THE RELATIONSHIPS BETWEEN ENTREPRENEURIAL FACTORS AND ECONOMIC GROWTH AND DEVELOPMENT: THE CASE OF SELECTED EUROPEAN COUNTRIES

Daniel Francois Meyer[1], Natanya Meyer[2]

Abstract: *Globally, entrepreneurship and its link to economic growth, development and prosperity has been a topic of continued discussion. Entrepreneurship provides various direct and indirect positive results within developed and developing economies. Research suggests that the entrepreneurship development may have a positive effect on several economic variables. The purpose of this study, therefore, was to identify the relationships between three entrepreneurial variables (entrepreneurial intention - EI, Early-stage entrepreneurial activity - TEA and established business ownership - EBO) and, firstly, economic development using GDP per capita and, secondly, economic growth (GDP) using an econometric analysis method. The study followed a quantitative empirical approach using secondary data from 2001 to 2019 for selected European countries (Austria, Croatia, Hungary, Poland and Slovenia). Countries were selected based on their homogeneous traits and availability of data. Long and short-run relationships between the mentioned variables were tested using a pooled panel analysis. Results indicated a long-run relationship between the variables by using the Fisher-Johansen cointegration analysis. Further results of the analysis indicated that both TEA and EBO are significant predictors at 5% significant levels respectively of economic development (GDP per capita) and economic growth (GDP). In conclusion, the study proved that links between the mentioned variables do exist and that entrepreneurial activity should be stimulated and supported as it has a significant impact on economic growth and development at various degrees of impact.*

Keywords: Economic growth; entrepreneurial factors, entrepreneurial intentions (EI), early entrepreneurial activity (TEA), established business ownership (EBO), European countries.

JEL Classification: E27, L26

Introduction

For decades, economic growth has been used as an indicator of an economy's progress. From a neo-classical perspective, Gross Domestic Product (GDP) or economic growth, is defined as a cumulative rise in output including the accumulation of production factors such as labour and capital, reflecting a quantifiable measurement of a country's improvement or otherwise referred to as economic growth (Masoud, 2014). Economic conditions such as high unemployment and stagflation prompted new interest in the underlying factors that contribute to supply-side economics from around the 1980s (Wennekers & Thurik, 1999). Researchers such as North and Thomas (1973) and Van de Klundert (1997) opine that aspects pertaining to the institutional foundations of an economy can be considered as some of the most important amongst these underlying factors. At the centre of this institutional foundation, and in many cases somewhat undervalued, is the role of economic agents who directly and indirectly link institutions at micro level to the macro level where economic outcomes

[1] *TRADE Research entity, North-West University, South Africa.*[2] *DHET-NRF South African Research Chair in Entrepreneurship Education, College of Business and Economics, University of Johannesburg, South Africa*
✉ corresponding author:Natanyam@uj.ac.za
✉ Daniel.Meyer@nwu.ac.za

occur (Wennekers & Thurik, 1999). Forming part of these economic agents are millions of small, medium and large business entrepreneurs contributing to economic growth at various levels (Meyer & Meyer, 2019; Šebestová & Sroka, 2020). Increased entrepreneurial activity, in theory, should lead to improved economic growth, employment and continued economic development. The importance of entrepreneurship is evident based on an increased number of educational facilities introducing business modules into their curriculums (Greblikaite et al., 2016). Increased entrepreneurial activity, in theory, should lead to improved economic growth, employment and continued economic development. Authors such as Almodóvar-González et al. (2020), Meyer and Meyer (2019), Folorunsho et al. (2019); Meyer and De Jongh (2018) and Meyer and Meyer (2017) have also empirically proven this. Furthermore, many countries have contributions in excess of 50 percent towards GDP as a result of Small and Medium Enterprise (SME) activity. Some of these European countries which have a strong SME to GDP contribution ratio include Austria, France, Germany, Italy, Netherlands, Poland, Portugal, Slovakia, Slovenia and Spain (Herrington & Kew, 2017). Entrepreneurship in these countries contribute more than half of the total economy. Increased business or entrepreneurial activity has a multiplier effect leading to increased employment opportunities and improved market stability (Ambrish, 2014). This is once more proof that a healthy entrepreneurial ecosystem can lead to a healthy economic environment. Although measuring entrepreneurial activity is not as easy and readily available as some economic variables, there are still a variety of sources to use which determines the level of entrepreneurial activity in a country. One of these sources is the Global Entrepreneurship Monitor (GEM). The GEM issues annual data on several participating countries using a range of entrepreneurial indicators such as intention, fear of failure, ease of starting a business, perceived opportunities etc. For the purpose of this paper the three variables entrepreneurial intent (EI), early-stage entrepreneurial activity (TEA) and establish business ownership (EBO) were selected (GEM Consortium, 2019a). The purpose of this study was thus to determine the relationships between the three entrepreneurial variables and, firstly, economic development using GDP per capita and, secondly, economic growth (GDP) using an econometric analysis method

Literature Review

Entrepreneurship has been defined by numerous academics and economists over the years. Some of the first definitions were developed by iconic economists and researchers such as Cantillon who defined an entrepreneur as being a risk-taker who considers supply and demand as one of the main factors in order to create balance and who is responsible for bringing prices and production in line with market demand (Bula, 2012). Schumpeter described an entrepreneur as someone who creates novel products and services and brings it to the market through new distribution system

combinations (Schumpeter, 1942; De Bruin et al., 2006; Máté et al., 2019). Kirzner (1973) goes on to define an entrepreneur as an alert person who timeously identifies opportunities and act on them by creating new businesses. From the aforementioned, it is apparent that key aspects contained in the definitions of entrepreneurship include taking (calculated) risks, being innovative, creating new processes and combinations of resources, opportunism, contributing to the economy, identifying and acting on opportunities and solving social or market needs and problems and creating new businesses (Bird & Brush, 2002; Ambrish, 2014; Bąk, 2016; Meyer, 2018; Oláh et al., 2019). The level of entrepreneurship in an economy is rather complex to measure (Wennekers & Thurik, 1999). Nonetheless, several entrepreneurial indicators are released globally by organisations such as the World Bank and GEM Consortium. More specifically, the GEM publishes annual reports on several participating countries using survey-based research and is the only global research source collecting data directly from entrepreneurs (GEM Consortium, 2019b). The GEM distinguishes between six entrepreneurial stages. These are depicted in Figure 1.

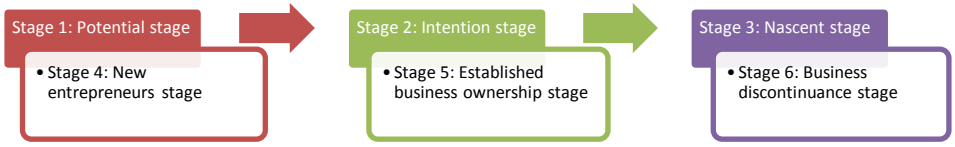

Figure 1: Entrepreneurial stages
Source: Turton and Herrington (2012); Herrington and Kew (2013).

Bosma and Kelley (2019) divides these stages into three categories namely, conception (Stage 1 and 2), firm birth, also referred to as early-stage entrepreneurial activity or TEA (Stage 3 and 4), and persistence (Stage 5). Stage 6, business discontinuance, only happens in some cases and does not specifically form part of the three categories.

Economic growth has been a well-researched area dating back centuries and till today economists and researcher alike are focused on identifying factors promoting sustained growth (Ahlstrom et al., 2019). Former research focused more profoundly on macro-economic variables influencing economic growth and tended to ignore the micro side. Traditional neoclassical economic models and theories such as that of Solow (1956) and Rostow (1959) did not explicitly include entrepreneurs as key economic agents (Folorunso et al., 2019). In fact, entrepreneurship did not receive much attention in historical growth models. One of the first economists to specifically refer to the concept of entrepreneurship was Cantillon during the mid-1700s (Meyer, 2018). One of his discussions mentioned that entrepreneurship has a positive impact on the development of an economy as it creates exchange, price fluctuations, money transfer and increased competition and these all lead to bringing prices and production

in line with demand (Cantillon, 1755 [1959]). Several economists, such as Schumpeter, Von Thünen, Baumol, Menger, Von Mises, Marshall, Knight, Schultz and Kirzner have since also highlighted the importance of entrepreneurship as a stimulating factor to economic growth (Bula, 2012). A central theme around economic growth is probably the alignment of coordinated efforts within an economy. The "big push" theory by Rosenstein-Rodan (1961) explains this concept and states that economies cannot grow if there is coordination failure among complementary industries. Several factors should be in place to insure this coordination or "big push" effect and one of these essentially, is the increase in economic agents' activity which ultimately includes entrepreneurship. Entrepreneurs act as decision makers essentially making choices on what to sell, how much to sell and at what price based on demands from the market. This is done by rational calculation (Glavan, 2007). Von Mises (1920 [1990]) mentioned that this economic calculation is imperative in coordinating the intricate network of supply and demand leading to and advanced economy. Entrepreneurs have a vigorous sense for selecting competing and rewarding production processes. Schachtebeck et al. (2019) opine that even intrapreneurship or the level of corporate entrepreneurship is important in this aspect. Simply put, when an entrepreneur's endeavours resulted in a profit, then resources were in line with market needs and if a loss occurred, inputs were diverted and wasted on less important actions (Glavan, 2007). Although the ideal would be to have a perfect combination of coordinated economic decision-makers, this is not always the case as many other factors are also present within a market system. However, entrepreneurs may choose their willingness to participate in market activities based on the incentive provided. Sautet (2002:31) summarises this by stating that "the entrepreneurial element in human action is the force that drives the market system towards a greater level of coordination. This force is unleashed because of the existence of pure profit that necessarily exists in disequilibrium situations."

Herrington et al. (2015) mention that understanding the measurement and impact of the relationship between entrepreneurship and economic growth is a vital part in assisting decision-makers in a country on the distribution of resources and direction of policy formulation. Several studies examining the link between entrepreneurship and economic growth have been done in the past and although results differ in some cases, enough empirical evidence exists proving that there is a connection between the said variables. For example, a study conducted by Folorunsho et al. (2019) based on 44 developing countries for the period 2005-2014, revealed that entrepreneurship had a strong, positive and significant influence on economic growth. Another study by Almodóvar-González et al. (2020) included 74 countries over a period of 6 years. The authors used economic growth and entrepreneurial activity as dependent variables and several independent variables. Results indicated that for the developed countries, an increase in entrepreneurship activity led to an increase in economic growth and the opposite was found for developing countries. The authors opine that this may be as a

result of the necessity component and lack of opportunity or innovation motivated entrepreneurship in many developing economies. This 'opportunity' or innovation may be considered one of the most relevant factors linking entrepreneurship and economic growth to one another (Toma et al., 2014). Meyer and Meyer (2019) conducted a study using data from 2006 to 2017 for the Visegrád countries specifically looking at the relationships between established business ownership, new business density, employment and economic growth. Results indicated that both established business ownership and new business density are significant predictors of economic growth, while for employment only established business ownership was a predictor. Another study by Meyer and Meyer (2017) focusing on the BRICS countries using data from 2001 to 2015 also found relationships. The variables included in this study were economic growth, early-stage entrepreneurial activity, entrepreneurial intention and established business ownership. Results indicated that early-stage entrepreneurial activity and entrepreneurial intention are significant predictors of economic growth while established business ownership was not a significant predictor however, it was a predictor of employment. From the aforementioned, it is clear that varying results regarding the link between economic growth and entrepreneurial activity exists. It is also evident that there is a link, although not consistent. This may be due to the nature of the specific countries included in the studies and the existence of external factors. Nonetheless, the continues studying of the link between economic growth and entrepreneurship not only remains interesting but also important to the growth of the exiting literature base.

Profile of Selected European countries

Five European countries were selected for this study: Austria, Croatia, Hungary, Poland and Slovenia. These countries were selected firstly, based on them being part of the European Union (European Union, 2020), being in close proximity to each other (easing trade between them) and having the required data available for the selected variables. The initial research concept included Czechia (Czech Republic) and Slovakia but due to limited entrepreneurial data (GEM) for these countries they were excluded from the final study. All countries showed stable employment figures for 2018 with unemployment rates ranging from 3.7 to 8.4 percent (World Bank, 2019a). GDP per capita (Constant 2010 US$) ranged from $50 019 (Austria) to $15 889 (Croatia) with Poland showing the highest year on year growth at 5.15 percent (World Bank, 2019b, 2019c). Gini Coefficient scores for 2017 ranged from 24.2 (Slovenia) to 30.6 (Hungary) indicating relative good equality amongst the population (World Bank, 2019d). All countries have a similar HDI index of between 0.914 (Austria) and 0.837 (Croatia) indicating a good level of human development (United Nations, 2019). All five countries are classified by the World Bank (2019e) as high income countries.

Table 1 depicts several indicators for the relevant countries. Austria is ranked 27th with a "Doing Business Index" of 78.7 and Slovenia revealed the highest "Starting a

Business Index" of 93.0 ranked 41st globally. Surprisingly, these two countries also have the highest GDP per capita. Starting a business in Hungary is also considered easier than in Poland, Croatia and Austria.

Table 1: Selected European countries' indicators 2019 (unless otherwise stated)

Country	GDP per Capita (Constant 2010 US$)	Doing Business (Rank)	Starting Business (Rank)	EI (%)	TEA (%)	EBO (%)
Austria	**50019****	**78.7 (27)**	83.2 (127)	12.30	5.90	11.40
Croatia	15889**	73.6 (51)	85.3 (114)	**20.57**	3.57	**11.47**
Hungary	16647**	73.4 (52)	88.2 (87)	15.11*	5.50*	7.94*
Slovenia	26768**	76.5 (37)	**93.0 (41)**	14.98	8.45	7.80
Poland	16659**	76.4 (40)	82.9 (128)	6.00	**12.76**	5.39

*2016 figures; **2018 figures
Bold figures represents best performing country
Source: GEM Consortium (2019d); World Bank (2019b)

Considering the Global Entrepreneurship Monitor indicators, Croatia has the highest entrepreneurial intention (20.57) and established business ownership rate (11.47) and Poland has the highest early-stage entrepreneurial activity (12.76). In general, all five countries reveal a positive entrepreneurial environment.

Methodology

This study is based on a quantitative research methodology approach. The study utilized secondary time series data using econometric methods to assess the relationship between different variables. All data used in the study were sourced from the World Bank data set and Global Entrepreneurship Monitor reports. A number of econometric methods are included in the analysis and include econometric time series panel data models such as (1) correlation coefficients to determine the short-run relationships between variables; (2) unit root tests to determine the level of stationarity of the variables and model selection; (3) Granger causality test to assess causality between all the variables; (4) long-run relationships between the variables using either an ARDL of Fisher-Johansen test leading to regression analysis using FMOLS and DOLS equations; (5) and model stability diagnostic tests. Time series data for all variables were collected for all of the countries from 2001 to 2019. A pooled panel data set was created using data from the selected five countries and included 95 observations. This research article has the primary objective to test the relationships between economic development measured as GDP per capita as the main dependent variable with economic growth (measured in GDP) as a secondary dependent variable of two econometric models with independent and predictive variables namely Entrepreneurial Intention (EI); Early-stage Entrepreneurial Activity (TEA); and

Established Business Ownership (EBO). Table 2 represents a summary of the variables used in the two econometric models.

Table 2: Summary of variables used in the econometric model

Variable	Abbreviations	Definition
Gross Domestic Product (GDP) per capita at constant prices in US$	GDPCAP**	Gross value added by all producers in the economy plus product taxes added together less and subsidies not included in the value of the products, divided by midyear population.
GDP at constant prices in US$	GDP**	Total Gross domestic Product per year for each country at constant prices measured in US$.
Entrepreneurial Intention	EI*	Percentage of population (between 18-64 years) who are latent entrepreneurs and who intend to start a business within three years (individuals involved in any stage of entrepreneurial activity are excluded).
Early-stage entrepreneurial activity	TEA*	Percentage of population (between 18-64 years) who are either a nascent entrepreneur (busy setting up a business) or owner-manager of a new business (<3.5 years old).
Established business ownership	EBO*	Percentage of population (between 18-64 years) who are currently an owner-manager of an established business that has paid salaries, wages, or any other payments to the owners for longer than a period of 42 months.

Source: GEM Consortium, 2019c*; World Bank, 2019f**

According to Brooks (2014) the basic equation for panel data can be defined as:

$y_{it} = \alpha + \beta x_{it} + u_{it}$ ..... (1)

Where y_{it} is the dependent variable, α is the intercept term, β is a $k \times 1$ vector of parameters to be estimated on the explanatory variables, and x_{it} is a $1 \times k$ vector of observations on the explanatory variables, $t = 1, \ldots, T$; $i = 1$. The model from the function described in equation (1) can be listed as follows:

$$Main\ Model\ 1: GDPCAP_t = \propto_1 + \sum_{j=1}^{k} \beta_{1j}\ GDPCAP_{t-j} + \sum_{j=1}^{k} \lambda_{1j}\ EI_{t-j} + TEA_{t-j} + EBO_{t-j} u_{1t} \quad \ldots\ldots (2)$$

$$Senondary\ Model\ 2: GDP_t = \propto_2 + \sum_{j=1}^{k} \beta_{2j}\ GDP_{t-j} + \sum_{j=1}^{k} \lambda_{2j}\ EI_{t-j} + TEA_{t-j} + EBO_{t-j} u_{2t} \quad \ldots\ldots (3)$$

Where α_n is the constant, β_n, λ_n are the coefficients, K is the number of lags and $\boldsymbol{u_{1t}}$ and $\boldsymbol{u_{2t}}$ are the stochastic error terms which are also known as shocks in the model. The unit root tests for level of stationarity was conducted using the Levin, Lin and Chu test; the Im, Pesaran and Shin W-stat as well as the ADF - Fisher Chi-square test. If the variables are stationary at I(0) a normal panel VAR analysis is conducted

whereas if variables are stationary at I(1), the Fisher Johansen panel co-integration test for long run relationship is conducted. If a mixture of variable were determined the only option is a panel ARDL method as estimation. Please note that the results section only provides the details for Model 1, while only summaries for Model 2 are listed.

Results and discussion

In the next section, the results of the econometric methods are listed and discussed as well as linked to previous results as achieved by different authors. Table 3 is a summary of the correlation coefficients of Model 1 with GDP per capita as dependent variable. All of the relationships are positive, with both TEA and EBO also showing significant relationships at the 5% level. The relationship between GDP per capita and EI is not significant. In referring to Model 2, similar results were found.

Table 3: Correlation coefficient analysis for GDP per capita and entrepreneurship variables

Variables	GDPCAP	EI	TEA	EBO
GDPCAP	1.0000			

EI	0.0845	1.0000		
	(0.8183)	-----		
	[0.4152]	-----		
TEA	0.2537	0.6871	1.0000	
	(2.5294)	(9.1220)	-----	
	[0.0131*]	[0.0000*]	-----	
EBO	0.2227	0.3912	0.4542	1.0000
	(2.2030)	(4.0995)	(4.9171)	-----
	[0.0301*]	[0.0001*]	[0.0000*]	-----

Notes: () indicates the p-value and [] the t-statistic; while * indicates 5% statistically significant.

Secondly, the unit root tests for the panel data was conducted to test for the level of stationarity of the variables to decide on the final long-run estimation model. Table 4 reports the results from the Levin, Lin and Chu test; the Im, Pesaran and Shin W-stat as well as the ADF - Fisher Chi-square test. The results indicate that all variables are non-stationary at levels I(0), while all variables become stationary at 1st difference; they are therefore, stationary at I(1). Based on the unit root test results, it could be concluded that the Fisher/Johansen panel cointegration test should be utilised to assess the long-run relationships between the variables for both models as all variables are stationary at the same level.

Table 4: Panel unit root tests for both models

Variable	**Type of test**	**At levels I(0)**	**At 1st difference I(1)**	**Final result**

GDPCAP	Levin, Lin & Chu test*	0.3167	0.0013*	I(1)
	Im, Pesaran and Shin W-stat	0.4604	0.0090*	I(1)
	ADF - Fisher Chi-square	0.6053	0.0019*	I(1)
GDP	Levin, Lin & Chu test*	0.0717	0.0001*	I(1)
	Im, Pesaran and Shin W-stat	0.7439	0.0089*	I(1)
	ADF - Fisher Chi-square	0.7873	0.0167**	I(1)
EI	Levin, Lin & Chu test*	0.3271	0.0001*	I(1)
	Im, Pesaran and Shin W-stat	0.5136	0.0013*	I(1)
	ADF - Fisher Chi-square	0.2390	0.0003*	I(1)
TEA	Levin, Lin & Chu test*	0.0578	0.0006*	I(1)
	Im, Pesaran and Shin W-stat	0.0741	0.0001*	I(1)
	ADF - Fisher Chi-square	0.0895	0.0004*	I(1)
EBO	Levin, Lin & Chu test*	0.2590	0.0029*	I(1)
	Im, Pesaran and Shin W-stat	0.3665	0.0001*	I(1)
	ADF - Fisher Chi-square	0.2190	0.0004*	I(1)

Notes: Null hypothesis: Unit root. * indicates 1% statistically significant, ** indicates 5% statistically significant.

Table 5 represents a summary of the Fisher Johansen panel cointegration test for Model 1. For this specific test, the null hypothesis is rejected, meaning there is a long-run relationship between variables. The results show that for both Trace test and the Max-Eigen test, a long-run cointegration relationship exists between the variables at a 1% significance level. It could therefore, be stated that a long-run equilibrium relationship exists amongst the variables. For Model 2, a long-run cointegration relationship was also confirmed.

Table 5: Fisher Johansen panel cointegration test (with GDPCAP, EBO and NBD as variables)

Hypothesized No. of CE(s)	**Fisher Stat.** (from trace test)**	**Prob.**	**Fisher Stat.** (from max-eigen test)**	**Prob.**
None	76.72	0.0005*	70.09	0.0003*
At most 1	21.47	0.0155	14.88	0.1364
At most 2	13.69	0.1878	10.56	0.3926

Note: *indicates that the test statistics are significant at the 1% level. * Probabilities are computed using asymptotic Chi-square distribution.

In order to confirm the long-run relationships between the variables, two additional models are estimated via a regression analysis to determine specific coefficients. The two types of estimation methods utilized are the Fully Modified Ordinary Least Squares (FMOLS) and the Dynamic Ordinary Least Squares (DOLS) models. A consideration of various forms of residual-based panel method results indicate that these models generally outperform single-equation estimation techniques (Pedroni, 2000). The results of both methods need to be compared when deciding on the final results (Tintin, 2009).

In terms of Model 1 with GDP per capita as the dependent variable (see Table 6) using the FMOLS method, TEA and EBO are significant predicators of GDP per capita with coefficients of 3.3 and 2.3 respectively while EI is not a significant predictor. It can be stated that a 1% increase in EBO could for example lead to an increase of 2.28% in GDP per capita. Similar results have been estimated using the DOLS method where only EBO was found to be a significant and positive predicator of GDP per capita. With regards to Model 2 with GDP as dependent variable the results are similar to Model 1 in that both FMOLS and DOLS resulted only in EBO being a significant and positive predictor of GDP of the three entrepreneurial variables. Further interesting results from the cross-section short-run coefficients for individual countries also indicated that EBO is the one independent variable that significantly impacts on GDP per capita and GDP in all of the countries in this study. Meyer and Meyer (2017) in their study (BRICS sample) found similar results regarding TEA which was a significant predictor of growth as well as EI but EBO was not a predictor of GDP growth but did have a positive impact on employment. A study by Folorunsho et al. (2019) also revealed that entrepreneurship had a strong, positive and significant influence on economic growth. These results are also further confirmed by findings from Toma *et al.* (2014) and Naudé (2013).

Table 6: Model 1: FMOLS and DOLS results
Dependent variable: GDP per capita
Independent variables: EI, TEA, EBO.

Method	Variables	Coefficient	t-statistic	P-value (prob)	Adjusted R-squared
FMOLS	EI	0.2026	0.2752	0.7838	12.0275
	TEA	3.3446	3.2047	0.0019**	
	EBO	2.2820	3.0836	0.0027**	
DOLS	EI	0.5338	0.4042	0.6888	8.2951
	TEA	1.6866	0.9032	0.3731	
	EBO	2.8538	2.3736	0.0238*	

Note: *indicates that the test statistics are significant at the 5% level and **indicates that the test statistics are significant at the 1% level.

Table 7 is a presentation of the pairwise Granger-Causality test results for the short-run for Model 1. Key results from the analysis are that both TEA and EBO cause changes in GDP per capita; EI does cause changes in TEA and EBO; while TEA also causes changes in EBO. In terms of Model 2 with GDP as the dependent variable, it was confirmed in the analysis that both TEA and EBO do cause changes in GDP. Again, similar results were found by Folorunsho et al. (2019), Almodóvar-González et al. (2020) and Meyer and Meyer (2017; 2019).

Table 7: Pairwise Granger causality test for Model 1

Null Hypothesis:	Obs	F-Statistic	Prob.

EI does not Granger Cause GDPCAP	55	0.9542	0.3721
GDPCAP does not Granger Cause EI		1.4294	0.2161
TEA does not Granger Cause GDPCAP	55	3.9791	0.0017*
GDPCAP does not Granger Cause TEA		3.4478	0.0044*
EBO does not Granger Cause GDPCAP	55	3.9971	0.0016*
GDPCAP does not Granger Cause EBO		1.3292	0.2590
TEA does not Granger Cause EI	55	1.0205	0.4376
EI does not Granger Cause TEA		2.3211	0.0389*
EBO does not Granger Cause EI	55	1.3005	0.2726
EI does not Granger Cause EBO		2.2651	0.0435*
EBO does not Granger Cause TEA	55	0.95617	0.4838
TEA does not Granger Cause EBO		2.41677	0.0323*

Note: * indicates 5% statistical significance.

In terms of residual diagnostics, both models passed the Jarque-Bera normality test and the serial correlation test.

Conclusions and Recommendations

Entrepreneurs are economic agents and therefore key players in the economy. Entrepreneurs identify new opportunities, leading to new economic activities and growth. The primary objective of the research was to determine the relationship between two dependent variables namely GDP per capita, representing economic development; and economic growth represented by GDP, with independent variables entrepreneurial intent (EI), early-stage entrepreneurial activity (TEA) and establish business ownership (EBO) for selected European countries using a time series econometric analysis. The most important results from the analysis are that for both models, long-run cointegration relationships were established with both TEA and EBO being significant predicators of GDP per capita. It was also found that only EBO is a significant predictor of GDP. On the short-run both TEA and EBO do cause changes in GDP per capita and GDP. Interesting results also confirmed EI does cause TEA, while TEA causes changes in EBO. The listed objective of the research was therefore achieved.

These findings are significant and could assist with renewed policy development with a focus on entrepreneurship development for economic development and growth. The fact that entrepreneurship intention does cause real entrepreneurship activity and eventually established businesses is of significance. The use of various entrepreneurial

measurements as utilised in this study also proved to be appropriate as it contributed vastly to empirical research within this important study field. The most prominent limitation of a study such as this one is the lack of long time series data and data for all countries on entrepreneurship. As entrepreneurship has only been measured over the last two decades or so, and certain variables are limited in the availability of data, only a 19-year time span was used. The use of a panel analysis however, addressed this issue. Future research will focus on comparing other countries and homogenous groupings to each other and also including other economic and governance variables to determine the effect entrepreneurship may have on it. It is recommended that entrepreneurship and small business be re-prioritized as part of economic development and growth strategies. Governments need to provide an enabling environment and to remove stumbling blocks for start-up businesses to survive the first phase and to assist businesses to grow to be established businesses.

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