H., Ali, A., Al Mannai, L., Aladab, A., AlSaadi, H., AlKarbi, K. A., Al-Baghdadi, T., 2021. Psychological and Coping Strategies Related to Home Isolation and Social Distancing in Children and Adolescents During the COVID-19 Pandemic: Cross-Sectional Study. *JMIR Formative Research*, *5*(4): e24760. https://doi.org/10.2196/24760

Zhao, X., and Knobel, P., 2021. Face Mask Wearing During the COVID-19 Pandemic: Comparing Perceptions in China and Three European Countries. *Translational Behavioral Medicine*, *11*(6): 1199–1204. https://doi.org/10.1093/tbm/ibab043

Bio-notes:

Dr. Venance Shillingi (PhD) is a Lecturer and Strategic Management consultant at *Mzumbe University, School of Public Administration and Management (SOPAM)*, Morogoro - Tanzania. He holds a PhD in Business Administration (Strategic Management) from Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi Kenya; MBA (corporate Management) and Bachelor of Public Administration (BPA) both from Mzumbe University, Tanzania; and has published widely in area of strategic management, conflict management, and quality service delivery in health sector. Dr. Shillingi has over 15 years of lecturing, research and consultancy. He has also trained broadly in areas of strategy, strategic management, Strategic leadership, performance management (with balance score card & OPRAS), change management, business ethics, human resource management and other related general management courses. He has also consulted extensively in formulation and review of strategic plans (more than 10 organisations in public sector), business plans, client service charter, Training Needs Assessments (TNA), and other performance tools in private and public sector.

Dr. Eliza Mwakasangula (PhD) is a Senior Lecturer and School Dean, School of *Public Administration and Management (SOPAM) of Mzumbe University in Tanzania*. She has published and trained widely in area of leadership, public administration and general management.

DIVERSITY AND INCLUSION WITHIN MULTICULTURAL LEADERSHIP IN THE COVID YEARS: A BIBLIOMETRIC STUDY 2019-2022

Constantin Bratianu[1], Dan Paiuc[2*]
[1]*Bucharest University of Economic Studies, Bucharest, Romania*
[2]*National University for Political Studies and Public Administration, Management, Bucharest, Romania*
constantin.bratianu@gmail.com
dan.paiuc@facultateademanagement.ro

Abstract: *According to Harvard Business Review, companies with higher diversity experienced 19% higher revenues, but in the meantime, 57% of employees feel their businesses must assiduously concentrate on diversity and inclusion plans. This article aims to present a bibliometric study of diversity and inclusion (DI) in the COVID years 2019-2022. Our analysis was based on the Scopus database, while the bibliometric research was performed via VOSviewer: version 1.6.17, one of the most utilized academic software tools for constructing and visualizing bibliometric networks. In conclusion, our research questions are answered, underlining that, during the last 4 COVID years 2019-2022 the DI phenomenon was a main vector of multinational leadership (ML) and that physical/mental abilities, race and ethnicity, and educational background are the new main drivers of DI. The value of these findings resides in the agile repositioning of the DI role within multinational leadership and can serve as a reference and guidance both for business professionals and researchers.*

Keywords: diversity and inclusion, multicultural leadership, inclusive leadership, knowledge dynamics, cultural intelligence.

JEL classification: A1, F20, F23

1. Introduction

In 2018, the Boston Consulting Group studied more than 1700 companies from eight countries to analyze the correlation of various aspects of diversity and inclusion (DI) - like gender, ethnicity, race, age, career track, or education with business performance. The result showed that companies that scored high in DI obtained both 19% higher innovation incomes, and 9% higher EBIT margins (Lorenzo and Reeves, 2018). This meant that DI initiatives not only make enterprises better places to work but also stimulate better business performances.

As the last 4 COVID years: 2019-2022 had put pressure on business performances (Bratianu, 2022; Kalogiannidis, 2020), multicultural leadership (ML) was challenged (Paiuc, 2021c), and forced to address diversity and inclusion also as a revenue growth factor. Besides race and gender, which were the main drivers of DI till 2018 (Henne, 2018), the COVID years raised new priorities for DI and ML via the growth of the affected physical and

[*] Coresponding author: Dan Paiuc
Cite as:
Bratianu, C. and Paiuc, D., 2023. Diversity and Inclusion within Multicultural Leadership in the Covid Years: a Bibliometric Study 2019-2022. *Oradea Journal of Business and Economics*, 8 (1), pp. 40–51, http://doi.org/10.47535/1991ojbe163.

mental abilities of the workforce (Cui *et al.*, 2022), and have questioned the cultural intelligence weight and limits (Bratianu, Iliescu & Paiuc, 2021). In this context, we would like to explore the literature to see how diversity and inclusion influenced multicultural leadership during that period of four years.
The study will start with an introduction, followed by a brief literature review that will position and contextualize our research, and will present the writings' gaps and will serve as a base for our research questions. A database and methodology chapter will be dedicated before presenting the results, conclusions, and limitations.

2. Literature review

According to Dictionary.com (2022), *diversity and inclusion* is a conceptual framework that encourages the fair and correct treatment and full participation and engagement of all people, mainly in the workplace, including groups and populations who have historically been underrepresented or subject to discrimination because of their background, identity, disability, and other dissimilar factors. Diversity and inclusion are interconnected concepts (Rwiza, 2019), but they are far from being interchangeable. Diversity is about the rendering of a structure or entity and its knowledge entropy (Bratianu, 2007, 2019; Carrim, 2022), while inclusion (Nguyen, 2022) is about how well the existence, views, contributions, and perspectives of different categories and groups of people are evaluated, appreciated, and integrated into a framework. DI permits and encourage organizations to be more inclusive of various ideas, cultures, and way of living and accelerate the knowledge dynamics and transfer (Bratianu & Leon, 2015; Bratianu & Paiuc, 2022b), leading to improved company culture and trust building. The internal dimensions of diversity (Olu-Ogunleye, Akinbode, & Ogunleye, 2022) are gender, race, ethnicity, age, sexual orientation, and physical/mental abilities. Gender occupies a consistent part of the diversity agenda (Grogan & Dias, 2015), and in December 2022, Dictionary.com selected the word "woman" as its *Word of the Year* for 2022, based on its doubled annual search volume (Adams, 2022). While the race pressure on diversity is decreasing as 48% of Generation Z are racial or ethnic minorities (Parker & Igielnik, 2020), COVID-19, linked to knowmads phenomenon (Paiuc & Iliescu, 2022), brought into the DI’s focus the physical/mental abilities (Cui et al., 2022) and challenged the multicultural leadership agility and readaptation pace.
The external dimensions of diversity are related to geographic location, religion and spirituality, personal and recreational habits, revenues, educational and work background, appearance, and marital and parental status; while the organizational dimensions of diversity are linked to criteria such as management status, work field and location, seniority or functional classification (Mor Barak, Cherin & Berkman, 1998). Cultural intelligence, as the main competency for ML (Paiuc, 2021b), has been challenged during the COVID years (Zaman et al., 2021), while the interest for knowledge gathering, dynamics, and sharing increased (Thygesen et al., 2022). In a context in which DI in the workplace is directly linked to performance and can boost innovation by 20% (Lorenzo & Reeves, 2018), increasing diversity and inclusion is not only a moral imperative but a strong business requirement from the multicultural leadership (Tsusaka & Krentz, 2019), as “we are greater than, and greater for, the sum of us.” (McGhee, 2021: 289-299).

3. Data sources and methodology

Based on a bibliometric analysis we would like to explore the literature response to the four years of COVID pandemic crisis from the perspective of diversity and inclusion phenomena influence upon the multicultural leadership. The research questions for the present study are the following:

RQ 1: What role did diversity and inclusion play in multicultural leadership during the last four global pandemic years?
RQ 2: What topics were intensified by the pandemic years, and are nowadays the new main drivers of DI?

The present work is based on bibliometric analysis, implemented as per the research protocols presented in tables 1 and 2, in order to answer our research questions. The data was retrieved on the 3rd of December, 2022, from Scopus, one of the most extensive databases of peer-reviewed publications that also facilitates the export of the largest range of data requested by our bibliometric study (Janik, Ryszko & Szafraniec, 2021). The researched timespan was linked to our research timeline and tackles the years 2019, 2020, 2021, and 2022 till the 3rd of December. We have not changed the preset searching and filtering Scopus settings for the type of publications, document types; keywords; countries; source types or titles; authors; publication stages; affiliates; funding, and open access - and we have not excluded anything from the above structures. We have run a mix of two text mining investigations – focused on ML and DI in order to discover trends and patterns that could support answers to our research questions.

Table 1: Research protocol for ML

Research protocol 1	**Description/ Explanations**
Search expressions	“multicultural leadership” or “multi-cultural leadership” or "multinational leadership" or "multi-national leadership";
Search database	Scopus;
Search fields	All fields;
Type of publications	All types of publications indexed in the Scopus database;
Subject Areas	All subject areas included in Scopus, up till the 3rd of December 2022, for DI
Timespan	2019-2022;
Language	All languages;
Document types; keywords; countries; source types or titles; authors; publication stages; affiliates; funding and open access	We have kept all the preset parameters and have not excluded any.
Techniques for the bibliometric study	Research field charting (descriptive and performance matrixes via advanced search model) embedded with co-occurrence investigation procedure.
Software for bibliometric research	VOSviewer: version 1.6.17

Source: Author’s analysis /processing based on own data

For DI, in *the first stage*, the “diversity and inclusion” expression was searched within the fields: article titles, abstracts, and keywords – with a return of 1908 documents found. 706 publications are linked to the year 2022 – accountable for 37% of our selected timespan writings (2019-2022) – this showing the constantly increased importance of DI. (706 DI-related documents in 2022; 598 in 2021; 377 in 2020, and 227 in 2019).

Table 2: Research protocol for DI – *first stage*

Research protocol	**Description/ Explanations**
Search expressions	“Diversity and Inclusion”;
Search database	Scopus;
Search fields	Article titles, abstracts, keywords;
Type of publications	All types of publications indexed in the Scopus database;
Subject Areas	All subject areas included in Scopus, up till the 3rd of December 2022, for DI
Timespan	2019-2022;
Language	All languages;
Document types; keywords; countries; source types or titles; authors; publication stages; affiliates; funding and open access	We have kept all the preset parameters and have not excluded any.
Techniques for the bibliometric study	Research field charting (descriptive and performance matrixes via advanced search model) embedded with co-occurrence investigation procedure.
Software for bibliometric research	VOSviewer: version 1.6.17

Source: Author’s analysis /processing based on own data

In the second stage of protocol 2, DI was researched in the Scopus database during two timeframes: 1998 (first appearance of DI) – 2018 and our settled period 2019-2022 but reducing the subject areas to business, management, and accounting; economics, econometrics, and finance; social studies, psychology; decisions sciences; environmental science and multidisciplinary sciences. We have removed all medical, art, energy, and mathematics-related publications to focus on economic and social studies to correctly weigh the physical/mental abilities share within DI, all the rest of the research protocol being unchanged. This new analysis reported 1128 results in the last 4 COVID years (2019-2022) and 476 in the period 1998-2018. The bibliometric software VOSviewer (Visualization of Similarities) with its latest version, 1.6.17 (Van Eck & Waltman, 2021), was utilized to inspect and visualize the *co-occurrence* of keywords, using a *standard full counting method* with *all keywords* as unit of analysis - in order to utilize the actual content of the exported documents to build a resemblance measure map (Zupic & Čater, 2015).

4. Results and discussions

As presented in the methodology and based on the above research protocols, the four expressions: ML (2019-2022 – all fields, all areas; protocol 1), DI (2019-2022 - all fields, all areas; protocol 2.1), DI (2019-2022 – reduced fields, reduced areas; protocol 2.1.1) and DI (1998-2018 – reduced fields, reduced areas; protocol 2.1.2) were processed via VOSviewer and the keywords' co-occurrences are reflected in table 3.

Table 3: Keywords meeting the threshold and total link strength

Searched expressions	Results [WoS]	Number of keywords [VOSViewer]	Keywords meeting the threshold for a minimum number of occurrences of a keyword of 5	Keywords meeting the threshold for a minimum number of occurrences of a keyword of 3	Total link strength
ML (2019-2022 – all fields, all areas; protocol 1)	63	270	4 (N/A)	16 (linked) ✔	
DI (2019-2022 - all fields, all areas; protocol 2.1)	1908	6866	640 ✔	N/A	94250
DI (2019-2022 – reduced fields, reduced areas; protocol 2.1.1)	1128	4026	257 ✔	N/A	18656
DI (1998-2018 – reduced fields, reduced areas; protocol 2.1.2)	476	1312	42 ✔	N/A	979

Source: Author’s analysis /processing based on own data

The keyword co-occurrence network for DI – as per protocol 1 – as reflected by VOSviewer is reflected in Figure 1. According to Paiuc (2021a), the dimension of nodes and words indicates their significance. The larger the node and word, the more weight it has. The distance between two nodes indicates their relationship, so a short distance typically means a stronger one. If a line separates two keywords, that means they are directly related. If the line is thicker, that means they have more co-occurrence, while the same colored nodes are regrouping under a leading theme or cluster. VOSviewer structured the keywords of ML-related publications into four clusters.

The red cluster (Figure 1, cluster 1, center, seven items) gravitates around gender components of DI within ML („male", „female”), while the green cluster (Figure 1, cluster 2, left, five items) represents the”diversity” and „cultural diversity” part of multinational leadership. The third blue cluster (Figure 1, cluster 3, center-up, two items) is focused on core „leadership” and the last yellow cluster (Figure 1, cluster 4, right, two items) regroups the „organizational” and „ counseling” aspects of ML.

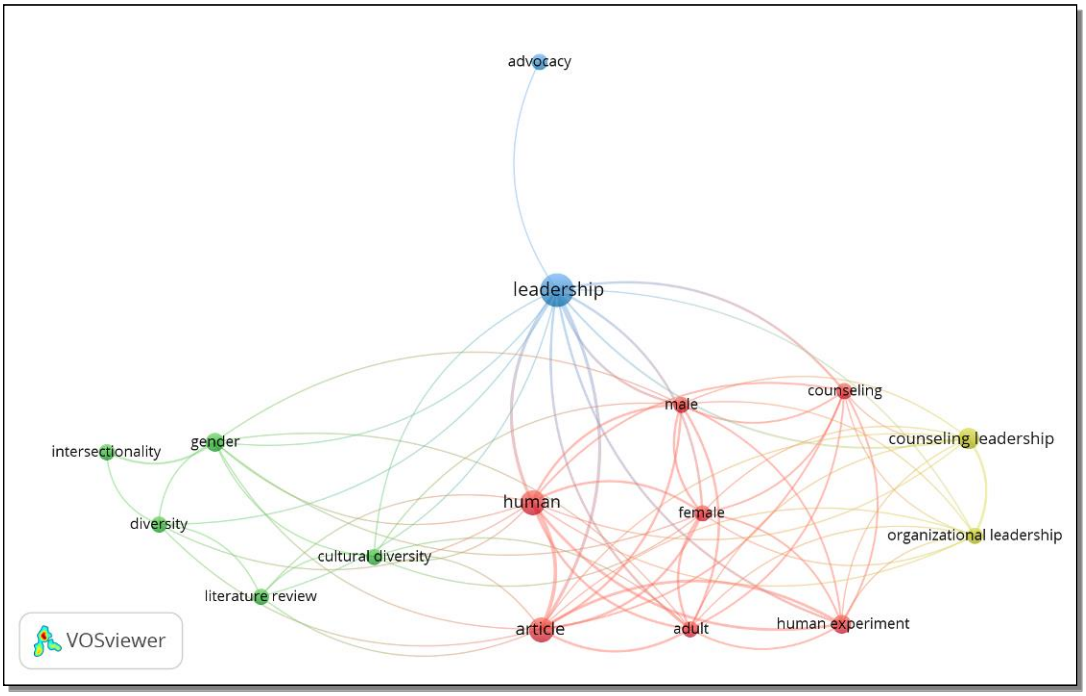

Figure 1: ML: Keyword's co-occurrence matrix-related publications – protocol 1: 2019-2022 - 63 documents with 17 items meeting the threshold of 3 occurrences of keywords -by VOSviewer
Source: Author's analysis /processing based on own data

Considering the above ML's keywords co-occurrences, and, in direct link with the first research question, we found that ML has primary direct strong connections with DI main targeted concepts like "gender" (frequency 4), "male" (frequency 3), „female" (frequency 3), or even "diversity" itself (frequency 3).

Table 4: ML - protocol 2.1: most relevant 17 items by VOSviewer

Position	Keywords	Frequency/ Occurrency	Position	Keywords	Frequency/ Occurrency
1	leadership	13	10	counseling	3
2	human	7	11	organizational leadership	3
3	article	7	12	cultural diversity	3
4	counseling leadership	5	13	literature review	4
5	human experiment	4	14	diversity	3
6	gender	4	15	intersectionality	3
7	male	3	16	advocacy	3
8	female	3	17	Multicultural leadership	3
9	adult	3			

Source: Author's analysis /processing based on own data

The above conclusion is reinforced by the direct links to ML: keyword's co-occurrence matrix of ML-related publications, where the link strength between two nodes refers to the frequency of co-occurrence (Paiuc, 2021a). Diversity and inclusion with keywords: „gender', „male”, „female”, „diversity”, „cultural diversity", and „intersectionality” (Coote *et al.*, 2022)) represent the strongest link to leadership (cumulated links strength 9). Our first research question is answered, and *diversity and inclusion* played the major role in *multicultural leadership* during the last four global pandemic years 2019-2022.
Regarding our second research question: what is the role played by diversity and inclusion in multicultural leadership during the last four global pandemic years? - we will first analyze, thru VOSviewer, the 1908 documents of DI 2018-2022 protocol 2.1 - via the keyword's co-occurrence matrix-related publications map, as reflected in Figure 2.

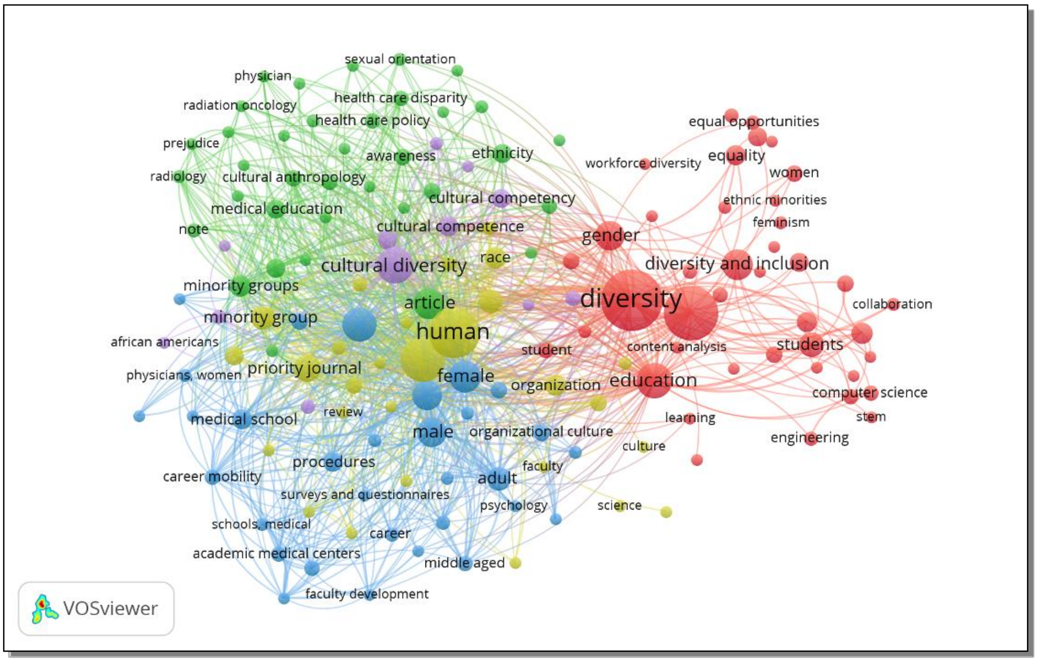

Figure 2: DI: Keyword's co-occurrence matrix-related publications – protocol 2.1: 2018-2022 – 1908 documents - by VOSviewer
Source: Author's analysis /processing based on own data

DI within protocol 2.1: 2018-2022 – has primary direct strong connections with gender outcomes like "female" (frequency 249) and „male” (frequency 216), “leadership” (frequency 160), „organization and management (frequency 63) or “medical education” (frequency 139). Our analysis shows that the *internal dimensions of diversity* within DI – protocol 2.1-2019-2022 - occupy 55% of the cumulated link strengths share (with Race: 8%, Ethnicity: 3%, Gender: 16%, Sexual Orientation: 2%, Age: 1%, Physical/mental abilities: 25%) while the *external dimensions of diversity* account only for 5.5% (with Religion/Spirituality: 0.15%, Geographical location: 3.3%, Educational background: 1% and Work experience: 1%). *Leadership* (together with management and mentoring) represents 7.3%, while its main drivers, according to Bratianu and Paiuc (2022a), account for an extra 5,1% (*cultural intelligence*), 0.3% (*knowledge/ information/ data*) and 6% (*education/ learning/ development*).
As the main driver for DI as per – protocol 2.1: cumulated link strengths - 2019-2022 – is by far the *Physical/mental abilities* (25%), followed by *Gender* (16%) and *Race* (8%), we

wanted to exclude all related medical publications in order to evaluate the real impact of COVID-19 within DI. As per Figure 3 our DI research protocol 2.2.1: 2019-2022 returned 1128 documents with powerful connections with expressions like "female" (frequency 73), „male” (frequency 69), “leadership” (frequency 48), „ education” (frequency 75%) “medical education” (frequency 41) and „race” (frequency 44). *Gender* leads the direct related DI topics (with a 16% share of cumulated links strengths), followed by *Physical/ mental abilities* (12%).

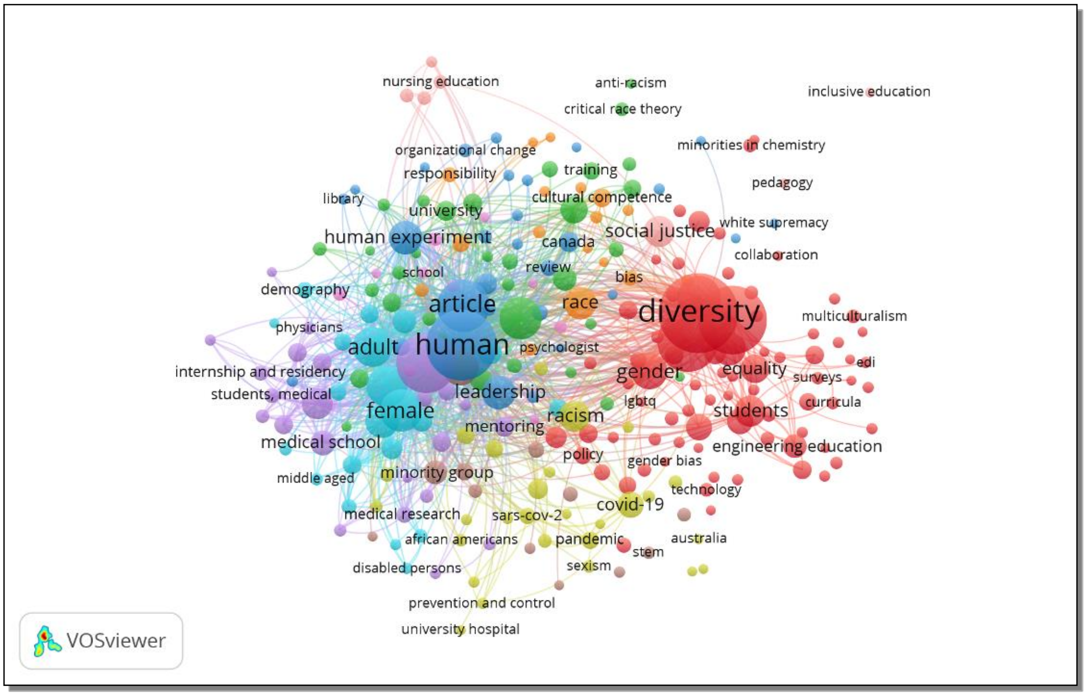

Figure 3: DI: Keyword's co-occurrence matrix-related publications – protocol 2.2.1: 2019-2022 - 1128 documents - by VOSviewer
Source: Author’s analysis /processing based on own data

In order to track the evolution of the DI main factors within time and answer our second research question - we have worked thru VOSViewer the DI: keyword's co-occurrence matrix-related publications map presented in Figure 4 – using protocol 2.2.2 with timespan 1998-2018 and 476 returned documents.

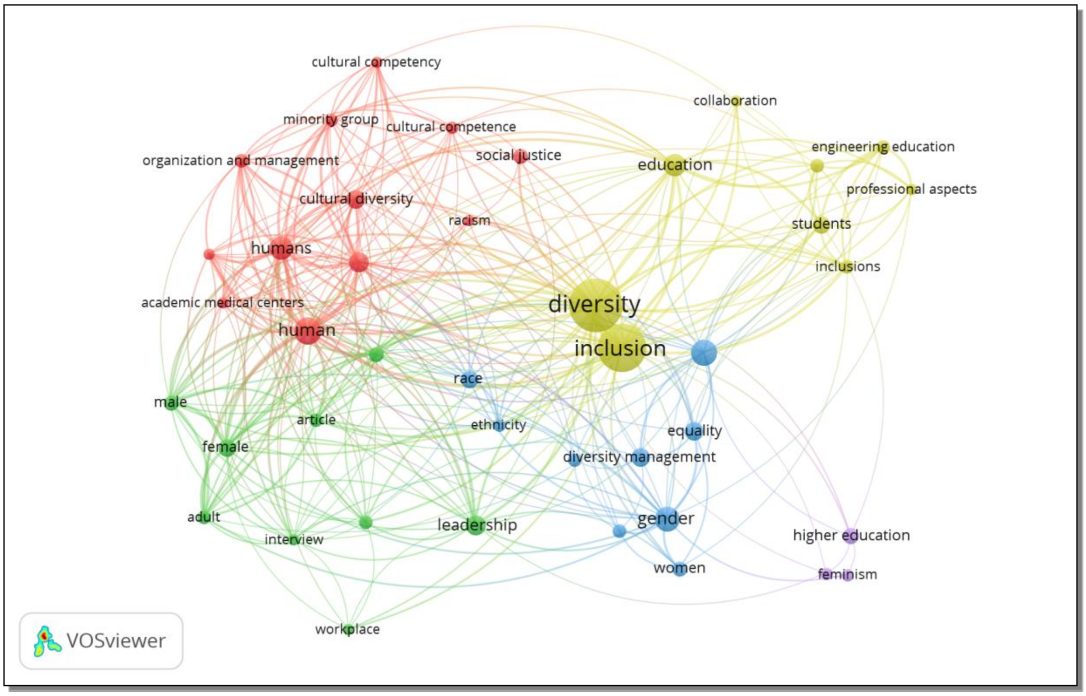

Figure 4: DI: Keyword's co-occurrence matrix-related publications – protocol 2.2.2: 1998-2018 - 476 documents - by VOSviewer
Source: Author's analysis /processing based on own data

The analysis shows that while the internal dimensions of diversity increased their cumulated link strengths share from 32% to 41% during the last 4 COVID years, the external dimensions of diversity kept their 9% weight. On the downward curve - CQ decreased from 14% to a share of 5.3%, while leadership/management/ was reduced from 14% to 8.3%. All in the context of a growth of education/ learning/ development/study/research share from 20% to 33% and of knowledge from zero to 1%.
In the last four COVID-19 years (2019-2022), the DI's biggest priority change within the internal and external dimensions of DI was the extra focus on physical/mental abilities (from a share of 4% within 1998-2018 to 12% in 2019-2022) as its second main important driver. While gender still remains the most important DI motor – its share was reduced from 22% to 16% during the last four years – in conjunction with the increase in health status interest. Race and ethnicity occupy the third position with an increase in weight from a cumulated 6% to 10%, also based on the 2020 escalation of the „black lives matter" movements (Francis & Wright-Rigueur, 2021) related to the killing of George Perry Floyd.

5. Conclusions

This article, backed by the shared bibliometric study, succeeded in answering both research questions and demonstrates that during the last four global pandemic years 2019-2022, *diversity and inclusion* were the most significant vector for *multicultural leadership*, while physical/mental abilities, race and ethnicity, and educational background reshaped the DI's agenda and priorities. With enormous COVID-19 health challenges - affecting both the mental and physical abilities of the employees, DI was forced to change the focus to health handling procedures, that also being reflected by the massive increase of education/ learning/ development/study/research part of DI from 20% to 33%. The focus of DI moved

from gender and geographical location biases to mental and physical abilities priority and from CQ and Leadership to an extensive reinvention based on education, learning, and research. The answer to the first research question shows that during the COVID-19 pandemic the role of diversity and inclusion became more important due to the global dimension of the pandemic. The answer to the second question strengthen the same conclusion: the main intensified drivers of DI and ML were backed by a massive interest grow in the education/ learning/ development as needed agile but forced reinvention of diversity and inclusion. The conclusions should contribute to new multicultural leadership adaptation programs and be a base for future studies regarding the direct correlation between DI, ML, and business performance.
The main limitation of the present research consists in the fact that the study is based on the Scopus database and does not consider other platforms such as Web of Science or Google Scholar.

References

Adams, A., 2022. Dictionary.com Picks "Woman" as 2022 Word of the Year After Searches Doubled Amid "Consequential Moments"'. [online] Available at: https://people.com/human-interest/dictionary-com-woman-is-2022-word-of-the-year-searches-double/.

Bratianu, C., 2007. An Integrated Perspective On the Organizational Intellectual Capital. *Review of Management and Economical Engineering*, 6(5): 107-12.

Bratianu, C., 2019. Exploring Knowledge Entropy in Organizations. *Management Dynamics in the Knowledge Economy*, 7(3): 353-66. https://doi.org/10.25019/MDKE/7.3.05

Bratianu, C., 2020. Toward Understanding the Complexity of the COVID-19 Crisis: A Grounded Theory Approach. *Management&Marketing. Challenges for the Knowledge Society*, 15(S1), 410-23. https://doi.org/10.2478/mmcks-2020-0024

Bratianu, C., Leon, R.D., 2015. Strategies to Enhance Intergenerational Learning and Reducing Knowledge Loss: An Empirical Study of Universities. *VINE Journal of Information and Knowledge Management Systems*, 45(4): 551-67. https://doi.org/10.1108/VINE-01-2015-0007

Bratianu, C., Paiuc, D., 2022a. A Bibliometric Analysis of Cultural Intelligence and Multicultural Leadership. *Review of International Comparative Management*, 23(2): 319-37. https://doi.org/10.24818/RMCI.2022.3.319

Bratianu, C., Paiuc, D., 2022b. A Bibliometric Analysis of Knowledge Dynamics in Managerial Decision Making. *Knowledge*, 2(4): 702-18. https://doi.org/ 10.3390/ knowledge2040040

Bratianu, C., Iliescu, A., Paiuc, D., 2021. Self-Management and Cultural Intelligence as the New Competencies for Knowmads. In F. Bezina Eds. *Proceedings of ECMLG: 17th European Conference on Management, Leadership, and Governance*, Valletta, Malta. 8-9 November 2021, pp. 90-96.

Carrim, N., 2023. Diversity. In R.J. Tierney, F. Rizvi, K. Ercikan Eds., International Encyclopedia of Education, Amsterdam: Elsevier, pp. 1–7. https://doi.org/10.1016/b978-0-12-818630-5.08001-5

Coote, M., Davis J., McHugh A., Jurkovic L.P.C., 2022. Intersectionality. In Education Research in M.P. Moreau Eds. *Encyclopedia of Social Justice in Education*, Vol. 6, Gender and Sexuality, New York: Bloomsbury Pubishing LLC.

Cui, J., Lu J., Yi, G.Y, He, W., 2022. COVID-19 Impact On Mental Health. *BMC Medical Research Methodology*, 22, pp. 1-11. https://doi.org/10.1186/s12874-021-01411-w

Dictionary.com. 2022. DEI. Available at: https://www.dictionary.com.

Francis, M., Wright-Rigueur, L., 2021. Black Lives Matter in Historical Perspective. *Annual Review of Law and Social Science*, 17, pp. 441–458. https://doi.org/10.1146/annurev-lawsocsci-122120-100052

Grogan, M., Dias, S., 2015. Inclusive Leadership and Gender. In G. Theoharis, M. Scanlan Eds. *Leadership for Increasingly Diverse Schools,* New York: Routledge, pp. 123–145. https://doi.org/10.4324/9780429356261-7

Henne, K., 2018. Intersectionality Theory of Gender and Race*. International Encyclopedia of Anthropology*, 1, pp. 1–4. https://doi.org/10.1002/9781118924396.wbiea1814

Janik, A., Ryszko, A., Szafraniec, M., 2021. Exploring the Social Innovation Research Field Based on a Comprehensive Bibliometric Analysis. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(4): 226. https://doi.org/10.3390/joitmc7040226

Kalogiannidis, S., 2020. Covid Impact on Small Business. *International Journal of Social Science and Economics Invention*, 6, pp. 387-391. https://doi.org/10.23958/ijssei/vol06-i12/257

Lorenzo, R., Reeves, M., 2018. *How and Where Diversity Drives Fnancial Performance*. *[online]* Available at: https://hbr.org/2018/01/how-and-where-diversity-drives-financial-performance.

McGhee, H., 2021. *The Sum of Us: What Racism Costs Everyone and How We Can Prosper Together,* 1st Edition, London: One World Publishing.

Mor Barak, M., Cherin, D., Berkman, S., 1998. Organizational and personal dimensions in diversity climate ethnic and gender differences in employee perceptions. *The Journal of Applied Behavioral Science*, 34, pp. 82–104. https://doi.org/10.1177/0021886398341006

Nguyen, A., 2022. Digital inclusion: Social inclusion in the digital age. In P. Liamputtong Eds. *Handbook of Social Inclusion*, Cham: Springer Publishing, pp. 1-13. https://doi.org/10.1007/978-3-030-48277-0_14-1

Olu-Ogunleye, I., Akinbode, J., Ogunleye, O., 2022. Internal Dimensions of Workplace Diversity and Multinational Corporations Sustainability in Nigeria. *Seybold Report*, 17(10): 28–45. https://doi.org/10.5281/zenodo.7152412

Paiuc, D., 2021a. Cultural Intelligence as a Core Competence of Inclusive Leadership. *Management Dynamics in the Knowledge Economy*, 9(3): 363–78. https://doi.org/10.2478/mdke-2021-0024

Paiuc, D., 2021b. Cultural Intelligence as a Main Competency for Multinational Leadership and Global Management. In C. Bratianu, A. Zbuchea, F. Anghel, B. Hrib Eds. *Proceedings of the 9th International Academic Conference Strategica*, 21-23 October 2021, National University of Political Studies and Public Administration, Bucharest, pp. 1079-1089.

Paiuc, D., 2021c. The Impact of Cultural intelligence On Multinational Leadership: A Semantic Review. *Management Dynamics in the Knowledge Economy*, 9(1): 81–93. https://doi.org/10.2478/mdke-2021-0006

Paiuc, D., Iliescu, A.N., 2022. Digital Leadership in the Post-COVID New Knowledge Management Environment. *International Academic Conference Strategica,* 20-21 October 2022, National University of Political Studies and Public Administration, Bucharest, Romania.

Parker, K., Igielnik, R., 2020. On the Cusp of Adulthood and Facing an Uncertain Future: What We Know Aabout Gen Z So Far *Pew Research Center. [online]* Available at: https://www.pewresearch.org/social-trends/2020/05/14/on-the-cusp-of-adulthood-and-facing-an-uncertain-future-what-we-know-about-gen-z-so-far-2/

Rwiza, G., 2019. The Power of Globalization: Concepts and Practices of Diversity and Inclusion in North America. In M.T. Kariwo, N. Asadi, C.E. Bouhali Eds. *Interrogating Models of Diversity Within a Multicultural Environment*, London: Palgrave Macmillan Cham, pp. 217–243. https://doi.org/10.1007/978-3-030-03913-4_12

Thygesen, J., Tomlinson C., 2022. COVID-19 Trajectories Among 57 Million Adults in England: A Cohort Study Using Electronic Health Records. *The Lancet Digital Health*, 4, pp. 542-557. https://doi.org/10.1016/S2589-7500(22)00091-7

Tsusaka, M., Krentz, M., Reeves, M., 2019. The Business Imperative of Diversity, *BCG: The Business Imperative of Diversity. [online]* Available at https://www.bcg.com/publications/2019/winning-the-20s-business-imperative-of-diversity.

Van Eck, N.J., Waltman, L., 2021. VOSviewer 1.6.17 Manual[online] Available at: https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.17.pdf.

Zaman, U., Bayrakdaroglu, F., 2021. Every Storm Will Pass: Examining Expat's Host Country-Destination Image, Cultural Intelligence and Renewed Destination Loyalty in COVID-19 Tourism. *Cogent Business&Management*, 8, pp. 1–18. https://doi.org/10.1080/23311975.2021.1969631

Zupic, I. & Čater, T., 2015. Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3): 429-72. https://doi.org/10.1177/1094428114562629

Bio-notes:

Constantin Bratianu is *Emeritus Professor of Strategic Management and Knowledge Management at the UNESCO Department for Business Administration, Bucharest University of Economic Studies, Romania*. He is the Editor-in-Chief of the international journal *Management Dynamics in the Knowledge Economy*. He published more than 45 books and 200 scientific reference papers. His research focuses on strategic thinking, strategic management, knowledge dynamics and knowledge management.

Dan Paiuc is a *Doctoral student* in Management at the *National University of Political Studies and Public Administration*, and a C-level practitioner within the international retail scene. He focuses on cultural intelligence and knowledge dynamics as main drivers of multicultural leadership has published several papers in prestigious international journals and conference proceedings.

Oradea Journal of Business and Economics, Volume VIII, Issue 1
Published in March 2023

MECHANISMS FOR MANAGING AMBIDEXTERITY IN SMALL AND MEDIUM-SIZED ENTERPRISES: TWO CASE STUDIES IN THE DERMOCOSMETICS SECTOR

Hanane Bougadir*, Mustapha Zahir
Cadi Ayyad University, SAEDD laboratory, Essaouira, Morocco
Bougadirha@gmail.com
zahirmustapha@gmail.com

Abstract: *Innovation is presented as the competitive weapon by which companies respond to the challenges of a dynamic environment. However, devising a strategy that balances the needs for short-term profitability and long-term survival becomes more complex when it comes to small and medium-sized businesses. Their limited resources, both in terms of human capital and financial means, hinder the development of organizational ambidexterity within these structures. The contribution of our qualitative study is manifested through the detection of the mechanisms enabling the SME to respond to the dual requirements of exploitation innovations and exploration innovations, particularly in a turbulent environment. We are therefore interested in the market of dermocosmetic products because it represents a young and growing market. The results obtained from the in-depth analysis of two cases, show that the simultaneous pursuit of these two imperatives is possible under certain conditions. We highlight three prerequisites: The necessity to rethink management and to conduct a new organizational and strategic adaptation process; The promotion of a culture and a social context stimulating ambidextrous behavior; Maintaining strong relationships with stakeholders.*

Keywords: Ambidexterity, Exploitation, Exploration, Adaptation, Innovation, SME.

JEL classification: O30, M10

1. Introduction

The market is increasingly saturated, the lifespan of products is getting shorter and the competition is more aggressive. Innovation then becomes a means of business survival. Henceforth, businesses are required to be ambidextrous, in other words, to combine exploitation activities and exploration activities. Exploitation grants through progressive changes, the ability to continue existing practices while reducing costs. It allows to increase the efficiency of the different processes of an organization to make it more able to face the present. Exploration consists of introducing new ways of doing things in order to seek effectiveness. There is indeed a notion of invention in the proper sense of the term because exploration allows the creation of new products, processes and/or technologies. It exposes the organization to the risk of not being able to use what is discovered and therefore facing more or less significant failures (He and Wong, 2004).

* Coresponding author: Hanane Bougadir
Cite as:
Bougadir, H., and Zahir, M., 2023. Mechanisms for Managing Ambidexterity in Small and Medium-Sized Enterprises: two Case Studies in the Dermocosmetics Sector. *Oradea Journal of Business and Economics*, 8 (1), pp. 52–60, http://doi.org/10.47535/1991ojbe164.

The SME with its unique characteristics represents an interesting field for the in-depth examination of organizational ambidexterity. If large companies have the resources necessary to set up different ways of accessing it, this does not correspond to SMEs whose human, financial and organizational capacities are generally more limited. Through an exclusively qualitative methodology, based on the study of two cases, we explore the mechanisms regulating the tension between the two activities. The problematic is therefore formulated as follows: How does an innovative small and medium-sized enterprise manage to reconcile the requirements of exploitation and exploration?

2. Theoretical framework

The company engages in innovation through two main paths: continuity (exploitation) or rupture (exploration). Continuity in the innovative activity is ensured through continuous improvement of existing products and services through the improvement of knowledge. The rupture in innovative activity is reflected in the creation of new products and services reflecting new knowledge by exploring new perspectives (O'Reilly and Tushman, 2011). According to Bogaert et al. (2020), the conceptual distinction between exploration and exploitation has been the subject of much research since the seminal article by March (1991), both in strategic management and in organizational theory (Gibson and Birkinshaw, 2004; Gupta et al., 2006), in the field of inter-firm cooperation (Kauppila, 2010) and in innovation management (O'Reilly and Tushman, 2004).

These are processes that compete for rare sources and present distinctions and tensions between them. The challenge for a company is how to dedicate enough resources to exploration to ensure its long-term viability and at the same time invest in sufficient exploitation to maintain its current viability. It follows that organizations and managers must, in an appropriate and balanced way, allocate their resources between the two modes of learning. Organizational ambidexterity represents the ability of a company to jointly lead exploitation and exploration innovations (Good and Michel, 2013; Papachroni and Heracleous, 2020).

The current literature did not provide much information about the mechanisms for achieving ambidexterity in SMEs, despite the fact that it represents an interesting unit of analysis. Studies present ambidexterity as a risky strategy when it comes to SMEs, given that it consumes resources and generates organizational tensions (Abebe and Angriawan, 2014; Alcade-Heras et al. , 2019), even more difficult to manage for these companies (Tartea, 2020). Lubatkin et al., (2006) state that although ambidexterity does not guarantee improved performance of the SME, it nevertheless presents a growth vector for the company's revenue compared to its non-ambidextrous competitors.

The existence of a positive link between ambidexterity and performance is recognized in the literature, whether measured subjectively or objectively (Zhang et al., 2016; Severgnini et al., 2018; Ubeda-Garcia et al., 2020). However, authors have insisted on the importance of taking moderators into consideration when studying the relationship between ambidexterity and performance (Junni et al., 2013), particularly in the context of SMEs (Tarody, 2016; Osiyevskyya et al. , 2020). Ambidexterity can be conditioned by:

- The “reference group” to which the company belongs (D’Souza et al., 2017).
- External environmental factors, size and age of the company (Hughes, 2018).
- The existence of an organizational context that encourages individuals to share their time and resources between these two activities called contradictory (Gibson & Birkinshaw, 2004).
- The availability of adequate resources, and openness to the outside through inter-organizational relations, thus allowing the going beyond the traditional boundaries of the company (Saibi, 2016).
- Absorptive capacity (Solís-Molina et al., 2018).

Due to the ambiguity of the business environment, adaptability is a crucial requirement for SMEs. According to Osiyevskyya et al. (2020), “organizations that succeed in dynamic environmental circumstances are ambidextrous, but finding the balance between exploration and exploitation is an extremely difficult managerial challenge”. Entrepreneurs who own SMEs must therefore be aware of the need to combine exploitation and exploration, which is of crucial importance for the success of their businesses (Lubatkin et al., 2006; John Schreuders and Alem Legesse, 2012). However, awareness of the usefulness of ambidexterity within the SME, if it is a necessary condition, is not enough to boost innovation, it would still be necessary to take the appropriate measures should be taken to encourage the coexistence of the two logics of innovation within this type of organization.

Managers in SMEs with fewer hierarchical levels “are much closer to the operational core of the company” (Lubatkin et al., 2006, p. 649), and “play both strategic and operational roles” (Mothe , 2019). The level of integration of the management team, i.e. its collaborative behavior, information exchange and joint decision-making between team members, positively influences the extent to which SMEs pursue an ambidextrous orientation, which itself has a positive impact on their relative performance (Lubatkin et al., 2006).

Saibi (2016) points out that in the context of the SME “the impetus towards ambidexterity can be guided both by top-down initiatives (ambidextrous leadership) with a top-down logic, but also by initiatives carried from bottom-up, with a bottom-up logic (contextual ambidexterity)”. The SME must ensure an optimal combination of "bottom up" and "top down" logics by implementing managerial mechanisms capable of capturing the benefits of both. To ensure interdependence, it is essential to overcome the "top down" and "bottom up" contradiction and thus avoid being locked into a too narrow conception (Saibi, 2016).

3. Empirical framework: study of ambidexterity within innovative SMEs

3.1. Research Methodology:

Our study is based on an exclusively qualitative methodology, relying on a study of two cases (see below). This is justified by the fact that its methods focus on discovering and understanding the experiences, perspectives and thoughts of participants, that is, qualitative research explores meaning, purpose or reality. For data collection, we conducted semi-directive interviews, based on a triangulated interview guide with documentary analyzes and observations on the site. These interviews were recorded and transcribed, so that they can be processed and analyzed by adopting the technique of content analysis.

Table 1: Characteristics of semi-structured interviews conducted**.**

CASE	1	2
Characteristics of the company	SMEs located in Marrakech, Morocco Creation date: 1997 Field of activity: dermocosmetics Has ambidextrous characteristics	SMEs located in Marrakech, Morocco Creation date: 1999 Field of activity: dermocosmetics Has ambidextrous characteristics
No. of interviews	4	4
Interviewees	Founder-strategy consultant Founder - Production Manager Communications and Marketing Manager Chief financial officer	Founder/CEO Commercial manager Production manager Chief financial officer
Average duration	1h – 1h 30 min	
Key investigative elements	- Presentation of the company - Specificities and types of innovations adopted - Resources mobilized - Factors influencing the adoption of an innovation. - Mechanisms for reconciling exploration and exploitation activities. - Difficulties encountered during the implementation of the process	

3.2. Results and Discussion:
We proceed, through the multiple case study conducted, to the discussion of the implementation of ambidexterity within the SME. We emerge with explanations and observations related to the mechanisms for managing the exploitation/exploration dilemma.

3.2.1. Perception of innovation success
Both SMEs agree that through innovation, productivity gains increase. Growth was also and continues to be achieved - especially internationally - and particularly in terms of increased turnover. However, the vision of success differs. The members of the company (1) emphasize the need for the innovation achieved to meet the needs of the consumer. *"It's not enough to innovate, you also have to make sure that the new products correspond to the demand, meet the needs of the consumers"* replies the communication and marketing manager. The members of the company (2) rather evoke the importance of the participation of the accomplished innovation in the financing of the other planned innovations: "*For me, a successful innovation is likely to provide increased internal funding that can be very useful for financing other innovations and that will give our company a competitive advantage*" announces the General Manager & Founder.

3.2.2. Effect of Past Experience
Knowledge accumulates over time and forms repertoires of organizational and dynamic routines. Whether at the level of the manufacturing process or R&D, this accumulation of experience has a very important role in improving innovation capacity. The Strategy Consultant & Founder (company 1) affirms "*Past experience is interesting so as not to make the same mistakes again and improvements must be made so that old practices are efficient and more interesting in the face of a changing context.*" In the same way, the Production

Director & Founder (Company 1) recognizes that "*There are always changes or adjustments to be made. This allows us to improve our credibility and position ourselves against competitors.*". The narratives collected also show that at the level of operating activities, past experience allows them to be improved. It minimizes costs and risks, while refining practices that are based on existing knowledge. The Commercial Director (company 2) draws attention to the fact that: "*An innovation may be attractive, the accumulation of experience will allow the company to identify the risks relating to the regulatory aspect, take advantage of the reputation and improve brand image.* ".

3.2.3. Practices that contribute to develop a culture of innovation

- **Leadership and strategic capabilities:**

Based on the interviews conducted, we confirm the idea of Saibi M. Amokrane (2016) qualifying the leader the "conductor" of ambidexterity. The owner-leaders of the two SMEs rely on listening, collective intelligence, experience, recognition of new ideas, directing attention to new avenues, so that they develop innovative approaches: "*I insist on listening and trust so that employees feel more invested and therefore offer us their own ideas. Also, everyone within the company must know the reason and the interest of their task. Another thing, I think it is essential that the various members also feel entitled to be wrong. When we talk about innovation, we are faced with the risk so it becomes normal that some innovations are doomed to failure, in this case, we must know how to bounce back or rather work on the elements that led to failure to further improve the company.* " Declares the Strategy Consultant and Founder (Company 1)

The leaders of the two companies have a high intellectual level with a high degree of specialty in the field of their activities (PhD in Pharmacy and PhD in Biochemistry). As a result, their explicit determination to prioritize innovation in the development strategy of their companies and to face the risks with methodology. This is a living situation of the postulate of Souitaris, (2001) concerning the impact of Leadership on the implementation of an innovative project. Their training in foreign university laboratories (France) where research is supported by companies and multinationals with high involvement in R&D, has in fact reinforced their ability to valorize the results of their explorations. The contact from a young age with prospectors of exploitable research patents has probably awakened in them an entrepreneurial spirit and a sense of opportunity. However, the respective ages of the owner-leaders (55 years old and 64 years old) do not seem to negatively influence their risk-taking tendency, contrary to the hypothesis of Matta and Beamish (2008). This may be due to the fact that the two firms are relatively young (24 and 21 years old) and therefore the leader's seniority is not very long. As such, both leaders are still under the impulse of the beginning of a term of office, where the leader is more likely to propose improvements or even metamorphoses in accordance with the postulate of Sanyal and Bulan (2010).

- **Valorization of human capital:**

In the second case studied, the SME found itself in the need to resort to HR experts to set up a cultural system favorable to innovation and technology. This system is based on the interest given to the staff. It focuses on customers, shareholders, individuals, employee qualification processes, their training and the communication between them and managers. To be able to continue to innovate, and create a culture of innovation, it followed a perspective based on segmentation based on the research of customer needs and their priorities. The company has taken a step back to listen to its customers, analyze their desires and find out why they choose or not its products. However, all this presupposes the presence of motivated and competent personnel. The Marketing Manager (company 2) confirms "*Understanding the needs of customers is not given to everyone... get a customer to perceive clearly the added value of a new product that is not yet proven, is a professionalism*". This professionalism is based on a prerequisite: information monitoring: "

we must keep informed of what is being done in the world concerning our field of activity" General Manager & Founder (Company 2). This monitoring strategy has led to the search for the best in terms of market experience.

- **Adaptability and flexibility of the human resources:**

The study also allowed us to observe that engineers and technicians are involved in several projects, in parallel, by organizing themselves in project mode with small collaborative teams whose members are chosen for their skills. Indeed, because of its size and the versatility of its employees, the two innovation strategies of exploitation and exploration are in this case integrated in the same set so that the same person can, so that the same person can engage in both logics. The results show the importance of collective intelligence and continuous training which allows a better learning process in order to capitalize on past mistakes, especially on the estimation of time and cost during the elaboration of the when developing specifications, and to broaden skills in order to develop new solutions. Indeed, the two SMEs have reorganized their structures towards more flexibility, through a series of innovations, in order to be able to respond to possible changes in the environment. For example, following the multiple constraints caused by the COVID19 pandemic, the SMEs studied went through a period of mechanical organizational form (very centralized and hierarchical) to an organic organizational form (low degree of formalization, great flexibility). The results show that the size of the firm does not seem to decelerate innovation as stated by Becheikh et al, (2006). It is the nature of the activity that is imposing.

3.2.4. The influence of the company's external environment

The literature refers to the term "relationship capital" to designate to the organization's reputation and customer loyalty. Researchers (Mom et al., 2015; Mubarik et al., 2016) explain it as a mix of different relationships such as market relationships, power relationships, and cooperation. "*Sometimes you have to go outside the company for solutions, ideas, skills, knowledge, etc. Innovation is the business of many, so we can rely on innovation supporting organizations, universities, other companies, customers or suppliers, ..."* says the Strategy & Founder Consultant (company 1). A view that is consistent with the postulate of Perri et al., 2017. According to Mubarik et al, (2019), improving relations with suppliers and customers helps the organization not only to exploit the market (exploitation) but also to develop new market trends (exploration). Moreover, the Commercial Manager (Company 2) draws attention to the fact that, "*An innovation may be attractive, the accumulation of experience will allow the company to identify risks related to the regulatory aspect, benefit from the reputation and improve the brand image*."

The study allowed us to observe that the Dermocosmetics sector is dynamic, unpredictable and uncertain, therefore it requires more innovations. On the other hand, this sector is characterized by a complex and strict regulation. The interviewees insist, for example, on the constraint to be permanently in conformity with the quality standards for reasons of safety and guarantee for the consumer. Moreover, the two companies have been certified in different ways and on several occasions. One has the ECO CERT, VEGAN, Halal and ISO 22716 certifications. The other has ECO CERT, ISO 22716 and NAHO certifications. These certifications are causing profound organizational changes in both entities. This pushes them, at each takeover, to radically redefine their practices and internal processes. From this point of view, both companies are continuously establishing contextual innovation.

Conclusion:

To define, innovation is not straightforward in view of the different variants that often overlap with different impacts on markets, technologies, customer habits, etc. Each firm has its own vision of innovation. This article explores in the field the mechanisms for the implementation of ambidexterity within the SME.

We retain the empirical results below, which may have relevance for different countries and also represent an answer to our problematic:

1. We affirm the key role of the owner-leader in managing the exploitation and exploration requirements within the SME. On the one hand, the level of diploma and experience greatly contributes to the design, implementation and maintenance of innovation activities. Lifelong training is an excellent alternative. On the other hand, the leader must be able to allow a certain freedom of action and tolerance for error, so as not to restrict not only the potential for creativity and innovation of his collaborators, but also their desire to engage.
2. Product innovation is at the core of the development strategies of dermocosmetics brands. It allows them to strengthen their brand image (new assets), to adapt to new consumer trends (new ranges) and to justify price increases (renewed formulations). It is a dynamic and uncertain environment, with quite complex regulations. To survive in this environment, it is important to establish relations and collaborations with customers, suppliers, universities or research centers. In other words, when resources are limited, it is preferable for a SME to prioritize network ambidexterity, i.e. exploration and exploitation partnerships, above structural ambidexterity.
3. SMEs operating in turbulent environments can become ambidextrous by adopting an organic management structure at the top of the company, based on different responsibilities assumed simultaneously by a restricted group of flexible managers, instead of having each, as often, responsibility for a single activity; and to combine it with a very structured type of mechanistic organization at the operational level.

However, it should be noted that our research also has limitations that do not affect its results but reduce their scope. A first limitation is methodological and stems from the fact that our research was conducted on two cases of SMEs. This limits its external validity, which is why the sample should be enlarged to give more credibility to the results. The model developed could, for example, be enriched in the context of subsequent qualitative research in other areas of activity. It could also open up the possibility of being tested on a large sample of SMEs to validate or invalidate its assumptions.

References

Abebe, M.A., Angriawa, A., 2014. Organizational and Competitive Influences of Exploration and Exploitation Activities in Small Firms. *Journal of Business Research*, 67(3): 346-353. https://doi.org/10.1016/j.jbusres.2013.01.015

Alcalde-Heras, H., Iturrioz-Landart, C., Aragon-Amonarriz, C., 2019. SME Ambidexterity During Economic Recessions: the Role of Managerial External Capabilities. *Management Decision*, 57(1): 21-40. https://doi.org/10.1108/MD-03-2016-0170

Becheikh, N., Landry R., Amara, N., 2006. Strategic Factors Affecting Technological Innovation in Manufacturing SME's. *Canadian Journal of Administrative Sciences*, 23(4): 275-300. https://doi.org/10.1111/j.1936-4490.2006.tb00608.x

Birkinshaw, J., Gibson, C., 2004. Building Ambidexterity Into an Organization. *MIT Sloan Management Review,* 45(4): 47-55.

D'Souza, D., Sigdyal, P., Struckell, E., 2017. Relative Ambidexterity: A Measure and a Versatile Framework. *Academy of Management Perspectives,* 31(2): 124-36. https://doi.org/10.5465/amp.2016.0020

García-Ubeda, M., Claver-Cortés, E., Marco-Lajara, B., Zaragoza-Sáez, P., 2020. Toward a Dynamic Construction of Organizational Ambidexterity: Exploring the Synergies Between

Structural Differentiation, Organizational Context, and Interorganizational Relations. *Journal of Business Research,* 112, pp. 363-372. https://doi.org/10.1016/j.jbusres.2019.10.051
Gibson, C., Birkinshaw, J., 2004. The antecedents, Consequences and Mediating Role of Organizational Ambidexterity. *Academy of Management Journal*, 47(2): 209-26. https://doi.org/10.2307/20159573
Good, D., Michel, E.J., 2013. Individual Ambidexterity: Exploring and Exploiting in Dynamic Contexts. *The Journal of Psychology: Interdisciplinary and Applied*, 147(5): 435-53, https://doi.org/10.1080/00223980.2012.710663
He, Z., Wong, P., 2004. Exploration and Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15, pp. 481-494. https://doi.org/10.1287/orsc.1040.0078
Hughes, M., Rigtering, J.P.C., Covin, J.G., Bouncken, R.B., Kraus, S., 2018. Innovative Behaviour, Trust and Perceived Workplace Performance. *British Journal of Management*, 29(4): 750-68. https://doi.org/10.1111/1467-8551.12305
Schreuders, J., Legesse, A., 2012. Organizational Ambidexterity: How Small Technology Firms Balance Innovation and Support Technology. *Innovation Management Review*, 2(2): 17-21.
Junni, P., Sarala, R.M., Taras, V., Tarba, Y., 2013. Organizational Ambidexterity and Performance: A Meta-Analysis. *Academy of Management Perspectives,* 27(4): 299-314. https://doi.org/10.5465/amp.2012.0015
Kauppila, O.P., 2010. Creating Ambidexterity by Integrating and Balancing Structurally Separate Interorganizational Partnerships. *Strategic Organization*, *8*(4): 283-312. https://doi.org/10.1177/1476127010387409
Lubatkin, M.H., Simsek, Z., Ling, Y., Veiga, J.F., 2006. Ambidexterity and Performance in Small-to Medium-Sized Firms: The Pivotal Role of Top Management Team Behavioral Integration. *Journal of Management*, 32(5): 646-72. https://doi.org/10.1177/0149206306290712
Matta, E., Beamish, P.W., 2008. The Accentuated CEO Career Horizon Problem: Evidence From International Acquisitions. *Strategic Management Journal*, 29(7): 683-700. https://doi.org/10.1002/smj.680
Mom, T.J..M., Fourné, P.L., Jansen, J.J.P., 2015. Managers' Work Experience, Ambidexterity, and Performance: The Contingency Role of the Work Context, December 2015. *Human Resource Management*, 54(S1): 133-53. https://doi.org/10.1002/hrm.21663
Mothe, C., Bogaert, J.C., 2019. Adaptive Ambidexterity and Dynamic Environment: Longitudinal Study of an SME International management = International management = Gestión internacional, HEC Montreal and Paris Dauphine University, To be published. ffhalshs-02376305f
Mubarik, S., Chandran, V.G.R., Devadason, E.S., 2016. Relational capital quality and client Loyalty: Firm-level Evidence from Pharmaceuticals, Pakistan. *The Learning Organization*, 23(1): 43-60. https://doi.org/10.1108/TLO-05-2015-0030
Mubarik, S., Naghavi, N., Mubarik, M.F., 2019. Governance-Led Intellectual Capital Disclosure: Empirical Evidence from Pakistan. *Humanities and Social Sciences Letters*, 7 (2): 141-55. https://doi.org/10.18488/journal.73.2019.73.141.155
O'Reilly, C.A., Tushman, M.L., 2011. Organizational Ambidexterity in Action: How Managers Explore and Exploit. *California Management Review*, 53(4): 5-22. https://doi.org/10.1525/cmr.2011.53.4.5
Osiyevskyy, O., Shirokova, G., Ritala, P., 2020. Exploration and Exploitation in Crisis Environment: Implications for Level and Variability of Firm Performance. *Journal of Business Research,* 114, pp.227-239. https://doi.org/10.1016/j.jbusres.2020.04.015
Papachroni, A., Heracleous, L., 2020. Ambidexterity as Practice: Individual Ambidexterity Through Paradoxical Practices. *The Journal of Applied Behavioral Science,* 56(2): 143-65. https://doi.org/10.1177/0021886320913048

Perri, A., Scalera, V. G., Mudambi, R., 2017. What Are the Most Promising Conduits for Foreign Knowledge Inflows? Innovation Networks in the Chinese Pharmaceutical Industry. *Industrial and Corporate Change*, 26(2): 333-55. https://doi.org/10.1093/icc/dtx004

Saibi, M.A., 2016. Towards a Model of Ambidexterity Within SME's: Lessons From a Case Study, *Gestion 2000*, 33(1): 53-84. https://doi.org/10.3917/g2000.331.0053

Severgnini, E., Vieira, V.A., Galdamez, E.V.C., 2018. The Indirect Effects of Performance Measurement System and Organizational Ambidexterity on Performance. *Business Process Management Journal*, 24(5): 1176-99. https://doi.org/10.1108/BPMJ-06-2017-0159

Solís-Molina, M., Hernández-Espallardo, M., Rodríguez-Orejuela, A., 2018. Performance Implications of Organizational Ambidexterity Versus Specialization in Exploitation or Exploration: The Role of Absorptive Capacity. *Journal of Business Research*, 91, pp. 181-194. https://doi.org/10.1016/j.jbusres.2018.06.001

Souitaris, V., 2001. Strategic Influences of Technological Innovation in Greece. *British Journal of Management*, 12(2): 131-47. https://doi.org/10.1111/1467-8551.00190

Tarody, D., 2016. Organizational Ambidexterity as a New Research Paradigm in Strategic Management. *Budapest Management Review*, 47(5): 39-52. https://doi.org/10.14267/VEZTUD.2016.05.04

Tartea , 2020. The Impact of Ambidexterity On the Risks Incurred by SME's: Analysis of the Relationship Between Ambidexterity and Risk in SME's According to Their Stage and Mode of Development. *Doctoral thesis in Management Sciences.*

Bio-notes:

Hanane BOUGADIR holds a Master's degree in Management and Strategy of Organizations. She is currently a doctoral student in management sciences at Cadi Ayyad University (Morocco). She has developed an interest in the application of the concept of organizational ambidexterity and in the qualitative data analysis methods. Selected by the "Eugen Ionescu" and "Erasmus+" programs, she benefited from scientific stays at the University of Oradea (Romania) and Sevilla (Spain). She participated in international conferences where she presented the results of her studies applied to the dermo-cosmetic field.

Mustapha ZAHIR is a Professor of Management at the Essaouira School of Technology, Cadi Ayyad University. His main research work is about the dynamics of subcontracting relationships, knowledge transfer and innovation practices in SMEs. He is an active member of the "Sciences Applied to Environment and Sustainable Development (SAEDD)" Laboratory and Vice-President in charge of studies and research projects at the International Center for Research and Capacity Building (CI2RC).

USING THE SERVQUAL MODEL TO ASSESS SERVICE QUALITY OF INTERNET SERVICE PROVIDERS: EVIDENCE FROM JORDAN

Omar Salem*, **Marietta Kiss**
University of Debrecen, Faculty of Economics and Business, Institute of Marketing and Commerce, Debrecen, Hungary
salem.omar@econ.unideb.hu
kiss.marietta@econ.unideb.hu

Abstract: *The Internet service sector is characterized as extremely competitive, so Internet service providers have to seek to offer high-quality services to customers. This study aimed at measuring the gap between the expectations and perceptions of customers about the service quality of Internet service providers in Jordan. Data was gathered by surveying 405 customers of Internet service providers in Amman (Jordan) using the snowball sampling technique through social media. To reveal service quality, the questionnaire contained five dimensions of the original SERVQUAL model complemented by two additional dimensions by which gaps between customers' expectations and perceptions could be measured, then, the Expectation–Experience Analysis (EEA) has been used. The results show that there is a perceptual gap between customers' expectations and their actual experience of the Internet service delivered to them by Internet service providers in Jordan attributed to all seven factors of the service quality.*

Keywords: SERVQUAL, service quality, expectations, perceptions, Internet service providers, Jordan

JEL classification: M31

1. Introduction

Quality is arguably the most important and crucial aspect of any business strategy. It is a source of struggle for businesses, a source of desire for customers, and a source of renewal for markets. According to some researchers, the single most important determining factor in a company's long-term performance is service quality (Alter, 2010; Ali et al., 2018). Because the customer's perception of the company's services is so important, service quality has always been a deciding element for successful businesses (Hizam and Ahmed, 2019).

Parasuraman and others (1985, 1988) proposed five factors of service quality (reliability, responsiveness, assurance, tangibles, and empathy), which have since become widely utilized in measuring the quality of service in a variety of businesses in the form of the so called SERVQUAL model. Managers have attempted to use the SERVQUAL instrument in measuring consumer perceptions of service quality and finding the gap between the expected and perceived service quality using these five dimensions. Because it is based on customers' values and beliefs, which may vary from one individual to another and from one

* Coresponding author: Omar Salem

Cite as:

Salem, O., and Kiss, M., 2023. Using the Servqual Model to Assess Service Quality of Internet Service Providers: Evidence from Jordan. *Oradea Journal of Business and Economics*, 8 (1), pp. 61–71, http://doi.org/10.47535/1991ojbe165.

culture to another, the relative importance of each dimension of the SERVQUAL model is subjective and relativistic (Furrer et al., 2000). The study of Harfoush and others (2018) suggested two additional service quality factors, which are specified to the telecommunication sector. These two factors are communication and network quality.
According to Statista (2021), the number of Internet users around the world is roughly 4.66 billion that indicates the Internet service is a fundamental component of meeting everyday needs and plays a critical part in human existence. Jordan's telecom and Internet sector is fiercely competitive and fast expanding. It is developing and expanding continuously, and it is still the most competitive telecom and Internet sector in the Middle East area (Alnsour et al., 2014). That is because the Jordanian government encourages the broadest possible access to affordable communications and Internet services. The Jordanian government is working to open up the telecommunications industry to competition, and the private sector is strongly encouraged to engage and invest in the development of this vital service sector (Alnsour et al., 2014). According to Obeidat (2022), eight internet service providers exist today. The primary supplier of the internet server is the national information center (NIC). It offers training sessions and workshops on how to use optical fibers and other methods. Numerous governmental institutions can access leased lines and ADSL thanks to it, and it delivers 5G service. Recently, 89% of people utilize the internet. The utilization of the 4G and 5G networks is responsible for this surge. It is considered to be a significantly greater increase when compared to other Arab countries.
The study has three main goals. Firstly, we assess customers' expectations about Internet service providers' service quality. Second, we examine their actual experience (perceptions) of service quality about Jordanian Internet service providers. The confirmation/disconfirmation approach is then used to determine whether there is a significant gap between customers' expectations and perceptions of the quality of Internet services provided to them. Then, the study aims at submitting recommendations to the Internet service providers depending on the results.

2. Literature review

Customers compare the service expected to what is really received after making a purchase, according to Lovelock and Wright (2007). They make decisions about how satisfied they are with service delivery and outcomes, and they form opinions about quality. From the standpoint of an organization, service quality, according to Futrell (2008), entails setting standards and specifications. If businesses want a delighted customer to keep using their services, they must give exceptional service quality.
SERVQUAL has been widely recognized and utilized in the domain of service quality measurement in several sectors since it was proposed by Parasuraman and others (1985, 1988). SERVQUAL was first developed in 1985, based on a series of research by Parasuraman and colleagues, who defined service quality as the difference between customer expectations and perceptions. The positive or negative gap views the level of customer satisfaction as a result of the difference between their expectations and the actual perceptions (Parasuraman et al., 1988). The gap is positive when the expectations fall short of perceptions, and it is negative when the perceptions are less than expectations. There are five factors that formulate the SERVQUAL model: tangibility, which is classified regarding the equipment, facilities, and material that have to give a positive image of the company, also, it includes the employees' appearance (Brink & Berndt, 2010); reliability, i.e., the ability to provide consistent and right service, some institutions have a proclivity to oversell their services, resulting in lofty promises that understate their true potential; responsiveness, which is the willingness to assist and respond to the demands of consumers; assurance, which focuses on employees' ability to instill confidence and trust in customers; and

empathy, which refers to the extent to which caring individualized service is given (Yeo, 2008).
These factors represent the 5 gaps in the SERVQUAL model proposed by Parasuraman and others (1985) as shown in Figure 1.

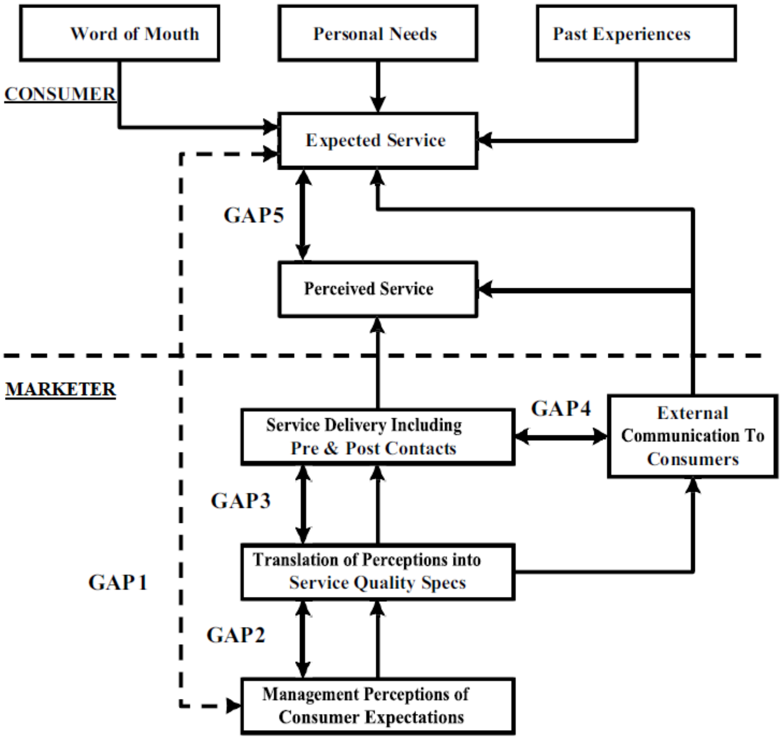

Figure 1: SERVQUAL gaps proposed by Parasuraman, A., Zeithaml, A. & Berry, L. (1985)

According to Parasuraman and others (1985), the first gap is caused by discrepancies in how a generating entity (service providers) views the demands of customers compared to what customers expect. Marketing analysis conducted by a specific business has an impact on the gap's size. The second discrepancy has to do with the inconsistency between the service's theoretical underpinnings and its real attributes. The management's dedication to service quality issues, goal-setting, task standardization, and opportunity perception all have a role in how large this difference will be. The next gap which is the third one is comprised of differences between the services rendered and the specifics pertaining to their construction. The degree to which this gap exists is determined by teamwork, as well as employee-to-task matching, technology, the perception of control, and the system for monitoring and controlling behavior. The discrepancy between service that was promised and actually provided is the fourth inconsistency. Horizontal communication and inflated promise tendencies both have an impact on the size of this disparity. The fifth and final gap—the discrepancy between the customer's expectations and what he/she actually receives—is an outcome of the previous gaps.
In their study, Harfoush and his colleagues (2018) proposed two additional service quality factors that are exclusive to the telecommunications industry. Communication focuses on the quality of communication between customers and company, and network quality, which is relevant to the quality of the Internet and compensation when the Internet service is interrupted.

In addition to the SERVQUAL model, the expectation–experience gap in Internet service providers in Jordan and Hungary can be found using the Importance–Performance Analysis (IPA) method introduced by Martilla and James (1977). Although straightforward, the IPA technique is an effective method for detecting problems with service quality that need strategic corrective steps (Chu & Choi, 2000). According to Deng (2008), the IPA technique measures the degree of service factors between importance and satisfaction in the process of service innovation. For managers' service quality improvement projects, Gemmel (2007) said that the IPA technique produces great service quality and high customer satisfaction. Leong (2008) evaluated the quality of airline service using the IPA method. The core premise of the IPA technique is that consumers' assessment of the actual services they received (performance) and their expectations of a service provider are the major factors in determining how satisfied they are with the service attributes. It necessitates documenting respondents' service encounter expectations as well as their actual service experience. When applying the (IPA) method using the SERVQUAL model, the formula of the analysis becomes the expectation–experience Analysis instead of the Importance–Performance Analysis. The Expectation–Experience Analysis (EEA) grid is depicted in Figure 2 and was adapted from Chu and Choi (2000).

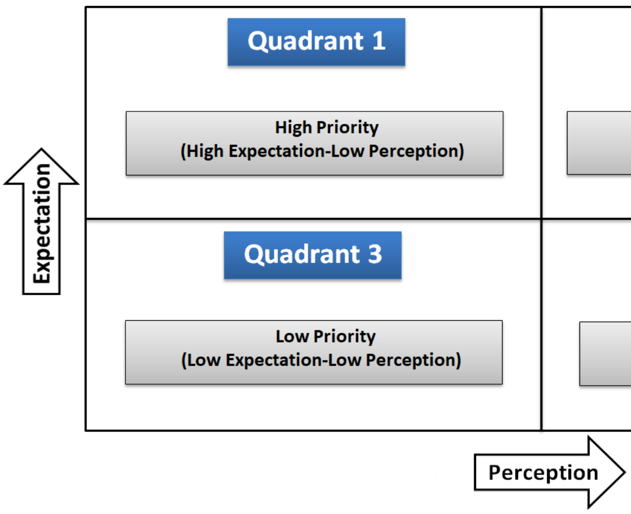

Figure 2: Expectations –Experience Analysis Grid adapted by Chu and Choi (2000, 365)

Depending on the explanation of Chu and Choi (2000) and Dsilva and others (2020), quadrant one "high priority" refers to that experience levels are not particularly high. This makes it clear that this is where the focus of any enhancement efforts should be. Quadrant two "keep up the good work" indicates to customers have high expectations, and the business also appears to perform at a high level in these tasks. Keep up the good work, is the message being sent here. In quadrant three "low priority", consumer attitudes and expectations are low. Managers should not be very concerned even though performance levels in this cell may be poor because the attribute in this cell is not thought to be very relevant. This low-priority cell should only receive a small number of resources. Regarding quadrant four "possible overkill", this cell has low-importance, but comparatively high-performance and properties. Although respondents are happy with the organization's performance, managers should question whether current efforts to improve this cell's characteristics are being overused.

3. Methodology

The primary goal of this study is to analyze the gaps between the expectations and perceptions of customers toward the service quality of Internet services in Jordan. Seven factors of the expanded SERVQUAL model (tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality) have been used to measure the differences between the expectations and perceptions. Then, the Expectation–Experience Analysis (EEA) grid has been used in order to segment the items and determine their positions in the grid and provide recommendations based on their positions.
A quantitative technique using a questionnaire as a research tool was employed to attain the current study's goals. Customers having Internet contracts with Internet service providers in Amman City, Jordan's capital, were the subjects of this study, which included a sample of 405 customers. The data was gathered through the use of a Google form questionnaire on social media platforms during the period of January and February 2022, using a snowball sampling technique.
The questionnaire was divided into two sections. The first one was based on Parasuraman and others' (1988) five-dimension SERVQUAL model expanded by two additional dimensions identified by Harfoush and his colleagues (2018). Customers' expectations and perceptions of Internet service providers were measured by 27 statements using seven-point Likert scales (see App. A). Then, in section two, respondents were asked to provide some personal information.
Table 1 shows the respondents' demographic characteristics, which includes gender, age, educational level, vocation, Internet service provider, and subscription period.

Table 1: Characteristics of the sample

Demographic profile	Frequency	Percentage
Gender		
Male	166	41%
Female	239	59%
Total	405	100%
Age		
18-25 years	42	10.4%
26-33 years	72	17.8%
34-40 years	145	35.8%
More than 40 years	146	36.0%
Total	405	100%
Educational level		
Secondary school and less	18	4.4%
Diploma[1]	43	10.6%
Bachelor	255	63%
Postgraduate[2]	89	22%
Total	405	100%
Vocation		
Private sector employee	201	49%
Without work	82	20.2%
Public sector employee	73	18%

[1] In middle east Arab countries, the diploma degree means studying two years before studying the bachelor degree, those who got low marks in secondary school study this degree.
[2] Master and PhD degree together.

Self-work	40	9.9%
Day laborer	9	2.2%
Total	405	100%
Internet service provider		
Orange	152	37.5%
Zain	133	32.8%
Umniah	80	19.8%
Almawared	10	2.5%
Mada	10	2.5%
AlMutakamila	8	2.0%
Damamax	7	1.7%
Etisalat	5	1.2%
Total	405	100%
Period of subscription		
Less than 1 year	35	8.6%
1-5 years	211	52.1%
More than 5 years	159	39.3%
Total	405	100%

4. Results

4.1 Reliability analysis

The degree to which scale-items are dependable in producing consistent outcomes is measured by reliability analysis (Kumar, 2002; Zikmund, 1997). We utilized Chronbach's Alpha test, which looks at how reliable a set of items is in measuring a single latent variable (Guilford, 1978). Results indicated that values are higher than 0.90 for the 'expectations' to all service quality factors (i.e., tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality). Regarding 'perceptions', the values are ranging from 0.80 to 0.96. Therefore, the test revealed that the scale-items used in this research were reliable (see Table 2).

4.2 Perceptions–Expectations Gap

In order to discover the gaps between customers' expectations and perceptions and whether the gap is positive or negative, we compared the mean scores of the 27 items applying an 'item-by-item' and 'factor-by-factor' analysis.
As illustrated in Table 2, the general result is that customers of Internet services are unsatisfied with the service they receive. The study hypotheses were tested using the paired-sample t-tests, and the results indicate that all the means of expectations are significantly higher than the means of perceptions ($p \leq 0.01$). The biggest gap is for item N2 by -1.1802, which means that the compensations provided by the company when the Internet service is interrupted is weak, while item T3 has the lowest gap of -0.1407, which indicates that the expectations of a decent and good appearance of employees are relatively well met. As for factors, all seven factors have negative differences between the customers' expectations and perceptions, ranging from -0.2784 for assurance to -0.9259 for network quality; all gaps are significant at $p \leq 0.001$. As a result, we can conclude that there are significant differences between customers' expectations and perceptions of the Internet service offered to them by Internet service providers in Jordan, thus we accept the alternate hypotheses for all factors (tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality).

Table 2: Mean scores of customers' expectations and perceptions, gap score, p-value, and Cronbach's Alpha (N=405)

Variable	Mean (perceived)	Mean (expected)	Gap score	p-value	Cronbach's Alpha
Tangibility	**4.7864**	**5.0877**	**-0.3013**	**<0.001**	**E: 0.959; P: 0.951**
T1	4.5333	5.1605	-0.6272	<0.001	
T2	4.9185	5.1136	-0.1951	<0.001	
T3	5.0247	5.1654	-0.1407	<0.001	
T4	4.6691	4.9111	-0.2420	<0.001	
Reliability	**4.5778**	**5.0291**	**-0.4513**	**<0.001**	**E: 0.972; P: 0.963**
R1	4.4741	5.1210	-0.6469	<0.001	
R2	4.6247	5.0296	-0.4049	<0.001	
R3	4.5975	5.0716	-0.4741	<0.001	
R4	4.5852	5.0617	-0.4765	<0.001	
R5	4.6074	4.8617	-0.2543	<0.001	
Responsiveness	**4.7099**	**5.0975**	**-0.3876**	**<0.001**	**E: 0.968; P: 0.967**
Rs1	4.6741	5.1432	-0.4691	<0.001	
Rs2	4.7185	5.0938	-0.3753	<0.001	
Rs3	4.7852	5.1062	-0.3210	<0.001	
Rs4	4.6617	5.0469	-0.3852	<0.001	
Assurance	**4.9043**	**5.1827**	**-0.2784**	**<0.001**	**E: 0.969; P: 0.950**
A1	4.9309	5.2370	-0.3061	<0.001	
A2	5.1235	5.2815	-0.1580	0.001	
A3	4.8840	5.1506	-0.2666	<0.001	
A4	4.6790	5.0617	-0.3827	<0.001	
Empathy	**4.7867**	**5.1269**	**-0.3402**	**<0.001**	**E: 0.972; P: 0.968**
E1	5.0864	5.2370	-0.1506	0.003	
E2	4.8049	5.1481	-0.3432	<0.001	
E3	4.7210	5.0617	-0.3407	<0.001	
E4	4.7284	5.1037	-0.3753	<0.001	
E5	4.5926	5.0840	-0.4914	<0.001	
Communication	**4.7984**	**5.1539**	**-0.3555**	**<0.001**	**E: 0.973; P: 0.935**
C1	4.9407	5.1605	-0.2198	<0.001	
C2	4.8000	5.1679	-0.3679	<0.001	
C3	4.6543	5.1333	-0.4790	<0.001	
Network quality	**4.1568**	**5.0827**	**-0.9259**	**<0.001**	**E: 0.924; P: 0.883**
N1	4.5210	5.1926	-0.6716	<0.001	
N2	3.7926	4.9728	-1.1802	<0.001	

Notes: E=expectations, P=perceptions.

Then, by transferring the expectation and experience results at the item level to the EEA grid, as illustrated in Figure 3, it was possible to identify service quality features at the item level that require adjustment. The Y-axis displays consumers' expectations for the service quality of Internet service providers, while the X-axis displays customers' experiences with Internet service providers. The four quadrants were constructed using the highest, lowest, and average mean scores for expectations and experience at the item level. Figure 3 represents the Expectations–Experience Analysis (EEA) grid.

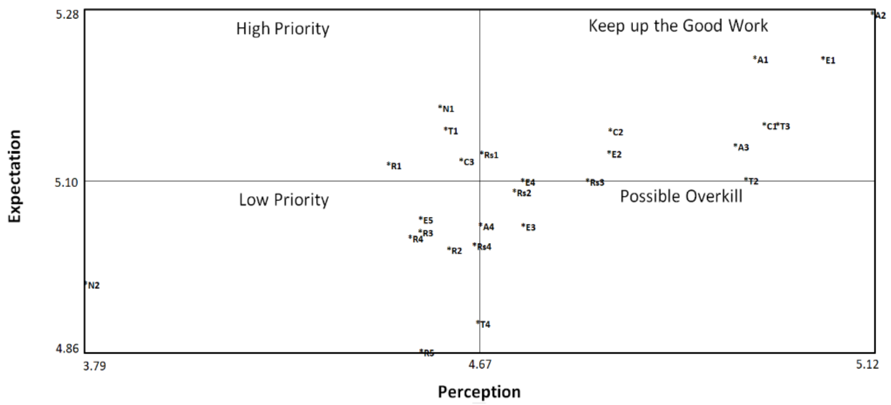

Figure 3: Expectations–Experience Analysis Grid of customers of Internet service providers
Notes: T-Tangibility; R-Reliability; A-Assurance; E-Empathy; RS-Responsiveness; C-Communication; N-Network quality; item codes can be found in App. A.

The first quadrant “high priority” has four items (N1, T1, C3, and R1), the expectations of customers related to these four items were high, but their perceptions are low, this result throws light on the necessity of improving the quality and speed of the internet service, developing the service providers’ IT facilities, serious follow-ups on complaints submitted, and fulfilling the promises to customers. The second quadrant (“keep up the good work”) includes twelve items (A2, E1, A1, T3, C1, A3, T2, C2, E2, Rs3, E4, Rs1), according to the analysis, these items work well, keeping the good work is efficient with the pursuit of maintaining the quality continuously. The third section (“low priority”) has eight items (N2, R5, T4, Rs4, R2, R4, R3, and E5), customers’ expectations were low toward the service quality, at the same time, their experience is also not high, only a limited amount of effort should be put into this cell because it is low priority. As for the fourth quadrant (“possible overkill”), it has only 3 items considered by customers to have low expectations and high experience (A4, E3, and Rs2), which indicates that consumers are satisfied with the performance of the Internet service providers.
As observed in Figure 3, half of items 14 of 27 are concentrated in the middle of the grid, this direction gives an indication of the ease of repositioning the items to the right or to above if the expectations or perceptions of customers increase, this leads to link this results to the nature of Internet sector where the competition between the providers is intense, in addition to the fact that customers change their opinions rapidly due to the growth and changes in this industry (Jhamb et al., 2020). Figure 4 illustrates the items located at the middle of grid.

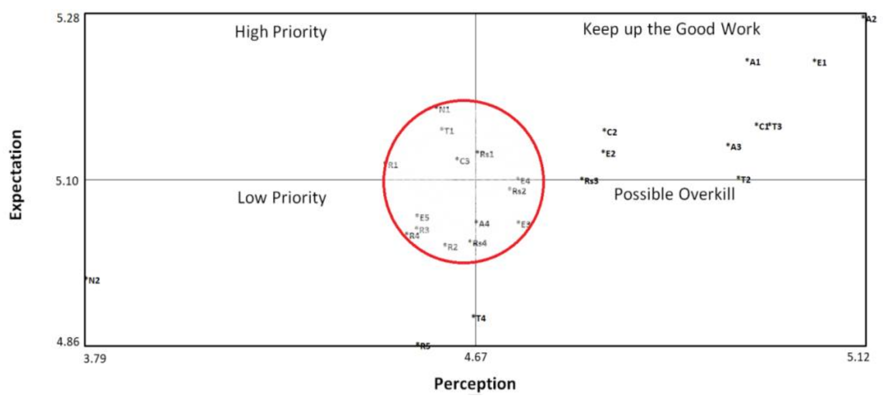

Figure 4: Items Located at The Middle of Grid

4.3 Discussion

As shown in the results of the study, all the seven factors of the expanded SERVQUAL model have negative gaps. Regarding the tangibility, the gap is -0.30, this result aligns with the previous study of Riaz and Sughra (2021), which notes that in their analysis that applied in the public hospital's sector in Rawalpindi in Pakistan, tangibility had the biggest gap. This result is supported by Rafati and others (2021) as well, which elaborates on students' opinions about the educational services quality in the southern region of Iran, the study findings explained the negative gap between the expectations and perceptions regarding the tangibility.

In terms of reliability, the findings give a gap value of -0.45, this outcome is consistent with the findings of Govender and others (2012) who sought to evaluate the expectations and perceptions of service quality among international students. According to the study's findings, there are discrepancies between what international students expect the five service quality criteria should be and what they actually experience, this result also agrees with all five factors' gap results.

With regard to responsiveness, the gap value equals -0.38, which is agreed with a study by Ngwenya (2017) that applied his study to the Telecommunication industry in South Africa. In the results, the gap between all factors was negative, responsiveness had the largest negative gap, this finding also conforms with the gap results for all five dimensions of the current study.

Concerning the assurance, outcomes gave a value of -0.27 for the assurance gap, this finding is similar to the results of the study by Ngwenya (2017) that applied on the Telecommunication industry in South Africa. Regarding empathy, the gap is -0.34 between the expectations and perceptions of customers toward the Internet service providers, the studies of Ngwenya (2017) and Harfoush and others (2018) also asserted the negative gap toward empathy.

As for the communication and network quality, they have also negative gaps (-0.35, -0.9259), they are with the same results line of Harfoush and others (2018) study. With concentrating on the results of the Expectations–Experience Analysis (EEA) grid, the findings harmonize with the results of Dsilva and others (2020) results applied in the Airlines industry in which the fourth quadrant has the lowest number of items similar to the current study, however, it differs where most of the reliability items in the current study localize in the third quadrant "low priority", while in terms of Dsilva and others (2020), most of the reliability items are localized in the first quadrant "high priority".

5.Conclusion

In this study, we adapted and assessed the SERVQUAL model in Jordan's Internet service sector. The study aimed at analysing the gaps between expectations and perceptions of customers toward the service quality of Internet service attributed to seven factors (i.e., tangibility, reliability, responsiveness, assurance, empathy, communication, and network quality). In addition, the researchers used the Expectations–Experience Analysis grid (EEA) to evaluate in which quadrant the items are located giving an overall assessment of the service quality. The study was able to show that customers have negative quality perceptions of Internet services, as their expectations were not met by the performance of Internet services.

The results of the current study are extremely significant for the Internet service providers in Jordan where they can pinpoint exactly what sides must be improved to deliver high quality service to customers and to meet their expectations, especially this sector is highly competitive. Besides, the outcome also confirmed the necessity and importance of the

SERVQUAL model to assess the service quality of businesses in different sectors as many previous studies certified the same result. Furthermore, in order to fulfil the sustainability of the business, we recommend Internet service providers in Jordan pay more attention to the service quality, particularly network quality because it has the highest negative gap.
For future studies, one interesting area of research might be to apply the SERVQUAL model on students and other segments in the same country in the same sector in order to compare their evaluations. Also, international comparisons would be interesting.

References

Ali, A., Othman, A. K., Hassan, F. H., Zainudin, M. I., Fadzil, A., 2018. Branding Strategy on Economic Sustainability Among Personal Care and Cosmetics Customers. *International Journal of Asian Social Science*, 8(11): 995-1004. https://doi.org/10.18488/journal.1.2018.811.995.1004.

Alnsour, M., Abu Tayeh, B., Alzyadat, M., 2014. Using SERVQUAL to Assess the Quality of Service Provided by Jordanian Telecommunications Sector. *International Journal of Commerce and Management*, 24(3): 209-18. http://dx.doi.org/10.1108/IJCoMA-03-2012-0021.

Alter, S., 2010. Viewing Systems as Services: A Fresh Approach in the IS Field. *Communications of the Association for Information Systems*, 26(11): 195-224. https://doi.org/10.17705/1CAIS.02611.

Brink, A., Berndt, A., 2010. *Customer Relationship Management and Customer Service*, Johannesburg: Juta Academic.

Chu, R. K., Choi, T., 2000. An Importance-Performance Analysis of Hotel Selection Factors in the Hong Kong Hotel Industry: A Comparison of Business and Leisure Travellers. *Tourism Management*, 21(4): 363-77. https://doi.org/10.1016/S0261-5177(99)00070-9.

Deng, W. J., 2008. Fuzzy Importance-Performance Analysis for Determining Critical Service Attributes. *International Journal of Service Industry Management*, 19(2): 252-70. https://doi.org/10.1108/09564230810869766.

Dsilva, J., Balasubramanian, S., Ajayan, Sh., Paris, C., 2020. An Expectation-Experience Analysis of Service Quality of Business Travelers in Low-Cost Airlines. *e-Review of Tourism Research (eRTR)*, 18(3): 375-92.

Furrer, O., Shaw-Ching, B. L., Sudharshan, D., 2000. The Relationships Between Culture and Service Quality Perceptions. *Journal of Service Research*, 2(4): 355-71. http://dx.doi.org/10.1177/109467050024004.

Futrell, C., 2008. *Fundamentals of Selling: Customers for Life through Service,* 10th Ed., New-York: McGraw-Hill.

Gemmel, P., 2007. Delivering Excellent Service Quality in Aviation: A Practical Guide for Internal and External Service Providers. *International Journal of Service Industry Management*, 18(4): 443-44. https://doi.org/10.1108/09564230710778173.

Guilford, J. P., 1978. *Fundamental Statistics in Psychology and Education.* 6th Ed., New York: McGraw-Hill.

Harfoush, B., Mia, R., Khalifa, G., 2018. Measuring the Quality of the Services Provided by the Syrian Telecommunications Company From the Customers' Point of View. The Case of Tishreen Telephone Exchange in Lattakia. *Tishreen University Journal for Research and Scientific Studies - Economic and Legal Sciences Series*, 40(5): 553-73.

Hizam, Sh., Ahmed, W., 2019. A Conceptual Paper on SERVQUAL-Framework for Assessing Quality of Internet of Things (IoT) Services. *International Journal of Financial Research*, 10(5): 387-97. https://doi.org/10.5430/ijfr.v10n5p387.

Jhamb, D., Mittal, A., Sharma, P., 2020. The Behavioral Consequences of Perceived Service Quality: A Study of the Indian Telecommunication Industry. *Business: Theory and Practice*, 21(1): 360-72. https://doi.org/10.3846/btp.2020.11480.

Kumar, V., Aaker, D. A., Day, G. S., 2002. *Essentials of Marketing Research,* 2nd Ed., New York: John Wiley and Sons, Inc.
Leong, C. C., 2008. An Importance-Performance Analysis to Evaluate Airline Service Quality: The Case Study of a Budget Airline in Asia. *Journal of Quality Assurance in Hospitality&Tourism*, 8(3): 39-59. https://doi.org/10.1080/15280080802080193.
Lovelock, C., Wirtz, J., 2007. *Services Marketing – People Technology, Strategy*, Englewood Cliffs NJ: Pearson.
Ngwenya, M., 2017. Analyzing Service Quality Using Customer Expectations and Perceptions in the South African Telecommunication Industry. *IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, pp.1094-1097, https://doi:10.1109/IEEM.2017.8290061.
Obeidat, O., (2022). Role of the Internet in Narrowing the Digital Divide Between the Members of the Jordanian Society During the Coronavirus Crisis. *Library Philosophy and Practice (e-journal)*, 6921.
Parasuraman, A., Zeithaml, V, A., Berry, L. L., 1985. A Conceptual Model of Service Quality and its Implications for Future Research. *Journal of Marketing*, 49(4): 41-50. https://doi.org/10.1177/002224298504900403.
Parasuraman, A., Zeithaml, V. A., Berry, L. L., (1988). SERVQUAL: A Multiple Item Scale for Measuring Customer Perceptions of Service Quality. *Journal of Retailing*, 64(1): 12-40.
Rafati, F., Arbabisarjou, A., Dastyar, N., (2021). Analyzing The Gap Between Perceptions And Expectations Of Students About The Quality Of Educational Services In Southern Iran: Servqual Model. *Pakistan Journal of Medical&Health Sciences*, 15(4): 1134-39. https://doi.org/10.21203/rs.3.rs-148109/v1.
Riaz, A., Sughra, U., (2021). Measurement of Service Quality Gaps in Dental Services using SERVQUAL in Public Hospitals of Rawalpindi. *Pakistan Journal of Medical Sciences*, 37(3): 751-56. https://doi.org/10.12669/pjms.37.3.3436.
Statista, 2021. *Global digital population as of January 2021 [online]*, available at: https://www.statista.com/statistics/617136/digital-population-worldwide/ [accessed 13.03.2022].
Yeo, R. K., (2008). Brewing Service Quality in Higher Education. *Quality Assurance in Education*, 16(3): 266-86. https://doi.org/10.1108/09684880810886277.
Zikmund, W. G., (1997). *Exploring Marketing Research, 6th Ed.,* New York: The Dryden Press.

Bio-notes:

Marietta Kiss is an associate professor and head of the *Marketing Department at the Institute of Marketing and Commerce at the University of Debrecen*. Her scientific interests cover various marketing-related topics, including – among others – services marketing, higher education marketing, sustainable consumption, health-conscious consumer behavior, and nutrition marketing .
Omar Salem is a Ph.D. researcher in the marketing field in the *Doctoral School of Management and Business at the University of Debrecen, Hungary*. His scientific interests are marketing analytics, service quality, marketing of higher education institutions and service marketing.

SOCIO-ECONOMIC INDICATORS AND ECONOMIC GROWTH: A STUDY OF NIGERIA AND SOUTH AFRICA

Olabode Eric Olabisi*, **Usenobong James Effiong**
Department of Economics, Faculty of Humanities, Social and Management Sciences, Elizade University, Ilara-Mokin, Ondo State, Nigeria.
olabode.olabisi@yahoo.com
usenjames4@gmail.com

Abstract: *The research on the determinants of economic growth has taken a new dynamic pattern in the recent times. More studies are now explaining the need to better consider the socio-economic indicators that promote economic growth across the globe. Hence, this paper examined the relationship between socio-economic indicators and economic growth in both Nigeria and South Africa covering the period 1999–2020. Ordinary Least Squares (OLS) estimation technique was employed. The results of the study show that secondary school enrollment and employment are positive and significant in driving the economic growth of both Nigeria and South Africa. However, inflation and mortality rate reduce economic growth in both countries. But in South Africa, life expectancy reveals a negative impact on economic growth. The empirical outcomes of the study can be used by the government to formulate policies that can promote human capital development and employment creation. It can also assist the government in formulating monetary policies that can reduce the outburst of inflation.*

Keywords: Socio-economic indicators, Nigeria, South Africa, Life expectancy, Mortality rate, Birth rate

JEL Classifications: B55, J13, O47, O49

1. Introduction

Economic growth is a major metric that economists employ to determine the economic health of a country or region. Just like several other macroeconomic measures of a country's well-being, economic growth is a product of many moving parts of countries macroeconomic indicators. To have a near-accurate approximation of the determinants of economic growth in any country, several investigative questions must be asked about the contributing factors to ensure that high-impact variables are not left out. These factors cut across diverse components of a nation's economy, which include: market factors, technological factors, environmental factors, political factors and the broadly defined socio-economic factors. While the market and technological factors are often fairly represented when investigating the causes of a country's economic growth, socio-economic factors rarely get a fair share of representation. As a result, insights that inform policy actions are drawn from a deficient analysis. Policies derived this way often end up redundant and unable to reflect positively on a country's economic performance.

---

* Coresponding author: Olabode Eric Olabisi
Cite as:
Olabisi, O. E., and Effiong, U., J., 2023. Socio-Economic Indicators and Economic Growth: a Study of Nigeria and South Africa. *Oradea Journal of Business and Economics*, 8 (1), pp. 72–81, http://doi.org/10.47535/1991ojbe166.

The growth of a nation is often approximated by additional value made to its existing wealth. That includes both human and material resources. In Kuznets (1973) research work, economic growth is defined as a long-term rise in capacity to supply increasingly diverse economic goods to its population. These diverse economic goods include; natural resources, reproductive resources as well as accumulated capital. Modern definitions have come to capture economic growth as growth in per capita income (output), growth in productivity (output per unit of input), structural transformation - shift away from agriculture and primary production, and growth of the service sector (Kuznets, 1973; Popova & Podolyakina, 2014). There are many dynamic processes and moving parts that feed into what termed as economic growth. In sub-Saharan Africa and most of the third world countries, there is incipient unrest emanating from changes in social and economic structures (Kuznets, 1973) . It goes without saying that these changes would link into, and leave some effects on the macro-economy. These effects, especially those traceable to changes in social structures, are of particular interest because they are often not reflected or under-represented in the current measures of economic growth. The increasing realization of the shortcoming of the measures has stimulated lively discussion of the limits and limitations of economic measurement of economic growth.
Socio-economic indicators link the social life or situation of a population to its economy in general. This group of indicators consist of the numerous components of economic measures highlighting the outcome of relationships between behavioral interactions of individuals and groups, and the performance of the economic territory in which they operate. Socio-economic indicators are often non-market economic variables that can influence the measurable performance of individuals in an economy. Typical examples include; life expectancy, mortality rate, fertility rate, corruption index, insecurity, terrorism index, inequality, school enrolment, human development index (HDI), literacy rate, etc. (Arik, 2009; Popova & Podolyakina, 2014). Generally, a majority of socio-economic indicators can be conveniently grouped into a number of broad categories which cover crucial components like health, education, urbanization, income distribution, culture, and religion.
Given the above positions, this paper seeks to provide an annual data-driven analytical study for Nigeria and South Africa. This perspective is to offer insights on the impact of socio-economic indicators on both countries. The rest of the paper presents literature review in section 2 while section 3 presents the methodology of the paper. Section 4 presents the analysis of the findings, and lastly, section 5 presents the conclusions and policy implications

1.1 The Nigerian and South African economies: A comparison

On the historical path, Nigeria and South Africa were both colonies of the British colonial government and gained independence almost the same time – 1960 and 1961 respectively. Also, both countries are members of the African Union (AU). According to the 2020 World Population Review (ILO) economic data, unemployment rate in South Africa as at 2020 stood at 28.5 while Nigeria was 16.5 respectively. Labour force participation rate for Nigeria and South were 58.9% and 58.3%. The average life expectancy for Nigeria stood at 59years and 64 years for South Africa, while the crude birth rates stood at 35.2 in Nigeria, and 19.9 in South Africa.
On the other hand, the crude death rate almost ties together at 9.6 in Nigeria and 9.3 in South Africa. Also, the total fertility rate which impacts on the population growth rate of both countries are at 4.6% and 2.26%, respectively, with a median age of 18 years for Nigeria and 27 years for South Africa respectively. It is often argued that a lower median age is considered better for an economy's health, as it is an indication that a majority of the population in these countries are young adults. However, a very low median age may cause high youth unemployment and poverty rates.

The Human Capital Index (HCI) is another strong link between both economies according to World Bank data (2020), which calculates the contributions of health and education to workers' productivity. Both countries have a human HCI of 0.4. The school life expectancy that measure human capital development is 9 years for Nigeria and 14 years for South Africa. By implication, an average Nigerian is expected to have only done 9 years of schooling, while the South African counterpart is expected to do 14 years. Judging in terms of size, the Nigerian economy, often called the giant of Africa because of its robust nature in terms of population and the size of the Gross Domestic Product (GDP). The Nigerian population figure stood at about 200 million, with a population density of 215 per square kilometer while South Africa has a population of about 57 Million and a population density of 47 per square kilometer**.** According to the World Bank (2021) data base, in 2021, the GDP figures for Nigeria and South Africa stood at $440 Billion and $419 Billion respectively. On the grand scheme, these figures put these economies at miles apart. But, when viewed through the socio-economic lens, it becomes obvious that these economies are in fact very similar.
To this end, the following hypotheses are testable:

- H_1: Life expectancy at birth has a positive impact on economic growth
- H_2: Mortality rate has a negative impact on economic growth
- H_3: Secondary school enrollment has a positive impact on economic growth
- H_4: Energy use has a positive impact on economic growth
- H_4: Employment rate has a positive impact on economic growth
- H_5: Inflation has a negative impact on economic growth

2. Socio-Economic Indicators and Economic Growth: A brief literature review

Numerous research efforts have gone into providing both theoretical and empirical evidences on the factors that contribute to what is recognized as economic growth. From a macroeconomic perspective, variables like government spending, foreign direct investment, trade, Inflation rate, exchange rate, interest rate, etc., are employed to draw insight on the determinants of economic growth. However, economic growth in itself is an outcome that is subject to the contribution of factors beyond the economic terrain. Both Solow-Swan and endogenous theories also emphasized the important roles of socio-economic factors such as human capital development, physical capital, labour etc. in promoting economic growth. Kuznets (1973) emphasizes the social implications of some effects of modern economic growth on conditions of life of various population groups in selected countries. Stating that many of these effects are often not reflected in the current measures of economic growth; and "the increasing realisation of the shortcoming of the measures has stimulated lively discussion on limits and limitations of economic measurement of economic growth". Some studies have gone ahead to establish some linkages between non-economic factors and economic growth. For instance, the links between social and political institutions and economic growth (Fedderke & Klitgaard, 2006). the impact of corruption on investment and economic growth (Johnston, 2021; Mauro, 1995), school enrolment (human capital development) and economic growth (Adawo, 2011; Mankiw Gregory et al., 1992; Pantelis Kalaitzidakis, Theofanis P . Mamuneas, 2001; Peaslee, 1967), poverty and economic growth (Dauda, 2017; Muhammad Yusuf, C . A. Malarvizhi, 2019), population and economic growth (Ram, 1981; Toye, 1997).
Temple *et al* (1998) argued that so many predictions have gone awry because researchers sought the origins of long-run growth in the wrong places and neglected the role of "social capability" in economic development (Temple & Johnson, 1998). Fedderke (2006) opines that life expectancy, mortality rate, fertility rate, corruption index, insecurity, inequality is rarely considered when analyzing economic growth. But in reality, when paying closer

attention to the peculiarities of different economies, these social factors could impact growth more significantly than the popularly used macro measures of economic performance (Fedderke and Klitgaard, 2006). In the African context, especially in sub-Saharan Africa, economic growth has been particularly slow. This weak growth performance has remained a subject of debate with no definite explanation on the underlying cause (Barro, 1991).

From the empirical point of view, a number of research exists on the relationship between socio-economic indicators and economic growth. These studies often apply statistical analysis, growth models simulation, or case-studies and comparative analyses to examine the impact of selected socio-economic indicators on other variables. Muhammad *et al* (2019) used the VECM with co-integration test on data from 1970 to 2011 to analyze the causal association between socio-economic indicators like corruption and poverty, on economic growth in Nigeria. Their findings suggest a long-term connection between corruption, poverty, and economic growth in Nigeria. This further validates the evidence from (Barro, 2001; Benhabib & Spiegel, 1994), who simulated the dynamic economic growth model and Solow growth model to examine the relationship between socio-economic indicators like corruption, investment, and education levels, and economic growth. Pantelis *et al* (2001) further emphasized the connection between the development of human capital (presented as mean years of education) and economic growth, using a semi-parametric estimation technique to find potential nonlinearities. Findings from the study presented significant disparities in the growth effect of educational attainment.

In the same vein, using regression analysis, Middendorf (2006) concluded on the presence of a significant relationship between measures of human capital development like educational attainment and health outcomes, and economic growth. Also, Aigbokhan *et al*.(2000) concludes on the existence of an inverse relationship between poverty and economic growth, following a correlation and regression analysis on a time-series data on poverty and economic growth in Nigeria.

Additionally, some studies employed the use of case study or comparative analysis approach in examining the relationships between these variables. For instance, Oyekale (2015) used the case study and comparative analyses to examine the relationship between selected socio-economic indicators, such as infrastructure and human capital development and economic growth in developing countries. Although several empirical works exist, with their respective findings and conclusions, and there is a plethora of methods employed in examining the relationship between these variables; it is important to note that the relationship between socio-economic indicators and economic growth can vary depending on a range of factors. Hence, these research findings are best treated within the confines of the study limitations, and not as absolute truths.

Drawing reference from the empirical works reviewed above, there is a wide application of regression techniques and growth model simulation when examining the relationship between socio-economic indicators and economic growth across a sample of countries. Case-studies and comparative analyses are often used in intra-national analysis, especially when conducting an isolated examination on the growth effect of different socio-economic indicators (Aigbokhan et al., 2000). On a different note, there are limited empirical literatures highlighting the relationship between socio-economic indicators and economic growth within the African context. Also, monetary variables like the inflation rate and economic variables like the employment rate have not been widely applied in the context of socio-economic analysis.

Hence, this study contributes to existing literature by examining the relationship between socio-economic indicators and growth using regression analysis from Nigeria and South Africa from 1999−2020.

3. Data and methodology

The first stage in the calibration process is the gathering of the time series data for the period of 1999−2020. This study employs the socioeconomic indicators−GDP per capita (current US$) which is used to proxy economic growth. Life expectancy at birth, total (years), Mortality rate, infant (per 1,000 live births), Inflation, consumer prices (annual %), Energy use (kg of oil equivalent per capita), employment rate, and secondary school enrollment to investigate the impact of socioeconomic indicators on economic growth of Nigeria and South Africa. All the data used were sourced from the World Development Indicators (WDI), database, 2022. The logarithm form for all the data is used for both countries, except inflation. The study employs the econometric technique of Classical Ordinary Least Squares (OLS). This method is suitable because it allows a diagnostic test such as, heteroscedasticity, serial correlation, histogram-normal, stability to be carried out, and the linear growth model goodness of fit is ascertained as well.
Our linear growth model is written as follows:

$$GDPPC = \beta_0 + \beta_1 LEB + \beta_2 MRI + \beta_3 SCH + \beta_4 ENG + \beta_5 EMP + \beta_6 INF + \mu \ldots\ldots\ldots\ldots (1)$$

where:

- $GDPPC$ is the gross domestic product per capita proxy economic growth, and is the dependent variable
- LEB is the life expectancy at birth
- MRI represents the mortality rate, infant (per 1,000 live births)
- SCH is the secondary school enrollment
- ENG is the energy use (kg of oil equivalent per capita)
- EMP is the employment rate
- INF is the Inflation, consumer prices (annual %)
- $\beta_1 - \beta_6$ are the coefficients of the variables
- μ is the error term

Table 1. A priori expectations of the variables estimated in the study

Variables	Sign
LEB	+
MRI	−
SCH	+
ENG	+
EMP	+
INF	−

3.1. Empirical Results

From the results in Table 2, it can be deduced that in both Nigeria and South Africa, human capital development proxy by secondary school enrollment is positive and significant to determine an improvement in economic growth. Outcome shows that 1 percent increase in secondary school enrollment promotes economic growth by 0.90 and 1.57 percent in Nigeria and South Africa respectively. However, without formal education and training, human capital development in skills and innovations required for economic growth can as well be achieved through large spillover diffusion of knowledge in the manufacturing sector. This assertion is supported by the Pelinescu (2015).
As expected, the extent of mortality rate in Nigeria and South Africa shows a negative and significant impact on the economies of both countries. For instance, in the two countries, 1 percent increase in rate of mortality decreases economic growth by 5.15 percent and 3.5041

respectively. To reduce the negative impact of mortality rates, several measures and vaccines to treat polio and missiles had been introduced by the World Health Organisation (WHO) especially in Africa to reduce infants death, yet this move has no positive impact on the economic growth of Nigeria and South Africa.
Result of the negative and significant life expectancy on economic growth in South Africa defers from our expectation because it is assumed that high life expectancy should promote economic growth, however, the reverse is the case in our result. This may be due to the low productivity of old people in South Africa. From the result, 1 percent increase in the life expectancy at birth reduces economic growth by 11.93 percent. The result of the decrease in economic growth as a result of rising life expectancy is in line with the previous work by Kunze (2014) and Hansen & Lønstrup, (2015).
Rising employment is expected to provide income for the people, and hence promote economic growth via saving and investment channels. From Table 2, in both Nigeria and South Africa, a positive and significant results revealed. This shows that 1 percent increase in the rate of employment will increase economic growth by 3.10 and 4.28 percent respectively. Our result is in line with the previous works by Fields (1988) and Sodipe & Ogunrinola (2011).
Finally, inflationary rates in Nigeria and South Africa revealed negative and significant results as expected. Although, this is not a general consensus but many scholars support that rising inflation reduces peoples’ income, savings, and investment (Valdovinos, 2003; Pollin & Zhn, 2006; Tien, 2021), as a result decreases economic growth. With these results, 1 percent increase in the rates of inflation reduces economic growth by 0.02 and 0.04 percent in both countries accordingly.

Table 2: OLS results for Nigeria and South Africa

Dependent Variable: $GDPPC$	**Nigeria**		**South Africa**	
Variables	**Coefficients**	**Prob. Values**	**Coefficients**	**Prob. Values**
LEB	−3.3443	0.5631	−11.9372	0.0001**
MRI	−5.1519	0.0301**	−3.5041	0.0001**
SCH	0.9004	0.0063**	1.5700	0.0434**
ENG	−0.0058	0.9960	−1.2541	0.2846
EMP	3.1094	0.0336**	4.2869	0.0064**
INF	−0.0231	0.0091**	0.0442	0.0063**

Note: the asterisk values are probabilities values significant at 5 percent

3.2. Diagnostic check

According to the result in Table 3, the estimated OLS model shows that the data for the study is free from Heteroskedasticity and Serial Correlation. We also checked further by determining the normality and stability of the model. From Figure 1, 2 & 3, it can be shown that the data for the study were normally distributed for the two countries. More so, the model for the study is very stable. It can be concluded that overall the model is suitable for the study.

Table 3: Diagnostic tests results for Nigeria and South Africa

	Nigeria		**South Africa**	
Test	**F-Stat.**	**P-Values**	**F-Stat.**	**P-Values**
Heteroskedasticity Test: Breusch-Pagan Godfrey	0.4554	0.8302	0.9898	0.4664
Breusch-Pagan Godfrey Serial Correlation LM Test	0.6524	0.5370	1.6959	0.2216

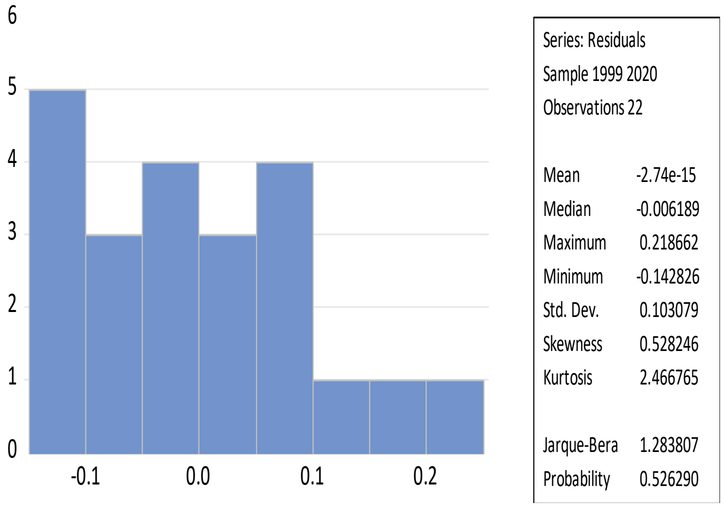

Figure 1a: Histogram-normal distribution test result for Nigeria

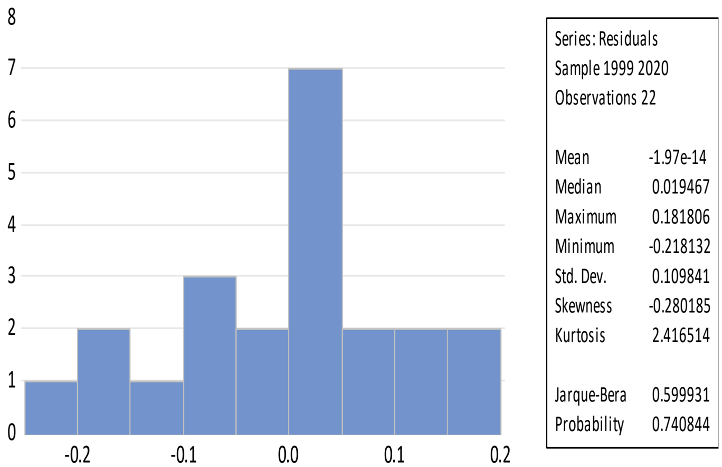

Figure 1b: Histogram-normal distribution test result for South Africa

Figure 2: Recursive estimates stability test for Nigeria

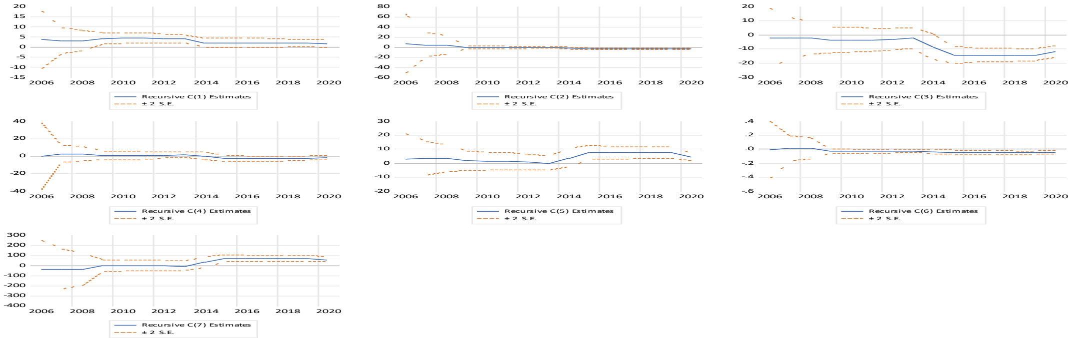

Figure 3: Recursive estimates stability test for South Africa

4. Conclusion and policy recommendations

The aim of this study is to examine the impact of socioeconomic factors on economic growth of Nigeria and South Africa. The previous studies mostly focused on the traditional macroeconomic variables that affect economic growth. However, there are scanty studies about the impact of socioeconomic factors on economic growth especially for Nigeria and South Africa. Therefore, the current study concentrates on the socioeconomic factors that impact Nigeria and South Africa to fill the gap in the literature. The empirical findings of this study affirmed positive and significant impacts of secondary school enrollment and employment creation on the economic growth of Nigeria and South Africa. The outcome of the study confirmed the hypothesis of Solow-swan growth model that human capital is an important factor in determining the growth of an economy.

Employment plays an important role in creating wealth for a nation through improvement in savings and investments that promote economic growth. The benefits of employment creation are numerous. Overall, it reduces poverty rates and promotes income of a nation. Employment with training can also contribute to more acquisition of skills and innovation, and all these promote economic growth. The government of Nigeria and South Africa should work closely with educational and employment agencies in creating viable strategies that improve education and employment generation. Since inflation is limiting the economic growth of both countries, efforts should be made by the government in formulating monetary policies that can drastically reduce the impact of inflation on economic growth. The study contributed to knowledge by drawn an inference from both social and economic variabes that promote economic growth. While previous scholars concentrated mostly on the traditional economic variables that determine economic growth, this current study analyzed

the social variables in addition to the economic factors that determines growth in Nigeria and South Africa.
This study focuses only on Nigeria and South Africa. Future researchers may extend it to countries in Africa as an area of study. This implies that future study will focuses on panel study rather than time series. Next, this study only considered the impact of socioeconomic variables on economic growth in the period of democratic regime especially for Nigeria. Other future researchers could compare the pre-and post-democratic periods of impacts of socioeconomic factors on economic growth.

References

Adawo, M.A., 2011. Has Education (Human Capital) Contributed to the Economic Growth of Nigeria? *Journal of Economics and International Finance*, 3(1): 46-58.
Aigbokhan, B.E., 2000. *Poverty, Growth and Inequality in Nigeria: A case study. ERC Research Paper 102*, *African Economic Research Consortium*, Nairobi: The Regal Press Kenya, Ltd.
Arik, H., Arik, M., 2009. Is It Economic Growth or Socioeconomic Development? A Cross-Sectional Analysis of the Determinants of Infant Mortality. *The Journal of Developing Areas*, 42(1): 31-55. https://doi.org/10.1353/jda.0.0027
Barro, R.J., 1991. Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106(2): 407-43. https://doi.org/10.2307/2937943
Barro, R.J., 2001. Human Capital and Growth. *American Economic Review, 91(2):* 12-17. https://doi.org/10.1257/aer.91.2.12
Benhabib, J., Spiegel, M.M., 1994. The Role of Human Capital in Economic Development Evidence From Aggregate Cross-Country Data. *Journal of Monetary Economics*, 34(2): 143-73. https://doi.org/10.1016/0304-3932(94)90047-7
Dauda, R.S., 2017. Poverty and Economic Growth in Nigeria: Issues and Policies. *Journal of Poverty*, 21(1): 61-79. https://doi.org/10.1080/10875549.2016.1141383
Fields, G.S., 1988. Employment and Economic Growth in Costa Rica. *World Development*, 16(12): 1493-1509. https://doi.org/10.1016/0305-750X(88)90222-7
Fedderke, J., Klitgaard, R., 2006. Economic Growth and Policy Indictors: An Exploratory Analysis. *Journal of Comparative Policy Analysis: Research and Practice*, 8(3): 283-303.
Hansen, C.W., Lønstrup, L., 2015. The Rise in Life Expectancy and Economic Growth in the 20th Century. *The Economic Journal*, *125*(584): 838-52. https://doi.org/10.1111/ecoj.12261
Johnston, M., 2021. Controlling Corruption: Institutional Strategies. In Andreas Bågenholm and others Eds. *The Oxford Handbook of the Quality of Government*, Oxford: Oxford Academics. https://doi.org/10.1093/oxfordhb/9780198858218.013.25
Kuznets, S., 1973. Modern Economic Growth: Findings and Reflections. *The American Economic Review*, 63(3): 247-58.
Kunze, L., 2014. Life Expectancy and Economic Growth. *Journal of Macroeconomics*, *39*, pp.54-65. https://doi.org/10.1016/j.jmacro.2013.12.004
Manktw, N.G., Romer, D., Weil, D.N., 1992. A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics*, 107(2): 407-37. https://doi.org/10.2307/2118477
Mauro, P., 1995. Corruption and Growth. *The Quarterly Journal of Economics*, 110(3): 681-712. https://doi.org/10.2307/2946696
Middendorf, T., 2006. Human Capital and Economic Growth in OECD Countries. *Jahrbücher für Nationalökonomie und Statistik*, *226*(6): 670-686.
Yusuf, M., Malarvizhi, C.A., Mazumder, M.N.H., Su, Z., 2014. Corruption, Poverty, and Economic Growth Relationship in the Nigerian Economy. *The Journal of Developing Areas*, 48(3): 95-107. https://doi.org/10.1353/jda.2014.0042

Oyekale, A.S., 2015. Non-Monetary Assessment of Pro-Poor Growth in Nigeria: Evidence From Demographic and Health Surveys. *The Journal of Developing Areas*, 49(1): 107-132. https://doi.org/10.1353/jda.2015.0017

Kalaitzidakis, P., Mamuneas, T.P., Savvides, A., Stengos, T., 2001. Measures of Human Capital and Nonlinearities in Economic Growth. *Journal of Economic Growth*, 6(3): 229-54. https://doi.org/10.1023/A:1011347816503

Pelinescu, E., 2015. The Impact of Human Capital On Economic Growth. *Procedia Economics and Finance*, *22*, pp.184-190. https://doi.org/10.1016/S2212-5671(15)00258-0

Pollin, R. and Zhu, A., 2006. Inflation and Economic Growth: A Cross-Country Nonlinear Analysis. *Journal of post Keynesian Economics*, 28(4): 593-614. https://doi.org/10.2753/PKE0160-3477280404

Popova, Y., Podolyakina, N., 2014. Pervasive Impact of Corruption on Social System and Economic Growth. *Procedia-Social and Behavioral Sciences*, *110*, pp.727-737. https://doi.org/10.1016/j.sbspro.2013.12.917

Ram, R., 1981. Population and Economic Growth: A Critical Note. *The Review of Economics and Statistics*, 63(1): 149-53. https://doi.org/10.2307/1924234

Sodipe, O.A., Ogunrinola, O.I., 2011. Employment and Economic Growth Nexus in Nigeria. *International Journal of Business and Social Science*, 2(11): 232-39.

Temple, J., Johnson, P.A., 1998. Social Capability and Economic Growth. *The Quarterly Journal of Economics*, 113(3): 965-90. https://doi.org/10.1162/003355398555711

Toye, J., 1997. Keynes On Population and Economic growth. *Cambridge Journal of Economics*, 21(1): 1-26. https://doi.org/10.1093/oxfordjournals.cje.a013655

Tien, N.H., 2021. Relationship Between Inflation and Economic Growth in Vietnam. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(14): 5134-39.

Valdovinos, C.G.F., 2003. Inflation and Economic Growth in the Long Run. *Economics letters*, 80(2): 167-73. https://doi.org/10.1016/S0165-1765(03)00085-5

Bio-notes:

Olabode Eric Olabisi is a Senior Lecturer (Ph.D.) of Economics in the Department of Economics, Elizade University in Nigeria. He studies and teaches Economics, Economic Growth and Development, Econometrics and Advanced Statistics. In these areas, he has published many journal articles.

Usenobong James Effiong is a Staff of Elizade University in Nigeria. He is an Economist and Researcher in the field of Economics.

PROJECT MANAGEMENT CASE STUDY ON EUROPEAN UNIVERSITY BASKETBALL CHAMPIONSHIP 2017

Zoltán Rakaczki*
Institute of Management, Faculty of Economics, University of Miskolc, Miskolc, Hungary
rakaczkiz@gmail.com

Abstract: *One of the key projects of the University of Miskolc in recent years was the organization of the European University Basketball Championship 2017. The size, complexity, and length of time of the event – which can be interpreted as a complex project – presented many challenges to the Organizing Committee, i.e. the project management. The aim of this study is to examine the project management, the project success and the factors leading to success. After the introduction of the topic (relevance and short theoretical outlook), I present the examined project and some relevant project features (project ownership structure, project management, project cycle). I analyse the success of the project with Mihály Görög's hierarchical model. After that, I perform an efficiency examination and a qualitative risk analysis and based on that I look for correlations between the activities of the project management and the success of the project. Finally, I analyse the effects of the event. The purpose of this study is not to formulate general conclusions regarding the success factors of international sports events, but I hope that the conclusions of the study can be compared with other examined events and studies' results, and can be used in future, more extensive research. One of the conclusions of the study is the importance of the identification of partners who can make a meaningful contribution to the success of the event, involving them in the project and making them interested in active involvement.*

Keywords: project management, project success, sports management, efficiency, impact assessment, risk analysis

JEL classification: H43; O22; Z29

1. Relevance of the topic

The effects of a prominent international sports event on sports development, infrastructure, tourism and country image are significant, so success has serious positive effects, just as the consequences of an unsuccessful organization can be serious. Project management has a key role in this.

The University of Miskolc is the co-organizer of the European Universities Games 2024, which is the third largest international multisport event after the Summer Olympic Games and the Summer University World Games (previously known as the Universiade) with approximately 6,000 participants. In 2017, the University of Miskolc already organized a European-level university sports event, at that time it was the host of the European Universities Basketball Championship (hereinafter referred to as University Basketball EC). The preparation for the 2024 event, which is large-scale and presents many management

* Cite as:
Rakaczki, Z., 2023. Project Management Case Study on European University Basketball Championship 2017. *Oradea Journal of Business and Economics*, 8 (1), pp. 82–92, http://doi.org/10.47535/1991ojbe167.

challenges, serves as an opportunity for me to evaluate the 2017 event, examine its success and the success factors.

2. Theoretical outlook

According to the most general definition, project is an activity which is a one-time and complex task for an organization, and which completion period (beginning, implementation) and costs of implementation (resources) are determined and aimed at achieving a defined goal (result).

The group of interconnected projects that manages the included projects in a unified manner and achieves goals that would not be possible by managing the projects separately, called programs by Turner (1993). A program is specifically created for the successful and efficient execution of high complexity and medium or long duration processes. The projects operating as part of the program are used to realize the objectives of the program. The programs are usually called megaprojects, which are often created to implement a unique process with a large (social) impact.

Project management is a specialized field dealing with the organization of resources and their management, the aim of which is to ensure that the goals of the project are successfully met within a given time and budget as the result of the work performed by the resources. A project is a temporary undertaking, the purpose of which is to create a unique product or service.

3. Presentation of the project examined

The organization of the University Basketball EC was considered a complex task, a temporary organization was created for its implementation, with specific goals, resources, and fixed deadlines. These properties correspond to the typical characteristics of a project (Görög, 2001), so we can talk about a project in relation to the examined sport event. According to its classification, it is an event-type project because the implementation time was fixed. It is also classified a megaproject. Of course, the complexity and effects of the investigated event cannot be compared to that of an Olympic Games, but these characteristics can also be observed here. Even if it was not directly the task of the Organizing Committee, sub-projects such as the renovation of the Miskolc University Sports Hall, the development of Miskolc University's basketball life, or the creation of an organization and services suitable for hosting future international sports events were realized in parallel with the event, under the guidance of the participants in the organization. The event had many legacies, new opportunities and projects followed from the project deliverables.

3.1. Facts about the international sport event

The event, as one of the oldest and largest European University Championships, the most watched sports event by European higher education institutions and the European university sports scene took place July 16-23, 2017. The event is not attended by national university teams, but by university teams, typically the national champions of their country, and the participants were in the 17-30 age group. A total of 16 men's and 12 women's university teams from 16 countries came to the event, representing around 330 athletes. Together with professional staffs, referees, organizers and volunteers, nearly 600 people took part in the European University Championship. The organizers have been preparing for the organization of the international sports event for almost 3 years. The total income of the event was 106 million forints (approx. 346,000 euro at that exchange rate), and the total expenses were 98 million forints (approx. 320,000 euro at that exchange rate), the difference was spent by the Organizing Committee on the development of the basketball department of the University of Miskolc. The event's budget is presented in Table No. 1.

Table 1: The 2017 University Basketball EC budget

Revenues (million HUF)		Expenditures (million HUF)	
Participant Payments	54.5	Related to competition	2.5
EMMI grant	5	Professional costs	5
Miskolc grant	7	Provision of venues	12.2
MKOSZ grant	30	Accommodation	17.2
MEFS grant	1	Meal	32
Sponsorship	1.5	Transport	5.8
University service	2.5	Accreditation	2.2
Technical (VAT recovery)	4.5	Protocol	3.3
Altogether	**106**	Communication, marketing	7.3
		Additional programs	2.2
		Management	6.4
		Other	1.9
		Altogether	**98**

Source: Author's analysis / processing based on own data

3.2. Project ownership structure, project management

The complexity of the task was also reflected in the multi-actor project ownership structure and project management. The Hungarian University Sports Federation (MEFS), the Hungarian Basketball Federation (MKOSZ), the University of Miskolc and the Municipality of Miskolc did not appear as sponsors, but as active actors in the implementation, so these four partner organizations can be considered the owners of the project. The top leaders of these organizations formed the Board of Patrons, and their managers and/or specialists formed the Organizing Committee. The involvement of the Government of Hungary was essential in terms of legitimizing the event, this was realized through the Ministry of Human Resources: the state secretary responsible for sports held the position of chairman of the Board of Patrons. The project organization is presented in Figure 1.

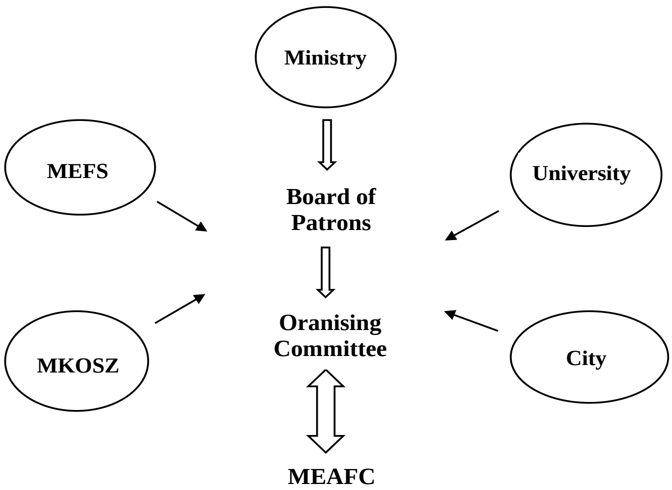

Figure 1: Project organization of the 2017 University Basketball EC
Source: Author’s analysis /processing based on own data

The European University Sports Association (EUSA), the right holder, concluded a tripartite contract (Attribution Agreement) containing the rights and obligations related to the event with its Hungarian member organization, MEFS, and the Organizing Committee, thereby establishing a different system of relations.
Given that the Organizing Committee was not an independent legal entity, an organization providing a legal and economic background was needed, which exercised rights and assumed obligations in accordance with the decisions of the Organizing Committee. This role was played by the Sports Club of Miskolc University (MEAFC).
The Organizing Committee has set the following objectives of the event: organize it within the planned budget, exceeding the set of requirements issued by the EUSA (i.e. at a higher standard than expected), ensuring high satisfaction of the participants and the EUSA, as well as accumulating knowledge and building a team which will be suitable for the organization of other international (university) sports events in the future. The achievement of these objectives will be mentioned when I examine the success of the project, at the appropriate levels of success.

3.3. Project cycle

I divided the project cycle into stages of preparation, planning, implementation and closing. The preparation phase began with the formulation of the intention to organize the event and lasted until the organization right was obtained. In the meantime, important steps were taken, such as thethe justification of the intention to organize the event, consultation with the partner organizations (who later became the owners of the project) about whether the organizing fits into their strategy and whether they can support it. In this phase, the application documentation was compiled, and international inspectors visited.
The planning phase can be counted from winning the organizational right of the of the event till the formation of the Organizing Committee. In this stage, the agreements defining the goals of the event and laying the foundations for its implementation were concluded. Of course, a budget plan was drawn up as early as in the preparation phase, but the overall endorsement of the partner organizations was replaced by specific grants.
The implementation phase began with the formation of the Organizing Committee and the definition of goals, responsibilities and tasks. The implementation can be divided into several parts. On one hand, the organizational areas that run parallel to each other: accommodation, catering, transportation, facilities, competition program, accreditation and event office, communication, marketing, involvement and coordination of volunteers. On the other hand, the coordination, follow-up and revision of the organizational areas and the budget as necessary (project management). And thirdly, to organize the event, which lasted from the arrival of the first participant to the departure of the last participant.
The closure meant professional and financial closure, including tender settlements, written and/or personal reports to sponsors and individual project owners.

4. Examining the success of the project

I would like to examine the success of the project according to Mihály Görög's hierarchical model. The model consists of three levels of success that presuppose each other (fulfilment of primary project goals, satisfaction of project owners, satisfaction of interest groups involved in the project), where the success criterion at a higher level contains to some extent the success according to the criteria located below it, but the success according to each level can be interpreted on its own (Görög, 2007).

4.1. Evaluation based on primary project objectives

The project was completed on time with a positive budget balance. It was not only possible to fully meet the quality requirements of the international sports federation for certain organizational areas, but also to reach the higher quality level set as a goal by the organizers in several cases. In addition to the satisfaction of the project team, I also rank the satisfaction of the international sports federation at this level. In his official report (Official Report of the European Universities Basketball Championship 2017), Peter George, the technical delegate present on behalf of the EUSA, who is an internationally recognized authority on the sport of basketball, called the event in Miskolc one of the best organized University Basketball EC of all time.

4.2. Evaluation based on the satisfaction of the project owner organization that initiated the project

In connection with the project, we can talk about four project owners, who already formulated their main strategic goals in the planning phase, such as the desired returns of the project result (organization of the event). The reputation of the University of Miskolc among European higher education institutions was strengthened through sport, and its sports hall was renovated. In the case of Miskolc, in addition to direct tourism revenues, we can talk about the promotion of the city's values and other PR benefits. For MEFS, the development of university basketball life and the strengthening of its position in the European university sports life were important and realized. The goal of the MKOSZ strategy was to strengthen the Hungarian university basketball championship and basketball life in Miskolc through the event. Among these, there are some that were fulfilled immediately after the event, and some that could only be judged 1-2 years later. In any case, it is sufficient confirmation that the four organizations will work together again at the European University Games 2024.

4.3. Evaluation based on the satisfaction of interest groups involved in the project

The organizers did everything to make the participants feel as comfortable as possible. In comparison with the previous University European Championships, the meal was given priority (this was reflected in the quantity, quality and variety), the accommodation was considered good, and the accompanying programs and information for the participants were the strength of the event. This was confirmed by a satisfaction survey done by EUSA among the participants after the event. The general opinion was the high-quality organization, and among the individual areas, the catering and the communication received the highest ranks. During the event, a total of 3 technical meetings took place with the participation of the head of the delegations, during which no complaints or problems came up – that, together with the received letters of thanks, also confirms the satisfaction of the participants.
The other interest group is the volunteers, for whom the event was able to provide several benefits (e.g. sports organizing experience, practicing a foreign language, building relationships). At this level, as well as at the two levels below, the project can be considered successful.

5. Efficacy examined

In order to draw conclusions, I performed an efficiency examination of several important areas (6 in total). The areas examined: preparation, planning, organization, project management, communication and controlling. I measured the efficiency on a 5-point rating scale, where each value indicates the following level of efficiency: 5 – was very effective, 4 – was effective, 3 – reached the expected level, 2 – was not effective, 1 – was not effective at all. I could, and it was appropriate, to measure the efficiency based on the subjective evaluation of the people involved in the organization from the preliminary stage to the end. I asked the members of the Organizing Committee (9 people) and the operational organizing team (15 people) to evaluate the individual areas on a 5-point scale, and I rounded the values received to whole numbers according to mathematical rules. However, before evaluating the effectiveness, I formulated as a guideline to the interviewees that they should evaluate the effectiveness of each area according to the expectations in line with the goals and possibilities of the event. Compared to the University Basketball EC, for example, it would be unrealistic to expect the number of participants, communication or sports professional standards typical of an adult Basketball EC. Table 2 contains the examined areas and the evaluation of their efficiency.

Table 2: The efficiency of some areas of the 2017 University Basketball EC

	Area examined	Efficiency
1	Preparation	5
2	Planning	4
3	Organization	5
4	Project management	4
5	Communication	4
6	Controlling	4

Source: Author's analysis /processing based on own data

Given that the event received an extremely good rating in its category, it is not surprising that certain areas were rated at least at an efficient level during the evaluation. However, the obtained result can only be interpreted if we look at what aspects the organizing team took into account when determining the values.
The preparation of the event, due to successfully addressing the partner organizations and the winning application, as well as its organization, were both very efficient, in accordance with the results of the success examination. In the case of the planning, the thoroughness of which determined the positive outcome of the entire event, criticism was made because the announcement of the right to host was made as early as in 2014, but the Organizing Committee was officially formed only in 2016, meaning that the planning period was too long and the decisions made during this period were made without formal authorization. The project management was characterized by the agile way of thinking (Wysocki, 2013), the goal of its activity was to achieve the best possible result within the given time and budget, i.e. to organize the highest quality sports event. The project management responded flexibly to new circumstances, especially changes in the budget. The project was managed by a team, not by one person (project manager). Responsibilities were created in the form of a network, rather than in a hierarchical structure. The project management was not fully effective in the recruitment, selection and training of volunteers alone. In terms of communication, a comprehensive appearance was achieved in the local media, several promotional films were made, there were regular press releases and social media was used continuously. Due to the nature of the event, it could not be expected to be included in the national media, this would have been an extra result, which was not achieved. The project was successfully closed, the project management accounted to all supporters, provided comprehensive information to the project owners, the experiences were summarized and evaluated in each area, but deeper analyses (in terms of effects and costs) were not prepared.

6. Qualitative risk analysis

In connection with the project, I consider it important to carry out a qualitative risk analysis, which evaluates the degree of impact on a kind of rating scale. The risk factors can be classified in 4 risk groups based on the probability of occurrence and the degree of the effect caused: high probability of occurrence - high impact, high probability of occurrence - low impact, low probability of occurrence - high impact, low probability of occurrence - low impact (Daróczi, 2011). To examine the risk factors, I use the formula applied by István Fekete: $K = P + 2 \times I$, where K is the risk coefficient, P is the probability of occurrence evaluated on a five-point scale, I is the extent of the effect also evaluated on a five-point scale (Fekete, 2000). According to the value of the risk coefficient, we can talk about negligible risk factors ($K \leq 5$), non-critical risk factors ($5 < K \leq 10$) and critical risk factors ($10 < K \leq 15$). Table 3 lists and examines the level of risks related to the event that the project management had to deal with.

Table 3: Qualitative risk analysis of the 2017 University Basketball EC

	Risk	Risk coefficient	Risk management
A	Low number of participating teams	2 + 2*5 = 12	Comprehensive promotion
B	The University Sprots Hall is not completed on time	4 + 2*4 = 12	Contractual guarantees
C	Short subsidies	4 + 2*3 = 10	Involvement of partners, alternative budget
D	Insufficient number of organizers	4 + 2*3 = 10	Efficient recruitment, flexible management
E	Lack of coherence between the Organizing Committee and the MEAFC	3 + 2*3 = 9	Personal overlaps
F	There is no agreement on meals	3 + 2*2 = 7	Alternative options
G	Compromises in transfer	2 + 2*2 = 6	Accepted risk

Source: Author's analysis /processing based on own data

During the analysis, two risk factors reached the critical level. An unfavourable trend in the number of participating teams would have had a large impact (loss of income, opinion on project owners), however, the probability of this happening was low, since the maximum number of teams participated in previous events as well. In order to further reduce the occurrence, the organizers addressed the university sports associations of European countries and the higher education institutions that participated in previous continental competitions in several rounds and in a targeted manner.

It had a high probability of occurrence and would have had a large impact if one of the competition venues, the University Sports Hall, was not completed on time. The handover deadline was only two weeks before the event, but the strong contractual guarantees and continuous consultation with the contractor proved to be effective risk management.

The other risk factors were no longer considered critical. The probability of a lack of support was high, as in the months before the event there was still uncertainty about the exact amount of several supports and sponsorships, however, the effect was moderate, because the participant payments (65 EUR/person/day) and the grants to project owners agreed upon in the planning phase covered a high-quality organization level that met the organizational requirements of the event. Therefore, there was only uncertainty around certain grants, the absence of which would have only impaired secondary goals (PR activities, communication, accompanying programs), and the organizers had an alternative budget.

The number of organizers (here we mean the organizers and volunteers involved in the event) could be expected to be low, which did not turn out to be optimal, so the other organizers had to bear a larger – but still tolerable, thanks to the recruitment, which did not endanger the event – burden.

It would have caused interruptions in the organization if there was no harmony between the project organization and the organization providing the economic and legal background, which was solved by the fact that the managing director of the Organizing Committee and the president of the MEAFC were the same.

The meals for the participants could ideally be provided by the catering company operating the university restaurant, but for a long time there was no agreement on the price. However the organizers developed an alternative solution (commissioning another service provider by moving to the university's hall), which reduced the risk effect and at the same time improved also the negotiation positions of the organizers.
The transportation of the participants (the provision of an airport transfer was a requirement) was a significant cost item, therefore, for economic reasons, the organizers used their own minibuses and employed their own drivers in the transportation, which meant more risk than if they had solved the task with transfer companies only. The organizers assumed this risk.

7. Examination of effects

According to a study (Stocker, Szabó, 2017), it is advisable to examine the effects in 6 areas: professional sports effects, sports political effects, social effects, economic effects, technological effects, environmental effects. In this study, I only examine the professional effects of the event in more detail, but I would also like to touch briefly on the other effects.
Among the possible sports professional effects, the literature highlights the opportunity for domestic athletes to gain international experience and more successful domestic performances. In order to examine the professional effects of sports, I first looked at the participation of Hungarian university teams in the University Basketball ECs organized between 2013 and 2019 summarized in table no. 4. The statement refers to this period because the Hungarian university basketball team first participated at the continental competition in 2013, and the biennial event was cancelled in 2021 due to the COVID-19 pandemic.

Table 4: Participation of Hungarian teams in the European Basketball University Championships (2013-2019)

Event	Men			Women		
	Hungarian team	Place	Partici-pants	Hungarian team	Place	Partici-pants
2013, Split	University of Debrecen	15	16	University of Pécs	11	12
2015, Koper	West Hungarian university	12	16	University of Physical Education	9	12
2017, Miskolc	University of Debrecen, University of Miskolc	10 12	16	University of Physical Education	3	12
2019, Poznan	University of Physical Education	9	14	University of Physical Education	6	12

Source: Author’s analysis /processing based on own data

It is easy to prove the possibility of gaining international experience. University ECs typically feature the university champions of their home country, but their regulations allow the host institutions to participate in the competitions regardless of their position in the national university championships. The men's team of the University of Miskolc, although the University of Debrecen won the Hungarian championship, was able to start thanks to this.
According to the assessment of the basketball association, the professional standard of the university basketball championship is constantly rising, thanks to the possibility of regular games and the growing prestige of the championship. This is also reflected in the table: the

Hungarian university teams are achieving better and better places. Even so, the advantage of the so-called home field is clearly confirmed for the women, the Hungarian champion Physical Education University achieved by far the best performance so far with the bronze medal at the event organized in Miskolc. For the men, the advantage of the home track is not reflected, the Hungarian champion performed better in 2013 than in 2015, however - due to the different number of participants - the performances in 2017 and 2019 are the same. At the same time, in the case of the team of the University of Miskolc, a better-than-expected performance can be determined, since it participated in the University Basketball EC as a host and not as a champion team, representing a lower playing power on paper.
In the framework of a structured interview with the players and coaches of the University of Miskolc (a total of 13 people), I searched for the answers to the better-than-expected performance. The reason was clearly and unanimously cited as the extra motivation resulting from being able to play in front of relatives, friends, and acquaintances at a prestigious international sports event. Being familiar with the facility was also mentioned as a reason by some of the interviewees, but not significantly, which can be explained by the fact that none of the competition venues for the men was the University Sports Hall, which serves as the home of the team. In the case of the Generali Arena, one could speak of local knowledge, because due to the renovation of the University Sports Hall, the team trained and played there during 4 months before the event, however, the Ice Hall was temporarily transformed into a venue suitable for hosting basketball matches just for the sake of the event. The referees' tendency to favour the home team in critical situations did not arise either, because the majority of the referees were foreigners, furthermore, due to the low number of fans and the cultured encouragement resulting from the nature of the event, there was no psychological pressure on the referees. The travel fatigue of the opponents did not arise as an aspect to be considered because all teams arrived 2 days before the first match, and there was no question of jet lag in relation to the European teams.
The sports political effects of the event were not significant for Hungarian basketball, but they were for Hungarian university sports. Since 2012, the Hungarian University Basketball Championship has been the largest and most important Hungarian university championship, where 16 men and 14 women teams play against each other regularly for 8 months, and the winners gain the right to participate in the European University EC (odd years) or in the European Universities Games (even years). The successful domestic organization strengthened the prestige of the university championship. The event's media coverage and fan attendance were low by the standards of the sport of basketball, but outstanding for university sport. Another effect of the event is that the position of MEFS within the EUSA has been strengthened, and representatives of Hungarian university sports had a better chance of running for committee seats at the next renewal.
The reconstruction of the University Sports Hall was completed before the start of the event, and since then it has been serving the sporting needs of the organized community and the public at a much higher level. The renovation of the sports hall was justified anyway, but the amount and timeliness of the funds are due to the event, so it can be considered the social impact of the University Basketball EC.
The tourism tax related to the event and the expenses realized by the participants during the 9 days - primarily in hospitality - provided a perceptible economic impact at the local level.
We can talk about technological impact in the case of EUSA. EUSA successfully tested a new results management system during the event in cooperation with the organizers. This system has since been generally introduced and used during the European University ECs.
We cannot talk about environmental effects in connection with the event.

8. Conclusions

Based on the examination of the success of the project, it can be stated that the event was successful from the point of view of the organizers (project management), the clients (project owners) and the participants (interest groups involved in the project).

The organizational practice of international sports events can be described by three groups of success factors: task orientation, relationship orientation, random effects (Szabó, Dancsecz, 2009). Random effects, such as extreme weather or riots, did not affect the outcome of the event, the probability of their occurrence was close to zero (indoor sport, and neither the event nor the host settlement posed a security risk). Thoughtful, appropriate planning and effective risk management played a major role in the achievement of the set task goals as success factors. Regarding the relationship orientation, it can be stated that the involvement of partner organizations is considered a key factor in the success of the event.

The partner organizations provided significant financial and non-financial support (e.g. provision of services, professional support, provision of permits) and performed actual tasks for the success of the project. The project management consisted of the managers and/or specialists of the partner organizations, however, the effective cooperation was strengthened by additional synergies. At the time of the event, the managing director of the Organizing Committee not only held the position of MEAFC president but was also a member of the MEFS board and participated in the Miskolc sports management; the leaders of the University of Miskolc were members of the MEAFC management board; and the MEAFC coordinated men's basketball life in Miskolc, thus it was considered an important member organization of MKOSZ. These personal relationships all helped the mutual better understanding of the strategic goals of the individual partner organizations, the development of trust and smooth work.

Based on these, one suggestion can be composed for the project management of international sport events: the identification of partners who can make a meaningful contribution to the success of the event in the preparation phase, involving them into the project in the planning phase and making them interested and inspiring them to be active in the implementation phase is a key factor of the success.

References

Celladurai, P., 2014. *Managing Organizations for Sport and Physical Activity,* 4th Ed., New York: Routledge. https://doi.org/10.4324/9781315213286

Daróczi, M., 2011. *Project Management,* Gödöllő: Szent István University.

Fekete, I., 2000. *The Role of Risk Analysis in Determining the Cash Flow of Investments*, Budapest: Budapest University of Technology and Economics, Ph.D. thesis.

Görög, M., 2001. *General Project Management*, 3rd Ed., Budapest: Aula Publishing House.

Görög, M., 2007. *The Craft of Project Management***,** 2nd Ed., Budapest: Aula Publishing House.

Masterman, G., 2021. *Strategic Sports Event Management***,** 4th Ed., London: Routledge. https://doi.org/10.4324/9781003046257

Stocker, M., Szabó, T., 2017. The Role and Activities of Domestic Sports Management in the Case of Prominent Domestic Sports Events. *Hungarian Sports Science Journals*, 16, pp. 56-77.

Szabó, L., Dancsecz, G., 2009. Success Factors of International Sports Event Organization Projects and Criteria for Assessing Success. *Journal of management science*, 11(5): 18-31.

Turner, J.R., 1993. *The Handbook of Project-Based Management,* Maidenhead: McGraw Hill.

Wysocki, R.K., 2013. *Effective Project Management: Traditional, Agile, Extreme*, 7th Ed., Indianapolis: John Wiley & Sons, Inc.

Bio-note:
Zoltán Rakaczki is a PhD student at the University of Miskolc, his research field is the management challenges of international multisport events. The author has been working in university sports for nearly two decades, and is currently a board member of the Hungarian University Sports Federation and the European University Sports Association. He participated in the organization of many international university sports events. He was the executive director of the Organizing Committee of the University Basketball EC examined in this article, and he made his analysis based on all the information related to the event. With his academic work, he aims to further strengthen his practical knowledge in the field of sports management and sports organization with theoretical foundation, and at the same time to develop the theory and literature of the field with practical knowledge.

HOW DIGITAL TECHNOLOGIES INFLUENCE SUSTAINABILITY PRACTICES IN THE RETAIL INDUSTRY

Emilia Jercan[*], **Teodora Nacu**
Department of International Business and Economics, The Bucharest University of Economic Studies, Bucharest, Romania
emilia.jercan@gmail.com
nacuteodora21@stud.ase.ro

Abstract: *Digital technologies are becoming fundamental elements of the business environment, practitioners, policymakers and researchers. An essential component for companies in this new era is the Enterprise Resource Planning (ERP) system used for the companies' management. The ERP is part of an Information System (IS) that permits the interaction between people and technology, being represented as an agile, intuitive and planned tool. The purpose of an ERP is to provide information suitable to support decision-making and strategies inside a business or industry of the economy. Our study intends to explore how digital technologies influence the sustainable practices of retail in the new era of Industry 4.0.*

Keywords: Digital technologies; Industry 4.0.; sustainable companies; ERP systems; sustainability.

JEL Classification: K29; M14; L25; M21; F23.

1. Introduction

Digital and new technologies contribute to having a defined sustainability strategy and an agenda inside the new emerging circular economy cycle (Kristoffersen et al., 2021:241-242). Modern digitised companies currently play a crucial role in employing and finding new technologies progressing toward the United Nations' 17 SD goals defined in 2015. As a result of Industry 4.0., which includes the use of ERP systems, businesses have started to integrate into their processes essential elements such as supply chain, internal organisation (e.g. HR), Big Data and analytics tools etc.
The ongoing transformation of the industrial sector around the world is referred to as 'Industry 4.0', and the difficulties of it have been quickly accepted by large businesses, especially the ones introducing technological solutions. Corporate performance is a crucial element that supports the company's overall success and supports innovation inside businesses. A variety of software programs have been created gradually (Ghezzi & Cavallo, 2020), some of which have been merged into applications like Enterprise Resource Planning (ERP). The ERP is part of the Information System (IS), a social system that permits the interaction between people and technology. It is considered agile and intuitive, has a planned structure and supports decision-making and strategies inside businesses (Matende & Ogao, 2013:519-522). The ERP systems aim to integrate into the business processes

[*] Coresponding author: Emilia Jercan
Cite as:

Jercan, E., and Nacu, T., 2023. How Digital Technologies Influence Sustainability Practices in the Retail Industry. *Oradea Journal of Business and Economics*, 8 (1), pp. 93–104, http://doi.org/10.47535/1991ojbe168.

technologies such as Big Data and analytics tools, or support sustainability reports and visions (Shadrack, 2020:39-40). They are used to oversee the organizations operations' (e.g. accounting, compliance, project management and distribution chain operations).
Since the term Industry 4.0, often used as a synonym for smart manufacturing or factory, was initially mentioned in 2012 (BMBF), Rauch & Matt agree that a lot has changed in recent years, especially in the field regarding innovation and production digitization. 'The first years were largely dominated by discussing what the collective term Industry 4.0 means, how it can be defined and which core technologies support the fourth industrial revolution' (Rauch & Matt, 2021:4). Additionally, Narvaez Rojas et al. mention the term 'Society 5.0', a Japanese initiative that was created to play a more prominent part for the progress of the nation and its development. It emphasises the idea that no human being should be denied access to the technological progress of our society (Narvaez Rojas et al., 2021:1).
IT technology has given organisations a wide range of tools to help with managerial responsibilities while incorporating these advanced technologies into sustainable businesses. It reflects both internal purposes, for example, competitiveness and external aims, such as government requirements (Alraja et al., 2022:3). However, there is still much uncertainty regarding the impact of ERP usage on business performance and the factors influencing this relationship for companies in general, but especially for SMEs (AlMuhayfith & Shaiti, 2020). Regardless of the aim to implement ERP systems, small and medium-sized businesses must overcome multiple challenges of the human and financial resources necessary to systematically research the benefits and threats of implementing Industry 4.0 (Rauch & Matt, 2021:v).
As a result, this article contributes to the ERP literature by analysing how digital technologies and ERPs influence the growth of sustainable-oriented companies. This paper aims to review the current research surrounding the implementation of ERP systems, explore this relationship using a selective cluster of companies and analyse their level of technology based on successful ERP implementation. This paper includes a revision of the ERP systems, proposing a literature review that covers existing research on the topic. Secondly, the aim of this research is introduced, considering what it seeks to demonstrate, which is to determine how digital technologies influence sustainable practices of the retail sector in the new era of Industry 4.0. Finally, there were identified certain limitations of the paper and proposed future lines of study for policymakers, students and researchers.

2. Literature review

As per Melville's et al. definition (2004), IT business value is defined 'as the organisational performance impacts of information technology at both the intermediate process level and the organisation-wide level, and comprising both efficiency impacts and competitive impacts' (2004: 287). Some of the advantages that IT can bring to a business, as identified by the authors are considered 'productivity enhancement, profitability improvement, cost reduction, competitive advantage' (2004: 287). Safiullin et al. (2019:4-5) indicate also that at the moment many cities and regions have been actively working on implementing digital policies to expand productivity in the public sector and sustainability.
Today the implementation of ERPs is very present in business schedules and of rising importance, including the small and medium enterprises, regardless of their more limited resources concerning larger firms and corporations. According to Brenner (2018), although ERP systems can create shared values for the company and its stakeholders, they can support society and the company's overall success. They can also add more complexity to the business. Following Deep et al. (2008), ERP systems used to be driven only towards large corporations and companies, yet today the SMEs field has started to obtain more popularity, as it is still an unexploited enough market. SMEs in particular face many challenges in this era of the current fast-paced business environment, including competitive

pressure and ongoing IT advancements used by most businesses to obtain competitive advantages. The difficulties, however, impact how enterprises are run, thus on their management. Implementing Enterprise Resource Planning systems has different effects on various organisations. This is why one of the goals of our article is to outline the most significant digital technologies used in the Romanian retail sector, while also observing what effects these can have on business sustainability results.
It is pertinent to assume that a business can protect itself from various economic uncertainties if it adopts digital tools and invests in new technologies, for instance, incorporating digital technologies into business models brings high competitiveness and advantages (OECD, 2021: 9-14). Adopting new emerging technology means developing a strategy and if an organisation develops sustainable tools and invests in modern technologies, it could have a significant impact and protect the business from various economic challenges. This is why nowadays many companies employ enterprise resource planning (ERP) software, which has grown in popularity in recent decades, to boost corporate performance. Implementing Enterprise Resource Planning systems has different effects on various organisations, which is why one of the goals of our article is to outline the most significant elements involved in the adoption of enterprise resource planning systems. Figure 1 summarises some of the most important elements of the ERP model based on the Author’s research.

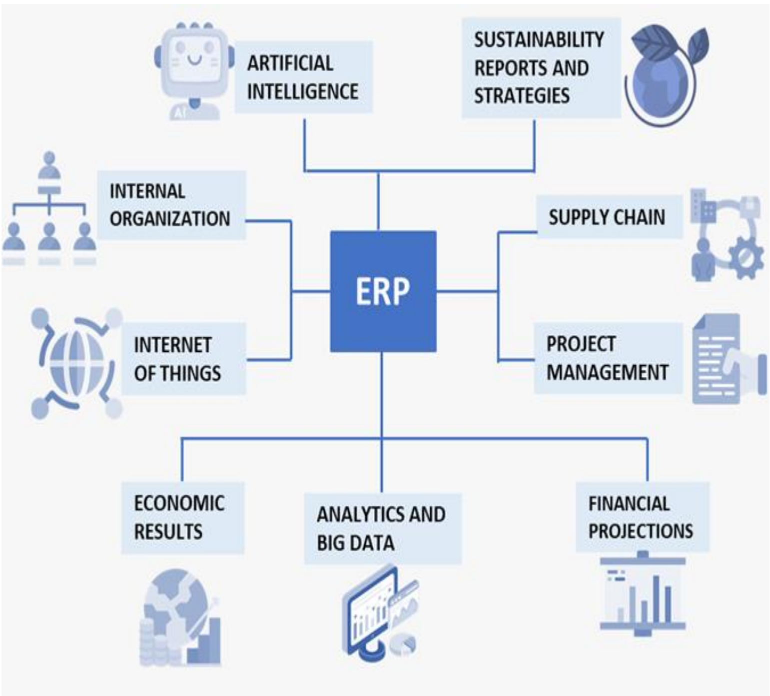

Figure 1: Elements of the ERP’s model
Source: Author’s own creation

To gain a comprehensive picture of the progress of ERP systems, authors Costa et al. (2016: 1-4) reviewed existing studies on ERP systems from recent decades. They revealed that although research on ERP systems has risen lately, the majority of the studies concentrate only on the deployment phase. According to Kallunki et al., ‘ERPs are organisation-wide and integrated information systems that can be used to manage and

coordinate all the resources, information, and functions of a business from shared data stores' (Kallunki et al., 2011:21). As planning systems, an ERP can make a substantial contribution to an organisation's effectiveness in the current fast-moving corporate climate. However, its implementation is considered a highly lengthy task that has several limitations due to its intricate structural design, which can generate certain established implementation challenges (Sumner, 2000). 'Information systems potentially change an organisation's structure, culture, politics, and work; that is the reason why there is often considerable resistance to them when they are introduced' (Veljanoska & Axhiu, 2013: 8).
For example for SMEs with little expertise in IT, or with limited access to innovation capabilities, and scarce financial and human resources, these threats become indisputable. These lead to businesses having used various tactics and changing initiatives to cope with these obstacles, aiming to improve the efficiency of their internal processes. As per Scott and Wagner, as cited by Molina-Castillo et al. (2022), 'ERP implementation processes can be hard for companies, for instance when specific ERP software does not match the existing operational model, needs to be aligned with business processes or integrated with other applications, e.g. management information or knowledge-management systems' (2022:2).
Following Brenner, 'Digitization has become widespread, affecting each aspect of the global economy. Consequently, organisations are busy exploring how large-volume data—or "big data"—can be usefully deployed to create and capture value for individuals, businesses, and organisations' (Brenner, 2018:1-2). Therefore businesses (Beheshti, 2006:190) seek to obtain certain advantages by reinterpreting their business model through experimentation and development (Weking et al., 2020). Nonetheless, given the fact that today getting information from various systems and combining it to make information circulate effortlessly throughout the firm is one of the biggest issues that businesses deal with, the ERP system can certainly bring some significant advantages. For example, combining information not only inside the company but also coordinating it with suppliers and other partners or stakeholders. Veljanoska and Axhiu (2013) explain that an ERP system can be of service to various business functions through a unique database that stocks information useful for CRM, Finance, HR or Manufacturing among others, containing information that is always current and available to every part involved in the process.
Today's firms are finding that they can become more flexible and productive by coordinating their business processes more closely and, in some cases, integrating these processes so they can focus on efficient management of resources and customer service. (...) Intended to ease the administration and optimization of internal business processes across a corporation, ERP packages have become the competitive tool for most large trade organisations (Veljanoska & Axhiu, 2013: 6).
Independent of the size of the business, whether it's an SME or a larger company, they will all experience concrete and immaterial advantages, involving benefits such as 'business processes enhancement, best practices implementation, and enterprise assimilation and combination' (AlMuhayfith & Shaiti, 2020:3). This is leading to companies being ready to start investing in this kind of new technology because of the incredibly significant gains. For instance, according to research conducted by Market Research Future (2022), the global ERP market software is valued at $50.84 million in 2021 and is expected to reach $117.68 by 2030. Therefore, it has become a useful tool for competitive businesses all around the world, being employed in numerous areas including governments, NGOs and other institutions as well.
Further, our article focuses on the methodological side, including the materials and methods used to conduct this research highlighting how digital technologies influence companies, more specifically practises from the retail industry to become more sustainable, competitive and productive at the same time.

3. Methodology

The crisis of the COVID-19 pandemic has gradually changed the existing living conditions, with a transition from the traditional market economy to the digital market (Nosova & Norkina, 2020: 651). Digital technologies are offering new opportunities to companies forcing them to create innovative business models and migrate from conventional-centric approaches to digitally-based service-oriented ones (Paiola & Gebauer, 2020:244).

This paper is based on a qualitative research method and it aims to describe how digital technologies influence sustainable practices in the retail industry. But at the same time, it is following a quantitative analysis by comparing different data of Romanian-based realities, collecting and transforming them to qualitative results. Digital technologies such as the Internet of Things, Cloud platforms, Big Data and Data Analysis are offering companies the possibility to leverage technology to innovate their strategies, align with regulations and implement new business models to comply with standards and grow their productivity. The main focus of the research regards the following three aspects:

- selecting a cluster of big companies from a based-Romanian sector and analysing the most relevant digital technologies used and their sustainability results;
- understanding how digital technologies influence sustainability practices in the retail industry;
- representing a situational analysis with a SWOT matrix by understanding how digitalization can be related to sustainable practices.

We decided to use the comparison, the case study, and the official document analysis as research methods/instruments for our article, as we considered these efficient ways of getting valuable insights into where Romania is situated in terms of ERP implementation in the EU context, by studying data in Eurostat corresponding to the year 2021, the most recent set of available data. For example, comparing this type of data which includes most of the European countries helped us better understand and provided us with a clearer picture of whether Romania is progressing towards new and modern digitalization technologies or is unfortunately staying behind, under the European average.

Additionally, we decided to analyse a cluster of Romanian-based hypermarkets by looking at their annual sales, comparing data available in Statista, and their sustainability results according to the official documents found on their websites. By consulting companies' reports from the last five years to gather information about the digital technologies used, where they're currently standing, and later comparing them to the Digital and Sustainability Survey of 2021 by Bain & Company and the World Economic Forum, we were able to summarise a large quantity of information concerning the technologies used by the top five retailers in Romania and the results produced.

Finally, we realised a SWOT analysis composed of strengths, weaknesses, opportunities and threats, as a way to understand how digitalization is related to sustainable practices in the retail industry in Romania.

We would also like to add the fact that this approach cannot be inferred for other environments without first realising an in-depth analysis as well, but in the current situation it allowed us to have an improved and thorough understanding of the topic discussed.

4. Results and discussion

4.1. Relevant digital technologies used in Romania and the results obtained.

It is generally accepted that businesses have different sizes and operate in various industries. The company's sizes are identified as the following: a) a micro-entity has from 1 to 9 employees; b) a small business has from 10 to 49 employees; b) a medium-sized from 50 to 249 employees; and d) a large company has +250. A company's size is defined by the

number of employees, its final balance sheet, and any other qualitative factor that plays an essential role in identifying the type of business.
This article focuses on the retail industry, more exactly on big realities such as hypermarkets, that combine grocery supermarkets and department stores and offer a high variety of products.
When looking at ERP implementation based on the size of a business, it appears that ERP software applications were adopted in 2021 by 38% of EU enterprises (ERP) according to Eurostat's most recent data (2021), going from 33% for small enterprises to 81% for large enterprises. Unfortunately, as per the statistics available, Romania presents the lowest percentage of companies that use ERP with only 17%, followed by Hungary at 18% and Bulgaria at 22%. Out of all the realities considered in the research, only North Macedonia has a lower score with 15% of the enterprises using ERP. On the opposite end, we have Belgium (57%), Portugal (52%) and Denmark (50%). Considering this, it is fundamental to acknowledge and improve the level of ERP implementation in our country.

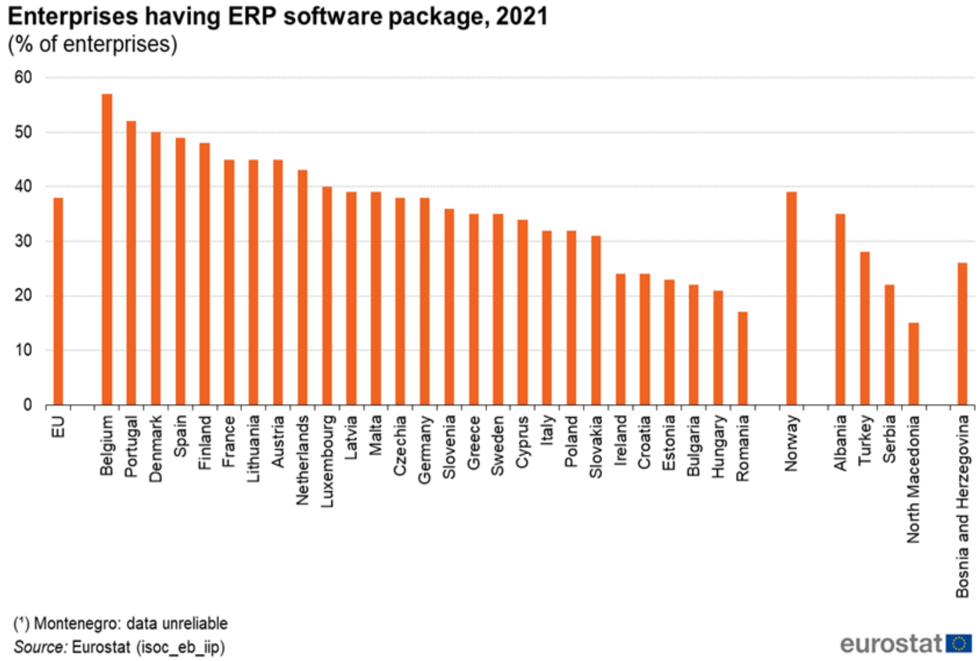

Figure 2: Percentage of enterprises using ERP in 2021
Source: Eurostat (2021)

To reply to the first point of the methodology, we select a cluster of Romanian-based Hypermarkets and analyse the most relevant digital technologies used for them and their sustainability results. Before starting with the proper analysis, we considered numbers from Statista data published in February 2022 about an online ranking of retail chains in the food category. The top position of grocery retail in Romania and the most powerful five groups of the list are Lidl Discount and Kaufland from the Schwarz Group, Carrefour, Profi and Mega Image (Ahold-Delhaize) with RON 54.46 billion annual sales of the modern retail as shown in Figure 3:

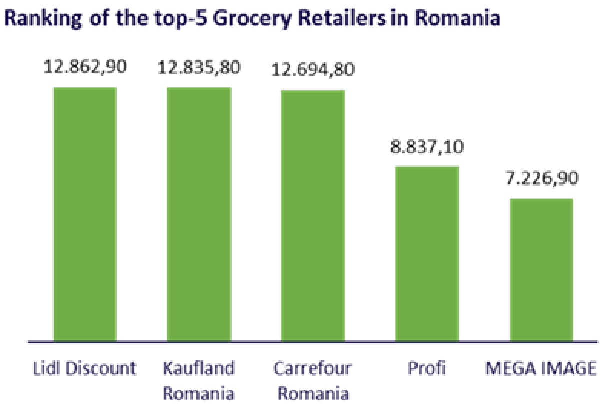

Figure 3: Top 5 Grocery Retailers in Romania
Source: Author's own creation

As shown in Figure 3, the top 5 grocery retailers that have the highest results in the Romanian food market are also the more known Hypermarkets in the country. Therefore, to understand the most relevant digital technologies used in the retail sector and their sustainability results, we proceeded as follows: 1. we consulted companies' reports during the past five years (where available on their online websites), 2. compared them with the 2021 survey of Bain & Company and 3. finally, summarised their overall results represented below. Therefore, Figure 4 indicates the main digital technologies that have been used in the past years and the effects they generally produce.

Figure 4: Technologies used by Hypermarkets and their results
Source: Author's own creation.

Digital technology requires a highly balanced sustainability strategy that understands its social and economic impacts. Although new and digital technologies such as Artificial Intelligence, IoT etc. present transformative opportunities to address environmental challenges, if left unguided, they can affect the environment, diminish people's interaction and bring losses to SMEs or local companies. If businesses want to develop safe digital technology, they must ensure that it aligns with societal requirements and values in all ways. Today, digital technologies are often being used to optimise the use of resources, produce economic advantages and bring a green and circular economy through various sectors of industry (Wynn & John, 2022).

4.2. The link between digital technologies and the retail industry in Romania

To reply to the second point of methodology, regarding how digital technologies influence sustainability practices of the retail industry, in Figure 5 we summarise the ways these big realities are using digital technologies to improve their business. Retailers aim to digitalize the entire activity of the business, rather than individual functions and areas, as the main challenges to the use of digital technologies in big companies lie in the technical, organisational and administrative plans. For designing the elements of Figure 5 we consider the Digital and Sustainability Survey of 2021 by Bain & Company and the World Economic Forum.

Figure 5: Top ten ways Hypermarkets are using digital technologies to improve their sustainability
Source: Author's own elaboration from Sustainability Survey of 2021 by Bain & Company & the World Economic Forum Figure.

Accenture research from 2017 finds that 'digital technologies and AI could increase profitability by 38% by 2035 and lead to $14 trillion in economic growth across 16 industries in 12 countries by 2035, but this will only happen if organisations adopt the "people first" approach and take bold and responsible steps to apply AI technologies in their business (Accenture, 2017).

4.3. Swot Analysis: understanding the link between digitalization and sustainable practices.

Finally, to respond to the last point of the methodology, we represent a situational analysis with a SWOT matrix (composed of strengths and weaknesses, opportunities and threats) by understanding how digitalization can be related to sustainable practices.

STRENGHTS

1. Reduction of operation and maintenance costs
2. Higher quality of products and sustainable practices
3. Faster services for clients
4. Increased safety and recycling

WEAKNESSES

1. High costs of development and implementation of new technologies
2. Lack of strategic planning
3. Effects of the change in operations
4. Control and monitoring of the digital system

OPPORTUNITIES

1. New lines of business and competitiveness
2. Technological maturity and reduction of surpluses
3. Efficient and predictive supply-chain

THREATS

1. Poor integration of consumers
2. Changes in legislation, regulations
3. Systems vulnerable to cyber-threats
4. European economic uncertainty

Figure 6: SWOT Matrix
Source: Author’s own creation

The SWOT analysis is related to the relationship between the digital technologies of hypermarkets, their users and external/internal factors. The elements of the SWOT table were obtained considering an internal data analysis of the Romanian-based hypermarket's situation. The weaknesses represent negative points that can occur, namely situations that will arise during the Hypermarket's digitization process. The main strengths consist of the resources that Hypermarkets can use effectively to achieve their objectives or actions already implemented or under development in the different segments of the industry. The opportunities are possible results after implementing digital technologies or openings for something positive to happen. Finally, threats include anything that can negatively affect the industry from the outside, such as shifts in market requirements, supply-chain problems, national economic competitors with better prices etc.

5. In conclusion

This article aims to outline how digital technologies influence the growth of sustainable-oriented companies. Our research has numerous advantages in understanding the idea behind digitalization and new technologies, which is current and involves various segments of business and society in general. However, this analysis can have limitations as conducting the research from only one perspective or reducing its perimeter cannot be always exhaustive. It is still challenging for governments, academics or institutes to put together unique studies or official documents about digital technologies since it is a broad subject, continuously evolving. Our findings underline that digitalization influences the future of economies and sustainable-oriented companies.

Thus, digital technologies bring sustainable practices and competitiveness to the business environment. To revive economies, it is essential to expand them with investments in digital tools, new technologies, sustainable practices, green economy, renewable sources and green energy. Access to new digital technologies and sustainability practices brings

diversity to the economy and prepares governments to compete with other European realities.
Governments, regulators, businesses and individuals have the responsibility to embrace digital technologies to facilitate processes and therefore put a greater focus on digitalization as the right direction to engender sustained change. The EU market has numerous benefits for companies, for example, efficiency, where the allocation of resources is the most valuable. Many industries and firms have a considerable degree of market power, as investing in digital technologies can be a key to revenues. The practical solutions we propose are to offer companies a basis for understanding how digital technologies bring concrete benefits to businesses. Thus, the practical solutions that a company can adopt to streamline its processes consist in using electronic tools, systems, devices and resources which generate, store or process data. Investing in a digitally advanced product entails high initial costs but certainly higher future revenues if all market conditions are favourable.
Decision makers need to focus on key choices, as greater use is made of technology in all its forms to deliver a sustainable environment by 2030 and further.
It is up to interested researchers to collect the elements and information of this study and develop it further, as the ERP subject is iterative and gives concrete results to business realities. Finally, considering our study, we identified that there are few scientific articles focusing on the influence that digital technologies have on the growth of sustainable-oriented companies in Romania, and even fewer focusing on Romanian SMEs. We support the idea that there is a real need for further research regarding the object of our study, and we hope that this paper will be a point of future research.

References

Accenture, 2017. *How AI Industry Boosts Profits and Innovation* [online], available at: accenture.com/fr-fr/_acnmedia/36dc7f76eab444cab6a7f44017cc3997.pdf [accessed 01.11.2022].
AlMuhayfith, S., Shaiti, H., 2020. The Impact of Enterprise Resource Planning on Business Performance: With the Discussion on Its Relationship with Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(3): 87-111. http://dx.doi.org/10.3390/joitmc6030087
Alraja, M.N., Imran, R., Khashab, B.M., Shah M., 2022. Technological Innovation, Sustainable Green Practices and SMEs Sustainable Performance in Times of Crisis (COVID-19 pandemic). *Information Systems Frontiers*, 24, pp. 1081-1105 https://doi.org/10.1007/s10796-022-10250-z
Beheshti, H., 2006. What Managers Should Know About ERP/ERP II. *Management Research News*, 29(4): 184-93. https://doi.org/10.1108/01409170610665040
BMBF., 2012. *Zukunftsbild Industrie 4.0* [online], available at: https://www.plattform-i40.de/PI40/Redaktion/DE/Downloads/Publikation/zukunftsbild-industrie-4-0.pdf?__blob=publicationFile&v=4 [Accessed 23.10.2022].
Brenner, B., 2018. Transformative Sustainable Business Models in the Light of the Digital Imperative - A Global Business Economics Perspective. *Sustainability*, 10(2), 4428. https://doi.org/10.3390/su10124428
Costa, C. J., Ferreira, E., Fernando, B., Aparicio, M., 2016. Enterprise Resource Planning Adoption and Satisfaction Determinants. *Computers in Human Behavior*. 63(2): 659-71. https://doi.org/10.1016/j.chb.2016.05.090
Deep, A., Guttridge, P., Dani, S., Burns, N., 2008. Investigating Factors Affecting ERP Selection in Made-to-Order SME Sector. *Journal of Manufacturing Technology Management*, *19*(4): 430-46. https://doi.org/10.1108/17410380810869905

Eurostat., 2021. E-business Integration [online], available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-business_integration [accessed 1.11.2022].

Ghezzi, A.,Cavallo, A., 2020. Agile Business Model Innovation in Digital Entrepreneurship: Lean Startup Approaches. *Journal of Business Research*, Volume 110, pp. 519-537, https://doi.org/10.1016/j.jbusres.2018.06.013.

Kallunki, J.-P., Laitinen, E.K., Silvola, H., 2011. Impact of Enterprise Resource Planning Systems on Management Control Systems and Firm Performance. *Int. J. Account. Inf. Syst.,* 12(1): 20–39. https://doi.org/10.1016/j.accinf.2010.02.001

Kristoffersen, E., Blomsma, F., Mikalef, P., Li, J., 2020. The Smart Circular Economy: A Digital-Enabled Circular Strategies Framework For Manufacturing Companies. *Journal of Business Research*, 120, pp. 241-261, https://doi.org/10.1016/j.jbusres.2020.07.044

Matende, S., Ogao, P., 2013. Enterprise Resource Planning (ERP) System Implementation: A Case for User Participation. *Procedia Technology*, 9, pp. 518-526. https://doi.org/10.1016/j.protcy.2013.12.058

Melville, N., Gurbaxani, K.K.V., 2004. Review: Technology Information And Performance: An Integrative Model of IT Business Value. *MIS Quarterly,* 28, pp. 283-322. https://doi.org/10.2307/25148636

Molina-Castillo, F., Herrera, R., López-Nicolás, C., Bouwman, H., 2022. The Role of ERP in Business Model Innovation: Impetus or Impediment. *Digital Business*, 2(2): 1-12. https://doi.org/10.1016/j.digbus.2022.100024

Narvaez Rojas, C., Alomia Peñafiel, G.A., Loaiza Buitrago, D.F., Tavera Romero, C.A., 2021. Society 5.0: A Japanese Concept for a Superintelligent Society. *Sustainability*, 13(2), 6567. https://doi.org/10.3390/su13126567

Nosova, S.A., and Norkina, A.N., 2020. Digital Technologies s a New Component of the Business Process. *Procedia Computer Science*, 190, pp. 651-656. https://doi.org/10.1016/j.procs.2021.06.076

OECD., 2021. Beyond COVID-19. Advancing Digital Business Transformation in the *Eastern Partner Countries* [online], available at:https://www.oecd.org/eurasia/Covid19_%20Advancing%20digital%20business%20transformation%20in%20the%20EaP%20countries.pdf [accessed 10.11.2022].

Paiola, M., Gebauer, H., 2020. Internet of Things Technologies, Digital Servitization and Business Model Innovation in BtoB Manufacturing Firms. *Industrial Marketing Management*, 89, pp. 245-264, https://doi.org/10.1016/j.indmarman.2020.03.009.

Rauch, E., Matt, D.T., 2021. Status of the Implementation of Industry 4.0 in SME's and Framework for Smart Manufacturing. In D.T. Matt, V. Modrák, H. Zsifkovits Eds. *Implementing Industry 4.0 in SME's*, Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-70516-9_1

Safiullin, A., Krasnyuk, L., Kapelyuk., Z., 2019. Integration of Industry 4.0 Technologies for "Smart Cities" Development. *IOP Conference Series: Materials Science and Engineering* 497(1): 012089. https://doi.org/10.1088/1757-899X/497/1/012089.

Shadrack, K., 2020. Enterprise Resource Planning: Past, Present, and Future. *New Review of Information Networking*, 25(1): 37-46, https://doi.org/10.1080/13614576.2020.1742770

Strategic Market Research., 2021. *Market Research Report* [online], available at: https://www.strategicmarketresearch.com/market-report/erp-software-market [accessed 10.11.2022].

Sumner, M., 2000. Risk Factors in Enterprise-Wide/ERP Projects. *Journal of Information Technology*, 15(4), 317-27, https://doi.org/10.1080/02683960010009079

Veljanoska, F., Axhiu, M., 2013. Information Systems as Support to Corporate Management. *Management Information Systems*, 8(4): 3-9.

Weking, J., Stöcker, M., Kowalkiewicz, M., Böhm, M., Krcmar, H., 2020. Leveraging Industry 4.0 – A Business Model Pattern Framework. *International Journal of Production Economics,* 225, pp. 1-17. https://doi.org/10.1016/j.ijpe.2019.107588

Wynn M., Jones P., 2022. Digital Technology Deployment and the Circular Economy. *Sustainability*, 14(15): 9077. https://doi.org/10.3390/su14159077

Bio-notes:

Emilia Jercan is a PhD student in International Economics at the Bucharest University of Economic Studies, specializing in the internationalization process and strategies adopted by Romanian SMEs. With a Master's in International Economic Diplomacy, the author brings a unique perspective to their research on the role of SMEs in the global economy. Their current interests include exploring the challenges and opportunities faced by Romanian SMEs in the process, as well as the connection between sustainability and internationalization. The author has so far published various articles in publications such as the Romanian Economic Journal and presented their work at various international conferences.

Teodora Nacu is a PhD student in International Economics at the Bucharest University of Economic Studies, with a Bachelor's in International Studies and European Institutions and a Master's in Administration and Public Policy from the State University of Milan. Their current interests mainly regard the fields of sustainability, green economy, digitalization, Corporate Social Responsibility and how sustainability impacts and can be measured inside businesses in Romania and globally. The author has a high interest in the quantitative part of the just-mentioned concepts regarding data quality, data analysis, analysis of results, economic-financial analysis, the definition of KPIs for benchmark analysis etc.