# Oradea Journal of Business and Economics

## Volume 5/2020, Issue 1

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**Acknowledgement**

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# CONSIDERATIONS REGARDING THE HORECA INDUSTRY IN BIHOR COUNTY. AN ECONOMETRIC APPROACH

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**Abstract:** *The tourism and restaurant sectors contribute to the local economy in many ways and can ensure achieving the sustainable development goals. Since Bihor County presents great potential for the development of the HORECA industry, both locally and nationally, the main objective of this research was aimed towards studying the dynamics of the indicators specific to this field. More precisely, the main objective was to quantify the influence of indicators specific to the HORECA industry on the average monthly nominal net earnings in the industry in Bihor County. The multiple linear regression methodology (least squares method) was applied in this study, in order to validate or reject hypothesis that the average monthly nominal net earnings in the HORECA industry in Bihor County is strongly influenced by a series of specific indicators. Findings validate this hypothesis because the coefficient of determination indicates that the multiple linear equation successfully (78.89%) predicts the directions of influence between the previously mentioned indicators. Out of all the indicators included in the regression model, the increase with one unit of the relative change of the number of active enterprises in Bihor in the HORECA industry determines the biggest increase of the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor, an increase with 1.058%, should the other exogenous variables remain constant.*

**Keywords:** HORECA industry, Bihor County, multiple linear regression, county-level analysis, Romania.

**JEL classification :** C22, C32, C5, R40, Z31.

## 1. Introduction

Bihor County is considered to present great potential for tourism development, considering the partnerships and networks of cross-border cooperation in tourism at the Euro-regional level (Dodescu and Borma, 2017). The emergence and development of common European policies have fostered cross-border cooperation and proactive self-governance through a major increase in the involvement of local authorities and communities (Badulescu, Badulescu and Borma, 2014). The rural tourism in Eastern European developing countries meets the conditions of sustainable activities and harnesses the potential of the local touristic resources (Badulescu et al., 2016). Nationally, the tourism and restaurants (HORECA) sectors had to face many challenges in order to ensure its economic sustainability (Chiriac, 2015).
Recent perspectives of the HORECA industry refer to the opportunities for increasing its competitiveness via e-commerce (Yaneva and Bichurova, 2018). Moreover, some suggest that applying hot spot analysis and spatial clustering helps to observe the digital footprint of

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tourists, providing valuable knowledge regarding the online representation of a destination, including from an economic standpoint (van der Zee et al., 2018). Taking into account the change in dynamics in the HORECA industry, one cannot deny the necessity to elaborate an analysis which includes important KPIs for a development area/region such as: the average monthly nominal net earnings in the HORECA industry, the turnover from the active local units generated by the HORECA industry, the gross investments for tangible goods made from the active local units in the HORECA industry, the number of active enterprises in Bihor in the HORECA industry, the number of airport passengers. The correlation of the previously mentioned KPIs is significant enough for representing a detailed image regarding the role of the HORECA industry in the local economy development throughout Bihor County (Herman et al., 2017).

Since the human capital is important, especially in this sector of the economy (Filimon et al., 2019), the main research question addressed in this paper is whether the average monthly nominal net earnings in the HORECA industry in Bihor County is influenced by a series of indicators with local economic impact. And if so, how is the influence manifested and how can it be quantified? Considering this, the main objective of this research paper is to quantify the influence of indicators specific to the HORECA industry based on the average monthly nominal net earnings in the industry in Bihor County, under the hypothesis that the average monthly nominal net earnings in the HORECA industry in Bihor County is strongly influenced by the Oradea International Airport passengers, by the turnover from the active local units (in Bihor, in the HORECA industry), by the number of active enterprises (in Bihor in the HORECA industry) and by the gross investments for tangible goods made by the active local units (in the HORECA industry in Bihor).

## 2. Methodology

As the title suggests, the research methodology is specific to a quantitative approach. Besides the short statistical analysis carried out, the multiple linear regression methodology was applied in this research, the least squares method to be more precise. Therefore, econometrics represents an important form of knowledge used as a research method in this paper. Econometrics comprises techniques and methods for analysing the dynamics of variables in many fields of activity, and that of the relationships between variables. (Anghelache et al., 2019). The multiple linear regression model provides ways to determine and establish the (in)existence of correlations between two types of variables: a dependent variable, also called the endogenous variable, and multiple independent variables, also called the exogenous variables (Gheorghiţă and Pătărlăgeanu, 2006).

**Table 1:** The indicators included in this research

| Code | Indicator | Unit of Measure | Type of Variable | Source |
|---|---|---|---|---|
| FOM106A and FOM106E | Average monthly nominal net earnings in the HORECA industry in Bihor County | RON (lei) | Dependent | The Romanian National Institute of Statistics |
| avia_tf_apal (LROD) | Oradea International Airport passengers | Number of passengers | Independent | Eurostat |
| INT104C and INT104D | Turnover from the active local units in the HORECA industry in Bihor County | Millions RON (lei) | Independent | The Romanian National Institute of Statistics |
| INT101A and INT101O | Active enterprises in the HORECA industry in Bihor County | Number of enterprises | Independent | The Romanian National Institute of Statistics |

| Code | Indicator | Unit of Measure | Type of Variable | Source |
|------|-----------|-----------------|------------------|--------|
| INT105D and INT105B | Gross investments for tangible goods made by the active local units in the HORECA industry in Bihor | Millions RON (lei) | Independent | The Romanian National Institute of Statistics |
| FOM103A and FOM103D | Population working in the HORECA industry in Bihor County | Thousands of persons | Not included in the linear regression | The Romanian National Institute of Statistics |

Source: Own conceptualisation

Further in this research, multiple indicators were analysed based on the statistical data taken from the databases of Eurostat and of the Romanian National Institute of Statistics on 13 January 2020, as presented in Table 1. There are some important methodological considerations to be considered, as it follows:

- FOM*106A(E)*: The average monthly net nominal earnings is an indicator obtained by subtracting from the gross nominal earnings the following: tax, the social security contribution and social health insurance paid by the employees.

- *avia_tf_apal (LROD)*: The values of this indicators include all passengers on a particular flight, counted only once and not repeatedly on each individual stage of that flight, excluding the direct transit passengers. LROD is the ICAO code for the Oradea International Airport (IATA code: OMR), located in Bihor County, Romania.

- *INT104C(D)*: Turnover (excluding VAT) represents the income resulted from sales of goods and commodities, execution of works and provision of services, excluding rebate, commissions and other discounts for the customers.

- *INT101A(O)*: The Romanian National Institute of Statistics defines an active enterprise as the entity which, from an economic perspective, is active, namely it produces goods or provides services, outlay and draws up the balance sheet.

- *INT105D(B)*: Gross investments in tangible goods are investments in new and or in existing tangible capital goods, whether bought from third parties, acquired under a financial lease contract or produced for own use, having a useful life of more than one year, including non-produced tangible goods such as land.

- FOM*103A(D)*: Includes all the persons who work for income, based on a work contract or a free-lance activity (self-employed) in order to get an income such as salary, in kind payment etc. This indicator is not included when carrying out the multiple linear regression and it is only used in the statistical analysis.

In order to validate or reject the previously formulated hypothesis, the multiple linear regression methodology was carried out on the values of the variables explained in Table no. 1. Moreover, a statistical analysis was carried out on the time series data.

## 3. Results

Starting with the statistical analysis of the beforementioned indicators, Table no. 2 was elaborated and contains relevant information regarding the descriptive statistics:

**Table 2:** Descriptive Statistics of the Indicators in the 2002-2018 Timeframe (17 Observations)

| Indicator | avia_tf_apal (LROD) | INT104C INT104D | FOM106A FOM106E | INT101A INT105O | INT105D INT105B | FOM106A FOM106E |
|---|---|---|---|---|---|---|
| Mean | 51,497.65 | 325.52 | 5.10 | 802.88 | 82.73 | 790.35 |
| Median | 37,070 | 334 | 4.80 | 824 | 71 | 790 |
| Maximum | 217,005 | 701 | 7.30 | 1,004 | 187 | 1,551 |
| Minimum | 8,028 | 77.6 | 3.60 | 461 | 15.90 | 212 |
| Std. Dev. | 53,264.80 | 171.51 | 1.078 | 131.297 | 51.593 | 363.867 |
| Skewness | 2.4099 | 0.5551 | 0.7371 | -1.1049 | 0.5714 | 0.4913 |
| Kurtosis | 7.3913 | 2.7304 | 2.7553 | 3.9619 | 2.5666 | 2.7389 |
| Jarque-Bera | 30.1143 | 0.9245 | 1.5778 | 4.1141 | 1.0583 | 0.7322 |
| Probability | 0.0000 | 0.6299 | 0.4543 | 0.1278 | 0.5891 | 0.6934 |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

The standard deviation is above the mean in the case of the Oradea International Airport passengers, which indicates an anomaly in the distribution of passengers during the analysed timeframe (2002-2018), therefore a leptokurtic distribution confirmed by the value of Kurtosis (7.3913 which is above the desired value of three, considered desirable for a normal distribution). This anomaly is justified by the increase of passengers in 2017 (160,299 passengers) and 2018 (217,005 passengers, representing 4.21 times more than the mean), which has caused a shock on the mean (51,497 passengers).

Skewness is an important indicator, since it reflects the asymmetry of data distribution around the mean. A normal distribution is as close as possible to zero (HIS Markit, 2017). In the case of the indicators included in Table no. 2, the distribution is not normal and one can notice the strong positive asymmetry (the Skewness values are above zero) in the case of the Oradea International Airport passengers, and the weak positive asymmetry (which is still not desirable when carrying out the multiple linear regression) in the case of all the others indicators, with the exception of the number of active enterprises existing in the HORECA industry in Bihor County, which is an indicator characterised by a negative asymmetry (due to the negative value of Skewness, -1.1049). This is caused because of the low values of the indicator tracked in the 2002-2006 timeframe (mean: 643 active enterprises, minimum: 461 in 2002), as compared to the values registered in the 2007-2018 timeframe (mean: 870 active enterprises, minimum: 780 in 2011). Moreover, this statistical analysis indicates that the entrepreneurship in the HORECA industry in Bihor has intensified after 2006, proof being that the number of active enterprises has increased.

Additionally, Kurtosis is an indicator which reflects the flatness or curving of a distribution as compared to a normal distribution. In the case of a normally distributed series, the Kurtosis value is 3. From this perspective, the indicators included in Table no. 2 have a distribution close to normal, with few exceptions: the number of passengers (previously explained), the number of active enterprises in the HORECA industry (leptokurtic distribution, due to the value of 3.9619 which is above the limit of a normal distribution, 3).

Since this research focuses on time series data and the objective is not create a spurious regression, the variables must be stationary in time (Noriega and Ventosa-Santaulària, 2007). In order to test that, the Augmented Dickey-Fuller statistic test was performed and the results were gathered together in Table no. 3:

**Table 3:** Stationarity Testing – Augmented Dickey-Fuller

| | | avia_tf_apal (LROD) | | INT104C INT104D | | FOM103A FOM103D | |
|---|---|---|---|---|---|---|---|
| | | t-Statistic | Prob | t-Statistic | Prob | t-Statistic | Prob |
| **Augmented Dickey-Fuller test statistic** | | -3.3408 | 0,0313 | 1.4698 | 0.9982 | 0.0900 | 0.9541 |
| **Test critical values** | **1% level** | -3.9591 | | -3.9203 | | -3.9203 | |
| | **5% level** | -3.0810 | | -3.0656 | | -3.0656 | |
| | **10% level** | -2.6813 | | -2.6735 | | -2.6735 | |
| | | INT101A INT101O | | INT105D INT105B | | FOM106A FOM106E | |
| | | t-Statistic | Prob | t-Statistic | Prob | t-Statistic | Prob |
| **Augmented Dickey-Fuller test statistic** | | -3.4357 | 0.0252 | -2.5311 | 0.1270 | 1.0148 | 0.9943 |
| **Test critical values** | **1% level** | -3.9203 | | -3.9203 | | -3.9203 | |
| | **5% level** | -3.0656 | | -3.0656 | | -3.0656 | |
| | **10% level** | -2.6735 | | -2.6735 | | -2.6735 | |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

Because only two indicators (*Oradea International Airport passengers* and *Active enterprises in Bihor in the HORECA industry*) are characterised by stationarity (Prob is below the limit of 0.05 and the value of the t-Statistic in module is situated between the 1%-5% test critical values), the data needs to be processed in order to avoid a spurious regression. As a result, studying the relative change of the indicators from 2002 to 2018 can be tested as a method to obtain a normal distribution of the series and stationarity. Considering this, Table no. 4 was elaborated, which contains information regarding the descriptive statistics of the relative change of the indicators:

**Table 4:** Descriptive Statistics of the Relative Change of the Analysed Indicators in the 2002-2018 Timeframe (16 Observations)

| Indicator | avia_tf_apal (LROD) | INT104C INT104D | FOM106A FOM106E | INT101A INT105O | INT105D INT105B | FOM106A FOM106E |
|---|---|---|---|---|---|---|
| Mean | 0.434 | 0.156 | 0.048 | 0.047 | 0.258 | 0.141 |
| Median | 0.071 | 0.162 | 0.049 | 0.037 | 0.216 | 0.097 |
| Maximum | 4.163 | 0.414 | 0.194 | 0.306 | 1.258 | 0.604 |
| Minimum | -0.779 | -0.057 | -0.104 | -0.133 | -0.674 | -0.072 |
| Std. Dev. | 1.251 | 0.140 | 0.086 | 0.098 | 0.584 | 0.151 |
| Skewness | 2.2326 | 0.0496 | 0.0549 | 0.6300 | -0.0049 | 1.7914 |
| Kurtosis | 6.7126 | 2.3505 | 2.1960 | 4.7449 | 2.1752 | 6.6465 |
| Jarque-Bera | 22.4807 | 0.2878 | 0.4390 | 3.0882 | 0.4536 | 17.4220 |
| Probability | 0.0000 | 0.8660 | 0.8029 | 0.2135 | 0.7971 | 0.0002 |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

Regarding the normality of the series distribution, based on data from Table no. 4:

- *avia_tf_apal (LROD)*: Distribution continues to present anomalies. The standard deviation is still about four times greater than the mean, Skewness indicates strong positive assymmetry and the series is leptokurtic. However, the value of Jarque-Bera indicates a small change towards a normal distribution, characterised by a Jarque-Bera value of zero (in this case, the value dropped from 30.11 to 22.48).
- *INT104C(D)*: The relative change of the turnover from the active local units in Bihor in the HORECA industry could be considered as having a normal distribution. Skewness and Jarque-Bera indicate a normal distribution, but Kurtosis indicates that the distribution is flat.
- *FOM106A(E)*: The relative change of the working population in the HORECA industry in Bihor could also be considered as having a normal distribution, considering that Skewness indicates a normal distribution (value close to zero) and Jarque-Bera is only 0.4390. However, the distribution is platykurtic (2.35 – below the desired 3).
- *INT101A(O)*: The relative change of the number of active enterprises in Bihor in the HORECA industry is not described by negative asymmetry (as analysed before in the case of the number of active enterprises), but by a small form of positive asymmetry (0.63). The leptokurtic characteristic of the distribution has accentuated (from 3.96 to 4.74).
- *INT105D(B)*: The distribution of the relative change of the gross investments in tangible goods could be considered a normal, taking into account that the value of Skewness is very close to the desired value of zero, similar to Jarque-Bera. Data is platykurtic (2.17).
- *FOM106A(E)*: The distribution of the relative change of the average monthly nominal net earnings in Bihor in the HORECA industry is similar to the distribution of the relative change of the Oradea International Airport passengers (deeply leptokurtic).
Following the research's objective, stationarity testing – Augmented Dickey-Fuller was performed in EViews and the results were centralised in Table no. 5:

**Table 5:** Stationarity Testing – Augmented Dickey-Fuller (on the processed data)

| | | avia_tf_apal (LROD) | | INT104C INT104D | | FOM103A FOM103D | |
|---|---|---|---|---|---|---|---|
| **Augmented Dickey-Fuller test statistic** | | t-Statistic | Prob | t-Statistic | Prob | t-Statistic | Prob |
| | | -2.7052 | 0.0961 | -3.0081 | 0.0569 | -3.6240 | 0.0186 |
| **Test critical values** | 1% level | -3.9591 | | -3.9591 | | -3.9591 | |
| | 5% level | -3.0810 | | -3.0810 | | -3.0810 | |
| | 10% level | -2.6813 | | -2.6813 | | -2.6813 | |
| | | INT101A INT101O | | INT105D INT105B | | FOM106A FOM106E | |
| **Augmented Dickey-Fuller test statistic** | | t-Statistic | Prob | t-Statistic | Prob | t-Statistic | Prob |
| | | -3.9179 | 0.0108 | -4.1577 | 0.0069 | -5.9746 | 0.0003 |
| **Test critical values** | 1% level | -3.9591 | | -3.9591 | | -3.9591 | |
| | 5% level | -3.0810 | | -3.0810 | | -3.0810 | |
| | 10% level | -2.6813 | | -2.6813 | | -2.6813 | |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

Based on the results from Table no. 5, the time series are now stationary (the Prob is below the limit of 0.05), with one exception. The relative change of the Oradea International Airport passengers has a Prob of 0.09 – but this can be caused by the small number of observations (only 16), therefore this exception can be accepted.

**Table 6:** The Results of the Multiple Linear Regression (Least Squares)

| Variable | Coefficient | Standard Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.0410 | 0.0319 | 1.2837 | 0.2256 |
| INT104C/D | 0.3631 | 0.1895 | 1.9165 | 0.0816 |
| avia_tf_apal (LROD) | 0.0222 | 0.0173 | 1.2843 | 0.2254 |
| INT105D/B | -0.0542 | 0.0382 | -1.4206 | 0.1831 |
| INT101A/O | 1.0115 | 0.2651 | 3.8157 | 0.0029 |
| R-squared | 0.789842 | Mean dependent var | 0.140772 | |
| Adjusted R-squared | 0.713421 | S.D. dependent var | 0.151226 | |
| S.E. of regression | 0.0810 | Akaike info criterion | -1.939520 | |
| Sum squared resid | 0.0721 | Schwarz criterion | -1.698086 | |
| Log likelihood | 20.5162 | Hannan-Quinn criter. | -1.927157 | |
| F-statistic | 10.3354 | Durbin-Watson stat | 2.497088 | |
| Prob(F-statistic) | 0.0010 | | | |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

The R-squared coefficient of determination indicates that the multiple linear equation successfully (78.89%) predicts the values of the dependent variable within the sample included in Table no. 6. Moreover, the t-Statistic associated probability for the exogenous variables is zero (0.00) in the case of *the relative change of the number of active enterprises in Bihor in the HORECA industry* – which is desirable in order to validate the equation, similar to the situation of the following indicator: *the relative change of the Oradea International Airport passengers* (0.08 – slightly above the 0.05 limit). However, due to the low number of observations (16), the t-Statistic associated probability of the other exogenous variables have bigger values (0.22 and 0.18), but accepted. The Durbin-Watson statistic measures the serial correlation in the residuals and suggests that successive error terms are negatively correlated, considering the value which is above 2 (2.49 – according to Table no. 6), therefore a value which validates the model.

**Table 7:** The Estimation Command, Equation and Substituted Coefficients

| **Estimation Command:** |
|---|
| LS *FOM103D/A* C *INT104C/D avia_tf_apal (LROD) INT105D/B INT101A/O* |
| **Estimation Equation:** |
| *FOM103D/A* = C(1) + C(2)**FOM104C/D* + C(3)**avia_tf_apal(LROD)* +           C(4)**INT105D/B* + C(5)**INT101A/O* + ε |
| **Substituted Coefficients:** |
| *FOM103D/A* = 0.047 + 0.363**FOM104C/D* + 0.022**avia_tf_apal(LROD)*           -0.054**INT105D/B* + 1.011**INT101A/O* + ε |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

According to data in Table no. 7, if *the relative change in the turnover from the active local units in Bihor in the HORECA industry* increases by one unit and the other independent

variables remain constant, this determines *the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor* to increase with 0.41% (0.047 plus 0.363). Similarly, if *the relative change of the Oradea International Airport passengers* increases by one unit and the other independent variables remain constant, this determines *the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor* to increase only with 0.069% (0.047 plus 0.022).

**Table 8:** The Coefficient Confidence Intervals

| Variable | Coefficient | 90% CI | | 95% CI | | 100% CI | |
|---|---|---|---|---|---|---|---|
| | | Low | High | Low | High | Low | High |
| C | 0.0409 | -0.0163 | 0.0982 | -0.0292 | 0.1112 | -0.0581 | 0.1400 |
| INT104C/D | 0.3631 | 0.0228 | 0.7034 | -0.0539 | 0.7802 | -0.2253 | 0.9516 |
| avia_tf_apal | 0.0222 | -0.0088 | 0.0533 | -0.0158 | 0.0603 | -0.0315 | 0.0759 |
| INT105D/B | -0.5419 | -0.1227 | 0.0143 | -0.1381 | 0.0297 | -0.1726 | 0.0642 |
| INT101A/O | 1.0114 | 0.5354 | 1.4875 | 0.4280 | 1.5948 | 0.1881 | 1.8374 |

Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

Should *The relative change in the gross investments for tangible goods from the active local units in the HORECA industry in Bihor* increase with one unit, this would cause a decrease with 0.007% (0.047 minus 0,054) of *the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor*, considering the rest of the independent variables remain constant. The increase with one unit of the last exogenous variable included in the equation, *the relative change of the number of active enterprises in Bihor in the HORECA industry*, could determine the biggest increase of *the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor*, an increase with 1.058%, if the other exogenous variables remain constant.



```
    obs      Actual    Fitted    Residual              Residual Plot
2003 vs 2002  0.60377   0.49590   0.10787
2004 vs 2003  0.13235   0.19187  -0.05952
2005 vs 2004  0.25714   0.19527   0.06187
2006 vs 2005  0.05579   0.08575  -0.02996
2007 vs 2006  0.26027   0.22371   0.03656
2008 vs 2007  0.13199   0.25724  -0.12525
2009 vs 2008  0.08368   0.12812  -0.04445
2010 vs 2009 -0.07215  -0.10433   0.03218
2011 vs 2010  0.08458  -0.04906   0.13364
2012 vs 2011  0.02138   0.11703  -0.09565
2013 vs 2012  0.07759   0.07738   0.00020
2014 vs 2013  0.10857   0.07057   0.03800
2015 vs 2014  0.04845   0.08237  -0.03392
2016 vs 2015  0.13471   0.16463  -0.02992
2017 vs 2016  0.24263   0.21002   0.03262
2018 vs 2017  0.08159   0.10586  -0.02427
```

**Figure 1:** Residual Plot. Observations, Actual and Fitted Residuals
Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

| | |
|---|---|
| **Series: Residuals** | |
| **Sample 1 16** | |
| **Observations 16** | |
| **Mean** | **2.17e-18** |
| **Median** | **-0.012034** |
| **Maximum** | **0.133641** |
| **Minimum** | **-0.125253** |
| **Std. Dev.** | **0.069326** |
| **Skewness** | **0.166319** |
| **Kurtosis** | **2.538722** |
| **Jarque-Bera** | **0.215617** |
| **Probability** | **0.897800** |

Heteroskedasticity Test: White
Null hypothesis: Homoskedasticity

| | | | |
|---|---|---|---|
| F-statistic | 0.638072 | Prob. F(14,1) | 0.7689 |
| Obs*R-squared | 14.38921 | Prob. Chi-Square(14) | 0.4211 |
| Scaled explained SS | 5.232540 | Prob. Chi-Square(14) | 0.9823 |
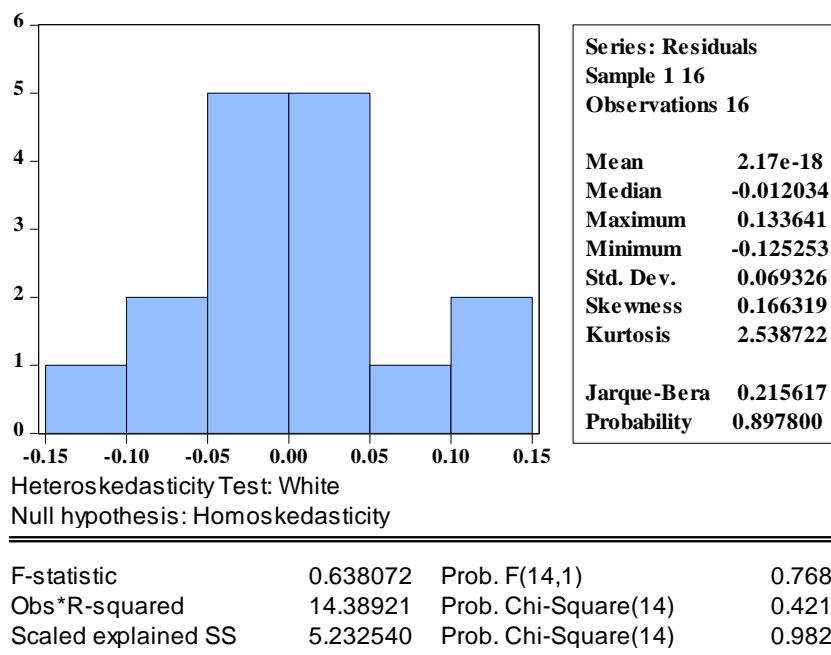
**Figure 2:** Residual Histogram. Heteroskedasticity Test: White
Source: Own conceptualisation (data extracted from Eurostat and The Romanian National Institute of Statistics and processed in EViews 10 Student Version Lite)

According to residual plot and histogram in Figure no. 1 and 2, if we look at the residual mean (zero), the residual distribution is normal. There is a very small tendency towards a positive asymmetry (the Skewness value is slightly above the ideal zero threshold), but we consider it acceptable. The Kurtosis value (2.538) confirms the normality in the residual distribution, also validated by the Jarque-Bera value, which is close to zero. Regarding the heteroskedasticity test (White), the Probability indicator has values above 0.05, which is desirable. The Prob. F indicator in the White test reflects the homoscedasticity of the residuals (due to the value 0.76 – above 0.05 limit), which is one of the characteristics of a normal residual distribution. In consequence, the normal distribution of the residuals and the results of the White test for heteroskedasticity demonstrate that the multiple linear regression model is valid.

## 4. Conclusions

The HORECA industry continues to evolve in order to ensure its economic sustainability in Romania, both nationally and locally. There are a lot of opportunities for increasing competitiveness in the industry, including in Bihor County. By considering the dynamics of the indicators specific to this field in the case of Bihor County, one cannot deny the continuous improvement process that takes place.
The main indicators analysed in this study refer only to the HORECA industry and to Bihor County: the average monthly nominal net earnings, the number of Oradea International Airport passengers, the turnover from the active local units, the number of active enterprises, the gross investments for tangible goods made by the active local units and the population working in the HORECA industry in Bihor County. Not all of the previously mentioned indicators have a normal distribution in time and are not stationary, so the data was transformed from absolute to relative, following the change in dynamics from one period to

another. This caused the distribution of the series to become normal or close to normal and stationary in time, which allowed the methodology of multiple linear regression (least squares method) to become applicable, so that the hypothesis of the research was validated. The average monthly nominal net earnings in the HORECA industry in Bihor County is strongly influenced by the series of previously mentioned indicators. The coefficient of determination indicates that the multiple linear equation successfully (78.89%) predicts the directions of influence between the variables. Out of all the indicators included in the multiple linear regression model, the increase with one unit of the relative change of the number of active enterprises in Bihor in the HORECA industry determines the biggest increase of the relative change in the average monthly nominal net earnings in the HORECA industry in Bihor, an increase with 1.058%, should the other exogenous variables remain constant.

According to the research findings, the average monthly nominal net earnings in the HORECA industry in Bihor County represents a key indicator for the local economy. A suggestion for local authorities is to stimulate the increase of enterprises in the HORECA industry, since this determines competitiveness and performance in the labour market, on one hand, and an increase of the quality of services in the industry, on the other hand.

Regarding the limitations of this research, the study can be improved by testing more variables in the model, so that it would follow the socio-economic reality more accurately. Further studies could include more variables such as: touristic accommodation capacity in Bihor County, the number of total tourists arrived in Bihor County, the number of overnight stays in Bihor County and others. Moreover, future studies can follow the methodological procedure carried out in this research, but applied on other counties.

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# RESOURCE CURSE AND THE EITI MEMBERSHIP EFFECT ON THE ECONOMIC GROWTH AND CORRUPTION IN SUB-SAHARAN AFRICA: PART I - A THEORETICAL REVIEW

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**Abstract:** *This study reviews the theoretical literature concerning the resource curse as it pertains to the impact of natural resources upon economic growth and corruption in sub-Saharan Africa (SSA), and how the Extractive Industries Transparency Initiative (EITI) membership can be of help. The EITI is an international standard promoting open and transparent resource governance through disclosure mechanisms in the resource value chain. Corruption has been associated with less-than-average economic growth in resource-rich countries. This research concludes that the theoretical review found that through the dissemination of disclosures in the natural resource sector, the EITI can potentially reduce the prevalence of corruption in implementing countries in SSA and it can address negative economic growth outcomes associated with resource abundance. However, there is not much evidence empirically needed to suggest this.*

## 1. Introduction

This study is set out to determine if natural resource income and expenditure information disclosure to civil society organisations, through EITI membership, will increase economic growth, and impact corruption positively in sub-Saharan African Countries. The question of what distinguishes resource-rich states, like Norway (oil) and Botswana (diamonds), from *basket-case economies* (economy characterized by high level of unemployment, and all economic woes), like Venezuela (oil) and Sierra Leone (diamonds), has been investigated in specialty literature. The available studies suggest that corruption, which is highly susceptible in extractive industries, plays a prominent role in explaining the divergent fortunes of such resource-rich states (Fisman and Golden, 2017). A thread of studies examining the relationship between corruption and economic growth, however, argues that corruption can be economically justified if it allows the private sector to bypass inefficient regulations and red tape. By greasing the wheels, corruption overcomes the distortions created by ill-functioning institutions (Leff, 1964; Huntington, 1968; Leys, 1965). The empirical literature, which suggests a positive impact of corruption on economic growth, is, however, inconsistent with the efficient corruption hypothesis and confirms the 'sand the wheels' hypothesis (Méon and Sekkat, 2005). This literature has, seemingly, reached a consensus on the reported negative impact of corruption on economic growth through its

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impact on investment and governance indicators (Mauro, 1995; Brunetti and Weder, 1998; Kauffman and Wei, 2000; Mo, 2001; Méon and Sekkat, 2005).

The specialty literature has recently evolved from viewing corruption as being a primarily principal-agent problem, towards seeing it as more of a collective action problem (Mungiu-Pippidi, 2015; Kossow and Kukutschka, 2017). This collective action problem necessitates the involvement of civil society organisations (CSOs), which have been found to be key in controlling corruption. The Extractive Industries Transparency Initiative (EITI) offers citizens a tool to enforce accountability in the natural resource sector through transparency in the resource value chain, including revenue disclosures, licensing and contracting processes and contributions to fiscal budgets. The EITI has been strongly promoted in development circles as an instrument that can enable resource-abundant countries to transform their potential endowment wealth into social and economic prosperity (Ölcer, 2009). Using multi-stakeholder groups (MSGs), including civil society, this global standard can, potentially, address the collective action problems in resource corruption and disaffirm the negative effects of natural resource abundance.

This study argues that through the dissemination of disclosures in the natural resource sector, the EITI can potentially reduce the prevalence of corruption in implementing countries in SSA and address negative economic growth outcomes associated with resource abundance. First, it is suggested that natural resource information disclosure to civil society organisations, through EITI membership, would reduce corruption on resource endowment in a member country. It is expected that corruption will be reduced by the mobilisation of a collective action, led by CSOs having access to information, which could enhance public demand for accountability. In addition, economic growth is expected to increase because of less resource misallocation, a reduction in rent-seeking opportunities, lower inefficient taxes on businesses, and less distortion in decision-making processes. Transparency in tax revenue and budget allocation could also increase social spending that enhances human development and positively affects economic growth. The focus on SSA is based on the region having the lowest average score on the 2017 Resource Governance Index, 43 out of 100. The assessment criteria of value realisation, revenue management, enabling environment and law and practice indicate the current weaknesses in resource governance in SSA (NRGI, 2017). The region also scores particularly low on revenue management, one of the main aims of the EITI. Thus, it provides fertile grounds to give empirical validation of the impact of EITI membership on the resource curse, corruption, and economic growth nexus. The paper focuses on both the indirect and direct effects of country membership of EITI on economic growth. The indirect effect is informed by the literature on the correlation between high corruption and low economic growth, and the ability of transparency to reduce corruption through collective action. The EITI is expected, through its involvement in civil society, to reduce corruption in resource-rich states in SSA, and therefore indirectly address the resource curse. It is also thought that transparency could increase economic growth without reducing corruption. By signing up to the standard, governments send a signal to investors that they are committed to reforms. Without directly addressing corruption, the country could still benefit from increased foreign inflows. Evidence from the existing literature suggests that countries that implement the EITI have been able to attract additional foreign aid, with membership enhancing the reputation of the state's commitment to good governance (David-Barret and Okamura, 2013). EITI disclosures could reduce the risk of illicit financial flows, as citizens can see how much their governments are being paid for local resources (Ernst, 2013). This monitoring could ensure that more resource funds remain within the host country, even if local corruption is not directly reduced.

This paper contributes to the literature on whether transparency, through collective action, is an effective tool to curb corruption and consequently improve economic growth. The rest

of the paper is structured as follows: Section 2 presents the literature review. Section 3 concludes the study.

## 2. Literature Review

### 2.1.  Theoretical Literature Review
### 2.1.1.  Resource Curse

Theoretical literature distinguishes between the direct and indirect effects of natural resources on economic growth. The direct effect, commonly known as Dutch disease, relates to an appreciation in the real exchange rate of a country due to the inflow of substantial amounts of foreign currency (Sachs and Warner, 2001). This appreciation establishes equilibrium in the labour and non-traded goods market as increased disposable income raises the wages in the non-traded goods sector, and it increases the demand for non-traded goods. The traded non-resource goods sector loses competitiveness as it is partially crowded out (spending effect) (Leite and Weidmann, 1999). Secondly, the increased wages in the resource sector during a resource boom pull capital and labour away from other sectors (resource pull effect) (Leite and Weidmann, 1999). Entrepreneurial activity and innovation are crowded out by sectoral wage levels as labour gravitates to the resource sector (Sachs and Warner, 2001).

The indirect effect is manifested in rent-seeking governance (Leite and Weidmann, 1999). Extractive resource industries are believed to generate rents as 'a matter of course', which seems to be damaging (Collier, 2007; Collier and Goderis, 2007). These rents are unearned income from wealth, as they are not a result of normal production but rather a transformation of wealth from nature to financial (Holden, 2013). The windfall received by government, through the inflow of investment in the resource sector, creates a 'feeding frenzy' in which competing groups fight for resource rents at the expense of public goods (Khan, 1994). Ross (2001) argues that resources create a 'rentier effect', as governments are funded by resource wealth, instead of citizen taxation. The 'taxation effect' reduces incentives for citizen engagement and budget accountability, as state funds are not drawn from the populace, which potentially causes apathy towards the workings of the government. The direct and indirect effects are connected by Torvik (2001), who argues that in a rent-seeking model with abundant natural resources, the number of entrepreneurs engaged in rent-seeking reduces productive-sector entrepreneurs and therefore reduces income and welfare. This view is supported by Fisman and Golden (2017), who state that in societies aroused with government-controlled resources, the most profitable opportunities for moguls might be through government rather than commerce, as it becomes easier to skim off the top or receive kick-backs. It is also theorised that governments that earn substantial resource through rents are less likely to introduce structural reforms, invest in growth supporting public goods, liberalise their economies and choose more protective trade policies (Sachs and Warner, 1995).

### 2.1.2.  Corruption and Economic Growth

The theoretical literature offers two contrasting views on the effect of corruption on economic growth; the 'grease the wheels' and 'sand the wheels' hypotheses. The 'grease the wheels' hypothesis states that corruption can cancel out the negative effect of an inefficient bureaucracy and excessive red tape, increasing economic efficiency (Leff, 1964; Huntington, 1968). Liu (1985) argues that bribes rearrange the queuing process, allocating time efficiently, by moving those to whom time is more valuable to the front of the line. Corruption could also ensure that projects are awarded to the most efficient firms that stand to gain the most by paying the highest bribe (Beck and Maher, 1986). However, this view

contrasts with the 'sand the wheels' hypothesis, whereby corruption reduces economic efficiency and has a detrimental effect on economic growth (Méon and Sekkat, 2005).

There are five main transmission channels through which corruption can negatively affect economic growth (Chêne, 2014). Firstly, at the macro-level, market forces and incentives can become distorted, resulting in the misallocation of resources. Kurer (1993) argues that corrupt officials have incentives to create additional distortion in the economy in order to preserve the illegal outcomes they benefit from. The firms that can pay the highest bribes and obtain the required licensing might not be efficient users of available resources. These firms may only be able to afford the bribe at the expense of the quality of their products (Rose-Ackermann, 1997). Secondly, corruption drives talent and resources towards rent-seeking and away from productive activities. Baumol (1990) argues that the reallocation of talent from productive to rent-seeking activities reduces efficiency in the economy and lowers economic growth. As the returns on rent-seeking increase, private investment is crowded out (Murphy, Shleifer and Vishny, 1993). Mehlum, Moene and Torvik (2006) make a distinction between "producer-friendly" institutions, where rent-seeking and producing activities are aligned, and "grabber-friendly" institutions where rent-seeking is prioritised at the expense of producing activities. "Grabber-friendly" institutions are bad for growth in resource-rich states as they divert potentially productive entrepreneurs away from producing activities. These institutions are characterised by weak rule of law, corruption and inefficient governance that exposes the state to the resource curse.

Thirdly, at the firm level, corruption levies an inefficient tax on business which raises production costs. Boycko, Shleifer and Vishny (1995) argue that the uncertainty around the enforceability of corrupt contracts increases the enforcement costs for the firms. The illegality of bribery, directs efforts towards avoiding punishment and detection, resulting in corruption becoming more distortionary than taxation (Shliefer and Vishny, 1993). Fourthly, corruption is expected to decrease the productivity of firms and government investments. Tanzi and Davoodi (1997) theorise that corruption distorts the decision-making process on public investment, leading to a distortion in capital budgets and thus lowering return on investment. Public officials are expected to customise their requests by charging firms according to their ability to pay. The nature and amount of the harassment are intended to maximise the pay-out, reducing the firm's productivity by increasing red tape (Kauffman and Wei, 2000). Lastly, rent-seeking is expected to undermine public expenditure. Ugur and Dasgupta (2011) argue that corruption has indirect negative effects on investment and human capital, subsequently lowering the efficiency of public expenditure. Corruption reduces the resources available for human development spending and maintenance of existing infrastructure and results in inferior-quality infrastructure that will have to be rebuilt (Tanzi and Davoodi, 1997).

Natural resources play a key role in the ability of a state to control corruption. An equilibrium model developed by Mungiu-Pippidi (2015) states that to control corruption the constraints (legal and normative) must exceed the opportunities (power discretion and resources). The ability of natural resources to be turned into spoils or to generate rents increases the opportunities for corruption, especially when discretionary power structures are in place, for example monopolies, cartels and patronage networks (Mungiu-Pippidi, 2015). Not only are natural resources considered to foment corruption, but corruption can also create a vicious circle where natural resources become detrimental to economic growth (Fisman and Golden, 2017).

### 2.1.3. Transparency and Corruption

The use of transparency initiatives is viewed as a key element in the fight against corruption in resource-rich states (Kolstad and Wiig, 2008). These initiatives seek in general to improve the sanctioning mechanisms through which civil society can hold governments accountable

and enhance the development outcomes when natural resources are abundant (Mejía Acosta, 2013). Transparency is expected to open the lines of communication, allow scrutiny of government rents and theoretically incentivise governments to invest in pro-development policies (Corrigan, 2013; Nwapi, 2014). Traditional transparency theory is based on a simplistic model that assumes that information released will produce an engaged and informed citizenry that is motivated to hold government to account (Fenster, 2005).

The prevalence of corruption has historically been considered a principal–agent problem (Mungiu-Pippidi, 2015). A functioning principal–agent theory between citizens (principals) and government (agents) is dependent on the principal having access to information about the agent's actions and holding the agent accountable by elections (Kolstad and Wiig, 2008). However, the agency problem suffers from information asymmetry when there is limited transparency, which sets the stage for rent-seeking governance. In a theoretical model, Klitgaard (2000) states that corruption (C) is the product of monopoly power (M) plus discretion (D) minus accountability (A): (C=M+D-A). One of the proposed solutions to enhance accountability in the equation is to increase transparency. The problem is that the principal that is needed to enforce this accountability is seldom there. Even if the principal is easy to find, Pitlik et al (2010) argue that disclosed information must be on the principal's account, through societal accountability, to have a sanctioning effect. This theory is supported by Lindstedt and Naurin (2010), who argue that non-agent transparency is more effective in reducing corruption than transparency controlled by the agent. Solving the principal–agent problem was attempted by establishing laws that asked for greater transparency to help citizens hold government to account (Klitgaard, 1988).

Recently, anti-corruption scholars have started to move away from viewing corruption as a principal–agent problem to seeing it as a collective action problem (Kossow and Kukutschka, 2017). Mungiu-Pippidi (2015) argues that transparency can reduce corruption opportunities by reducing power discretion and increasing normative constraints on corruption through civil society engagement and collective action. The involvement of civil society is crucial to collective action in the fight against corruption. The EITI, with its multi-stakeholder approach and dissemination of resource information, should theoretically be a helpful tool in controlling corruption through its impact on administrative discretion, a major resource for corruption, and mobilising the public to act collectively and increase the normative constraints on the state. Substantive benefits from transparency in the natural resource sector are expected in the form of less corruption and fraud, equitable revenue distribution and a reduction in conflict. Procedural and normative benefits are expected through the empowerment of civil society, which can hold governments and corporations accountable in other spheres of the economy (Haufler, 2010).

Transparency on its own is unlikely to be sufficient to reduce corruption in the natural resource sector. Lindstedt and Naurin (2010) argue that transparency effectiveness depends on the complementary conditions of "publicity" and "accountability", where information is communicated to the public and the public moves from awareness to action. The EITI aims to ensure the "publicity" of resource information and ensure CSOs to enforce accountability measures through the collective action of an engaged citizenry. There are three spheres of accountability: vertical, through elections; horizontal, through checks and balances; and societal, through the free press and civil society (Kolstad and Wiig, 2016). The EITI can be a tool that enhances the horizontal and societal spheres, which could ultimately also contribute to vertical accountability as the principal becomes more engaged by transparency in the resource sector. Transparency can however also have adverse effects and increase corruption if the identification effect (identifying bribing channels through information disclosure) dominates the detection effect (the probability of being caught) (Kolstad and Wiig, 2008). CSOs engagement in increasing the detection effect is

crucial and depends heavily on the dissemination of information, mobilising the citizenry to remain vigilant.

Theoretical literature provides support for institutional transparency in the natural resource sector. Through disseminated disclosures, CSOs are expected to address collective action problems and mitigate the negative effects of resource abundance. In theory the resource curse is manifested directly through misallocation of resources and indirectly through the prevalence of rent-seeking governance, which reduces the incentives for structural reforms. Disclosures to CSOs are vital to hold rent-seeking governments to account. Corruption negatively affects economic growth through multiple transmission channels. Resource abundance can also be used to hamper the fight against corruption, ultimately creating a vicious circle between resource abundance, corruption and slow growth. Transparency is theorised to produce an engaged citizenry that will hold government to account through checks and balances. However, the principal–agent problem is manifested through information asymmetry that makes accountability difficult; at the very least, information disclosures should be on the principal's account. Increasingly collective action, through CSO engagement, is expected to address accountability concerns by mobilising citizens to act. This further underline the importance of institutional transparency in the natural resource sector, which can be used by CSOs to increase checks and balances on corrupt governments.

## 2.2. Empirical Literature Review
### 2.2.1. Resource Curse

The debate on whether natural resource abundance is detrimental to economic growth was ignited by a seminal paper by Sachs and Warner (1995). The authors argued that there is an inverse relationship between natural resource intensity and economic growth. The finding was based on cross-country growth regressions for 95 developing countries from 1970 to 1990. This theory was expanded by Sachs and Warner (2001), who tested the same data set for omitted geographical and climate variables. Little direct evidence was found that climate and geography explained the curse, and the "Dutch disease" hypothesis was strengthened by the tendency of resource-abundant countries to be high-priced economies. These findings were supported by Karl (1997) and Ross (1999), who found that oil-rich countries have declining income per capita and displayed lower development outcomes.

The cross-country research agenda has subsequently lost its intensity, as results have been found to hold only under specific circumstances. The results only hold for non-democratic nations; the pattern is prevalent for some resources and not for others; longer time periods turn up little evidence; and the control variables used. For example, income play a significant role (Fisman and Golden, 2017). Alexeev and Conrad (2005) have criticised the resource curse findings due to the use of initial GDP per capita when resources were discovered as a control variable, which biases the results towards a negative effect of natural resources on institutions. This is due to GDP per capita increasing when new resources are discovered, without a simultaneous increase in institutional quality. A negative coefficient is therefore assigned to resource wealth, as these newly resource-rich countries are measured against resource-poor countries where quality institutions are positively related to GDP. The authors ran 2SLS regressions on 82 countries from 1970 to 2000. The study concludes that there was little or no evidence that resource abundance slowed economic growth; in fact, it claims that resource abundance increases economic growth. Isham et al (2005), using a 3SLS model for 90 countries from 1975 to 1997, only supported the Sachs and Warner hypothesis for point-source resource exports, metals and fuel, and found no resource curse for plantation resources. Sala-i-Martin and Subramanian (2003), using an instrumental variable estimation strategy for 82 countries from 1960 to 2000, found that controlling for institutional quality, natural resource abundance has little or no effect on economic growth. Case studies

and micro-economic analyses of country-level risks have been found to be more useful than cross-country studies, especially those examining how resource abundance affects corruption and ultimately growth (Fisman and Golden, 2017).

### 2.2.2. Corruption and Economic Growth

The empirical evidence on the detrimental effect of corruption on economic growth has largely reached consensus and rejected the "grease the wheels" argument in favour of the "sand the wheels" hypothesis. Cross-country data indicates that corruption is consistently correlated with lower growth and lower GDP per capita (Rothstein and Holmberg, 2011). The theoretical arguments of the negative effect of corruption on economic growth through lower levels of investment, lower quality of investments, high indirect taxation and the misallocation of resources are largely supported by empirical studies (Dimant and Tosato, 2017).

Mauro (1995) found that corruption lowered investment, lowered the investment ratio to GDP and subsequently inhibited economic growth in corrupt economies from 1960 to 1990. This finding is supported by Wei (2000), using a sample of 12 source countries and 45 host counties, who found that corruption is a significant factor in reducing foreign direct investment in a host nation. Corruption has been found to lower capital productivity by up to 4 per cent and reduce net annual capital inflows by 0.5 per cent of GDP (Lambsdorf, 2003). Tanzi and Davoodi (2001) provide evidence for the relationship between corruption and the misallocation of talent to unproductive activities and higher levels of indirect taxation, subsequently reducing economic growth.

Ugur and Dasgupta (2011) in a systemic review of the available evidence, report that corruption has a negative effect on growth in low-income countries. The authors found that in these countries a one-unit increase in the perceived corruption index is associated with a 0.59 percentage-point decrease in economic growth. Countries with high levels of corruption have also been found to generate large shadow economies, which tend to be less efficient and grow at the expense of the official economy (Dreher and Herzfeld, 2005). Leite and Weidmann (1999), using a simple growth model, illustrated the relationship between resource abundance, corruption and economic growth. The authors found that natural resources are positively associated with corruption. The transmission channel for this association is the earning of hard currency that provides the opportunity for rent-seeking. Capital-intensive resources are found to be major determinants of corruption, and corruption is an important explanation for slow economic growth in resource-rich states (Leite and Weidmann, 1999).

### 2.2.3. Transparency and Corruption

The empirical literature shows that increased transparency can reduce corruption, albeit with some caveats, and that transparency on its own does not automatically lead to increased accountability and reduced corruption. Islam (2006), observing 169 countries from 1984 to 1997, found that increased information flows (higher transparency) on economic data led to better governance indicators. Bauhr, Grimes and Harring (2010) found that increased transparency generated different reactions in countries with higher levels of corruption to those with lower levels. In highly corrupt countries, transparency erodes political trust but stimulates civic engagement. The incitement of civic discontent in the short term is however mitigated by greater accountability and better governance in the long term.

In a cross-country study of 111 states from 1972 to 2004, Lindstedt and Naurin (2010) found that making political institutions more transparent was indeed an effective tool in fighting corruption. However, the authors stress the importance of complementary conditions such as accountability and publicity, without which transparency has limited effects on reducing corruption. Non-agent-controlled transparency, such as a free press and CSOs, was found

to have a greater effect on reducing corruption, highlighting the importance of CSOs supporting citizens to act once information is released. Kolstad and Wiig (2009) introduced transparency as an explanatory variable in the Sachs and Warner (1997) dataset. The authors found that increased transparency can reduce corruption, but only under specific circumstances. There must be incentives for agents to act on the information, along with the ability to process the information. The authors emphasise the need for an educated electorate and strong civil society that has the power to hold government accountable.

Increased transparency has also been found to have potential negative outcomes. Bauhr and Grimes (2013) found that increased transparency in highly corrupt countries tends to result in resignation and withdrawal from political life, rather than indignation and motivation to act. Transparency in these contexts suffers from a principal–agent breakdown, as there are limited effective sanctioning mechanisms available to the principal. Collective action concerns also arise, as standard game theory suggests that the individual's incentive to invest resources in collective endeavours depends on evidence that others will do the same. The role of CSOs is crucial here, as they can mobilise action on behalf of individuals, overcoming these collective-action constraints, and ultimately benefit society as a whole. Bac (2001) found that more transparency does not necessarily imply less corruption. This occurs when the "connection effect" (the ability to identify corrupt officials with whom to build relationships) dominates the probability of detection, resulting in local transparency potentially increasing corruption.

Corrigan (2013) investigated the influence that membership of the EITI has on economic development and quality of governance, including an indicator for levels of corruption. Using OLS regressions on pooled cross-sectional panel data for 200 countries from 1995 to 2009, the author found that institutional transparency mitigated the resource curse with reference to GDP per capita, facilitated limited improvement in corruption and accountability measures and showed no improvement in stability and violence indicators.

## 3. Conclusion

The use of transparency to negate corruption and encourage economic growth remains an important topic at the international fora and it is the subject of substantial empirical review. The EITI has been proposed as a practical way to use transparency as a measure to reduce the negative effect of resource abundance. The theoretical review found that through the dissemination of disclosures in the natural resource sector, the EITI can potentially reduce the prevalence of corruption in implementing countries in SSA and address negative economic growth outcomes associated with resource abundance. First, it is suggested that natural resource information disclosure to civil society organisations, through EITI membership, would reduce corruption on resource endowment in a member country. It is expected that corruption will be reduced by the mobilisation of collective action, led by CSOs having access to information, which could enhance public demand for accountability. In addition, economic growth is expected to increase because of less resource misallocation, a reduction in rent-seeking opportunities, lower inefficient taxes on businesses, and less distortion in decision-making processes. While empirical literature could not agree on the resource curse, there is a consensus on the negative impact of corruption on economic growth, and that transparency can help to reduce corruption but with a caveat. There is therefore a need to conduct an empirical analysis on EITI membership effect on economic growth and corruption reduction in sub-Saharan Africa.

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# TOURIST QUALITY OF SPAIN BEACHES UNDER THE PERSPECTIVE OF SUSTAINABILITY

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**Abstract:** *An exploration of the Autonomous Communities of Spain with the highest number of beaches with Q of quality is studied in this work. The purpose of this paper is to analyzed the Autonomous Community with the more Q of Quality and study the differences between the tourism expenditure in this region. The Q of quality is a certificate granted by the Institute for Spanish Tourism Quality that guarantees high quality in certain sectors. This study finds that Andalusia is the main autonomous community with the highest number of beaches with quality Q. In addition to this, a comparison between the average expenditure of residents in Spain and foreigners who take leisure trips is analyzed in this study. However, when comparing the average expenses of people who do tourism in Andalusia to the average cost throughout the entirety of Spain during their vacations and holidays, it was determined that they are not significantly different. Even so, a significant difference between the average expenditure of residents and tourists in Spain is determined. In future research, this study will be extended to the other Autonomous Communities of Spain to find differences among them.*

**Keywords:** sun and beach tourism, quality Q, sustainability.

**JEL classification:** Z32

## 1. Introduction

Sustainability in general and it's influences on tourism has been the main focus of numerous papers during the last few years (Sverdrup and Svensson, 2002; Dresner, 2008; Badulescu and Badulescu, 2012; Badulescu D. et al, 2015). There are numerous types of tourism destinations: mountains, seaside, cultural cities or music festivals, and they all have different levels of sustainability. In the case of seaside tourism, researchers have focused on different topics: residents' atitude (Lundebrg, 2017), urban logistics in seaside resorts (Hacia, 2016) and social issues generated by tourists (Agarwall et.al. 2018).

Because Spain has been one of the most important tourism destinations (UNWTO 2019), sustainability has been important for both authorities and researchers. Considering the complexity of Spanish tourism resources, some authors have focused on World heritage sites (Dans and Gonzalez 2019), regional development (Carrillo and Jorge, 2017) and of course coastal destinations (Blancas et. al. 2010).

One of the most important tourism destinations in Spain is the region of Andalusia. It is located in the southern part of Spain, and it has a total land surface of 87.268 km$^2$ and a

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total population of 8,41 million (Eurostat 2019). The region attracts tourists for several reasons: sea and sun, health, culture, conferences and congresses etc.

From a regional perspective, tourism is an important factor in the Andalusian economy because it generates employment and produces a multiplier effect that influences other activities that make up the regional pproduction system (Andalusía Board, 2018). In more detail, tourism is like a driving force for the regional and local economic growth of a country, especially in those regions where it forms a relevant activity collated with the other sectors (OMT, 2015).

The growing demand in this field requires greater orientation towards more sustainable and efficient models that offer quality and innovation in their services (Andalusian Board / Junta de Andalucía, 2018).

Notably, tourism is subjective to territory because a natural territory such as beaches can be attractive for tourists. In addition, the displacement to a particular place is conditioned depending on the territory, as well as to the type of tender that is offered due to the territory and the ability to adjust and model tourism through policies (OMT, 2015). In this sense, the term "tourist product" can be encompassed by the combination of aspects, such as characteristics of the places visited, means of transport, types of accommodation, specific activities offered at the destination, among others. This is placed around a certain center of interest (e.g., excursions, tours, sports). In this way, gastronomic tourism, ecotourism, city tourism, rural tourism, sun and beach tourism, winter tourism, health tourism, among others can be tourism products (RIET, 2008).

This paper is dedicated to presenting a quantitative exploratory study on the sun and beach tourism product in Spain. Specifically, the data regarding the Q of quality on the beaches of Spain are examined, and the average tourism expenditure by residents in Spain and foreigners are differentiated.

The structure of this work is organized as follows: section 2 is dedicated to representing the state of art necessary for the development of this work. The Q of quality, descriptive statistics, normality test and test for two samples are the concepts which are presented. Section 3 presents the results obtained with each of the methods explained in the previous section. Finally, in section 4, the results obtained and their conclusions are discussed.


## 2. Research methodology
### 2.1.Q of Quality

Any tourist company whose commercial sector has a Reference Standard can request the Spanish Tourism Quality Q mark (Calidad Turística Española, 2017). This Q of Quality consists of a quality mark awarded by the Spanish Tourism Quality Institute (ICTE).

The ICTE is a Spanish, private, independent, non-profit organization. In detail, it consists of a Quality Systems Certification Entity that has been created especially for tourism companies. ICTE is made up of the most significant national tourism entities in Spain, for example, the SET, the CCAA and the FEMP.


### 2.2. Descriptive statistics

Descriptive statistics is a branch of mathematics that collects, presents and characterizes a set of data. Thus, the characteristics of a data set are adequately described with descriptive statistics.

The Box Plot or Mustache Diagrams are a convenient way to visualize the distribution of data through their quartiles. Sometimes outliers are plotted as individual points aligned with the whiskers (Sidney y Castellan, 1988).

## 2.3. Shapiro-Wilk Normality Test

Goodness of fit tests are dedicated to determine if the data of a population fits a given distribution. One of these goodness-of-fit tests is the Shapiro-Wilk normality test, which contrasts for a certain level of confidence the null hypothesis, that the data comes from a population with normal distribution, especially for a small sample of data. The following hypoteses are what this test contrasts:

Null hypothesis $H_0$: the data is normally distributed.

Alternative hypothesis $H_1$: the data is not normally distributed. The contrast orders the sample from least to greatest and then calculates a contrast statistic:

$$W = \frac{1}{ns^2} \left( \sum_{i=1}^{h} a_{in}(x_{(n-i+1)} - x_{(i)}) \right)^2$$

Where let $s^2$ be the sample variance,

$$h = \begin{cases} \frac{n}{2}, & \text{if } n \text{ is pair} \\ \frac{n-1}{2}, & \text{if } n \text{ is odd} \end{cases}$$

and $a_{in}$ can be found in the statistical tables.

Then, if the value of the statistic is lower than a pre-established level of significance, the null hypothesis is rejected and, therefore, the data is not normally distributed.

## 2.4. Tests for two samples

Usually, using the Student's t-test you can compare two populations and determine if there are significant differences between them. The procedure can consist of two classes depending on how both samples are constructed:

**1.** Paired samples: where each observation in a group has an observation associated with the second group.

**2.** Independent samples: where the individuals of a treatment group have been extracted independently of those from the other group.

When the study population has a normal distribution, this test for two samples is adequate. Otherwise, the Mann-Whitney or Mann-Whitney-Wilcoxon U test is adequate for independent samples that are not normally distributed.

The Mann-Whitney U test is used to check the heterogeneity of two ordinal samples.

This test calculates a U statistic, which establishes for each of the values of the two samples its range to construct (Sidney y Castellan, 1988).

$$U_1 = n_1 n_2 + \frac{n_1(n_1 + 1)}{2} - R_1 \qquad U_2 = n_1 n_2 + \frac{n_2(n_2 + 1)}{2} - R_2$$

Where let $n_1$ y $n_2$ be the simple size, let $R_1$ y $R_2$ be the sum of the ranges of the sample observations, and let $U$ be the statistic defined as the minimum of $U_1$ y $U_2$.

The statistic $U$ is given by the following expression:  $z = \frac{(U - m_U)}{\sigma_U}$

where $m_U = \frac{n_1 n_2}{2}$ y $\sigma_U = \sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}}$ .

## 3. Results and findings
### 3.1. Q of Quality
Spain is made up of 17 autonomous communities, out of which only 15 have access to the sea, and 11 of those have quality Q beaches. The number of certified beaches that obtained the Q of Tourism Quality in Spain in 2017 by autonomous community can be seen as follows bewllow. Notice that the Autonomous Community with the highest number of beaches with quality Q is Andalusia (Figure 1). It can be noted that Andalusia almost doubles the number of beaches with Q of quality than the Valencian community, which occupies the second position. The communities that have less beaches with quality Q are the Basque country and the Canary Islands.
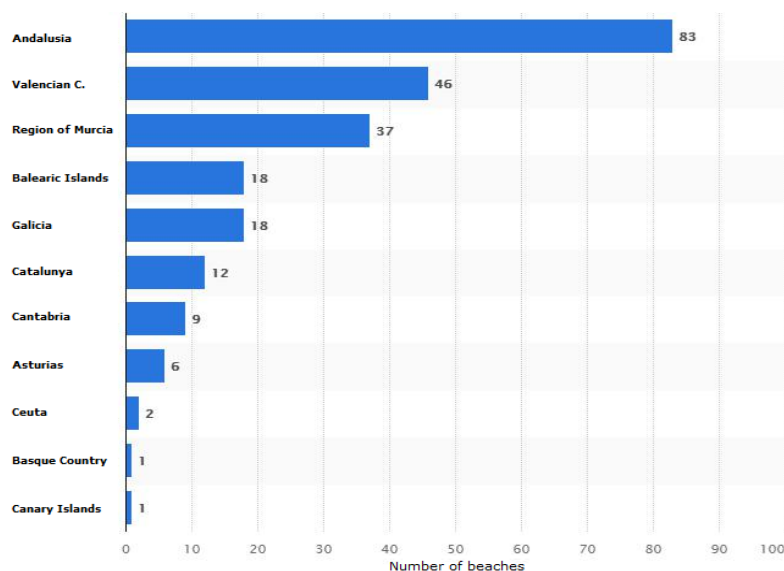


**Figure 1.** Number of beaches certified with the Q of Tourism Quality in Spain in 2017 by autonomous community.
Source: Statistics National Institute 2017

### 3.2. Descriptive analysis
This section describes the data to be analyzed, which is composed of the three study populations described below:
Andalusia (1): corresponds to the average expenses incurred by residents in the Community Autonomous of Andalusia.
Spain (2): corresponds to the average expenses incurred by residents in Spain.
Foreigners (3): corresponds to the average expenses incurred by residents in other countries. Each of the three study populations is described below:

**Table 1**: Statistics of the average expenditure (in euros) by residents in Andalusia, Spain and foreigners.

|  | N | Range | Min | Max | Mean | Std. dev |
|---|---|---|---|---|---|---|
| **Andalusia** | 32 | 171,30 | 137,82 | 309,12 | 201,9228 | 46,94205 |
| **Spain** | 32 | 153,44 | 136,17 | 289,61 | 187,3778 | 44,24357 |
| **Foreigners** | 32 | 528,09 | 491,02 | 1019,11 | 775,3831 | 136,08897 |
| **N valid (list)** | 32 |  |  |  |  |  |

Source: made by the authors

Figures 2, 3 and 4 show the average expenses of residents in Andalusia, residents in Spain and foreign residents, respectively. In these Figures, it is observed that the average expenditure has a seasonal behavior, which increases during the holidays and decreases outside of holiday periods.
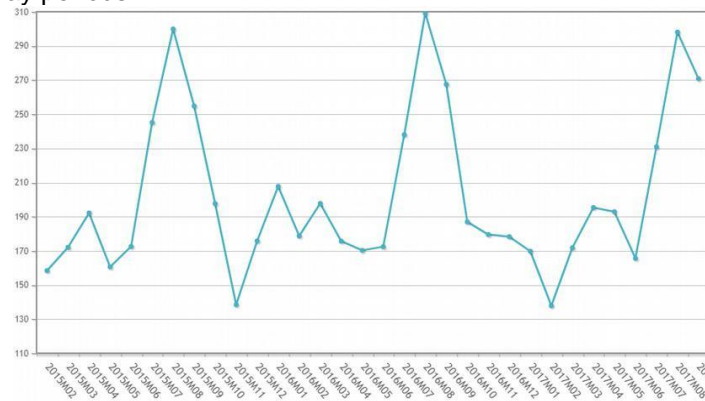


**Figure 2:** Average expenditure by residents in Andalusia
Source: Statistics National Institute 2017
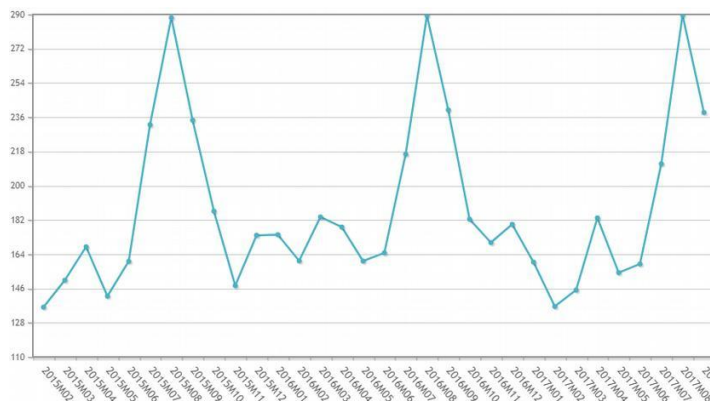


**Figure 3:** Average expenditure by residents in Spain
Source: Statistics National Institute 2017
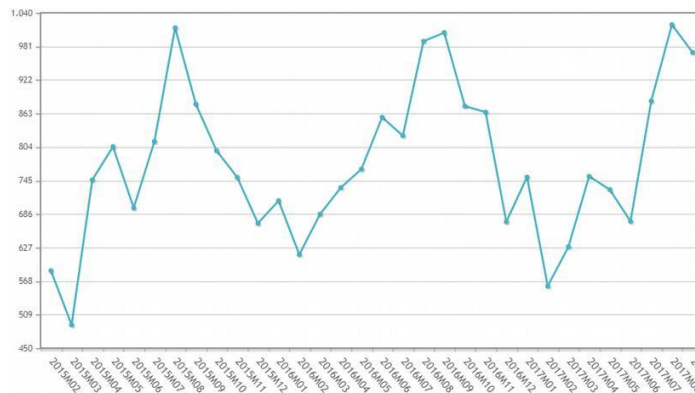
**Figure 4:** Average expenditure by foreign residents
Source: Statistics National Institute 2017

### 3.2.1 Box and mustache diagram
In the figure below, the difference between the average expenditure of these three populations in question is observed. It is noted that residents in foreign countries make a higher average of the expenditure as compared to residents in Spain. Likewise, the shape of the boxes for the two populations of Spain, suggests that they are not normally distributed.
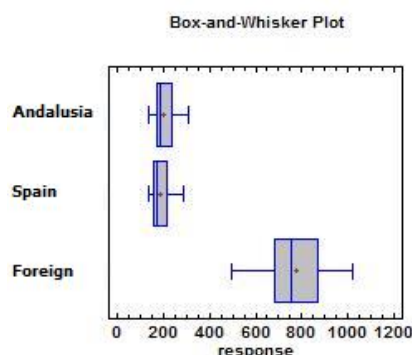


**Figure 5**: Diagram of average expenditure boxes by residents in Andalusia, Spain and foreign countries.
Source: own elaboration

### 3.3. Normality test
The Shapiro-Wilks test raises the null hypothesis that a sample comes from a normal distribution. We choose a level of significance, for example 0.05, and we have an alternative hypothesis that maintains that the distribution is not normal. We have:

$H_0$: The distribution is normal
$H_1$: The distribution is not normal

### 3.3.1. The case of Spain
Table 2: Normality test for Spanish residents.

| Test | Statistic | p-value |
|------|-----------|---------|
| Shapiro-Wilk | 0,850515 | 0,000280514 |

Source: own elaboration
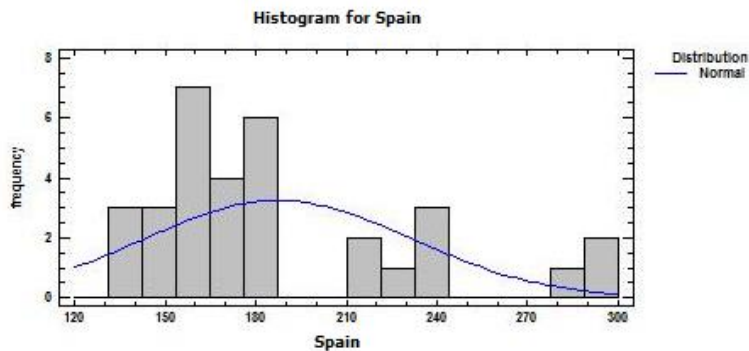
**Figure 6**: Histogram of average expenditure by residents in Spain
Source: own elaboration

The data of this population is not normally distributed as is shown in Table 2 where the p value is lower than 0.05 and it can be seen in the histogram in Figure 6.

### 3.3.1. The case of Andalusia
It is concluded that the data of this population does not have a normal distribution as seen in Table 3 and Figure 7 because the p-value is greater than 0.05.

**Table 3**: Normality test for Andalusian residents.

| Test | Statistic | p-value |
|---|---|---|
| Shapiro-Wilk | 0,869859 | 0,000918306 |

Source: own elaboration
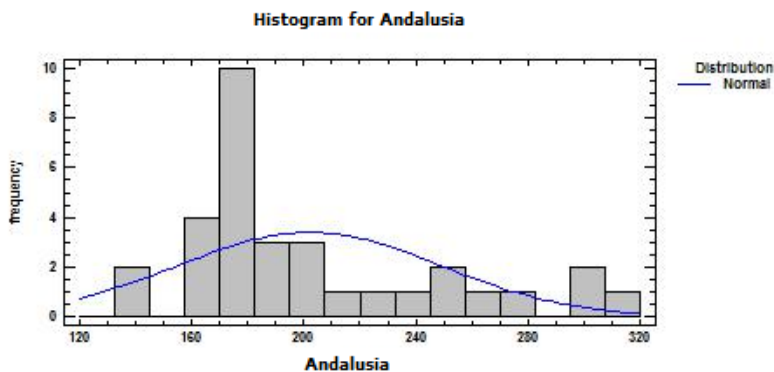


**Figure 7**: Histogram of average expenditure by residents in Andalusia.
Source: own elaboration

### 3.3.3. The case of foreigners
There is no evidence to reject the null hypothesis that indicates that the data of this population has a normal distribution as seen in Table 4 and Figure 8 because p-value is greater than 0.05.

**Table 4:** Normality test for foreign tourists.

| Test | Statistic | p-value |
|---|---|---|
| Shapiro-Wilk | 0,969563 | 0,547912 |

Source: own elaboration
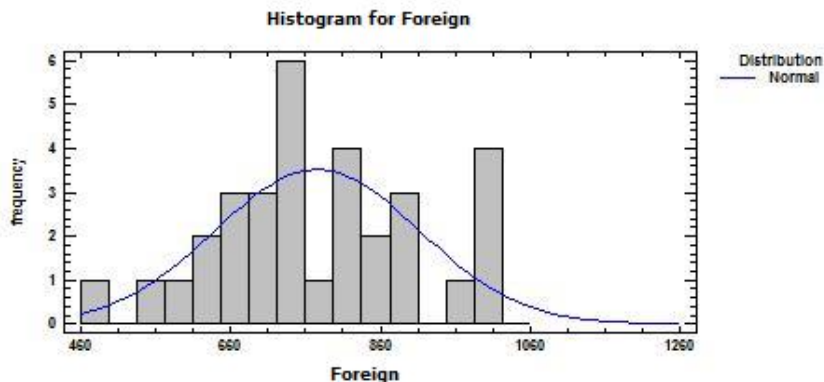
**Figure 8**: Histogram of average expenditure by foreign tourists.
Source: own elaboration

### 3.4. Test for two samples

It is important to determine if there are differences between the average expenditure of residents in Spain with foreigners and the average expenditure of residents in Andalusia with residents in Spain. Thus, the differences between the two groups, the communities that integrate cities with this distinction and those that do not, by comparing populations for independent samples are studied. Therefore, in the first place, it is necessary to study whether the variable "average expenditure" for the three populations is normally distributed by means of a visualization of the corresponding histogram and the Shapiro-Wilk test.

To do this, we proceed to study the differences between these groups through the non-parametric statistical test of Mann-Whitney U.

The results obtained with the Mann-Whitney U test are shown in the following subsections

### 3.4.1. Spain - Foreigners

The tables below confirm that the observed difference between these two types of communities is statistically significant because the p-value is lower than 0.05.

**Table 5**: Mann-Whitney U test result among residents and other foreign countries.

|  | **Ranks** | | | |
|---|---|---|---|---|
|  | id | N | Average Range | Sum of Ranges |
| **Tourism** | 2,00 | 32 | 16,50 | 528,00 |
|  | 3,00 | 32 | 48,50 | 1552,00 |
|  | Total | 64 |  |  |

Source: own elaboration

**Table 6:** Contrast statistics (Grouping variable: id).

|  | **Tourism** |
|---|---|
| U of Mann-Whitney | 0,000 |
| W of Wilcoxon | 528,000 |
| Z | -6,875 |
| p-value | 0,000 |

Source: own elaboration

### 3.4.2. Andalusia – Spain

In Tables 7-8 can be noticed that the p-value cannot be rejected because it is greater than 0,05 so, there is no difference observed between these two types of statistically significant communities.

**Table 7:** Mann-Whitney U test result among residents in Andalusia and throughout Spain.

| | | | Ranks | |
|---|---|---|---|---|
| | id | N | Average Range | Sum of Ranges |
| **Tourism** | 1,00 | 32 | 36,41 | 1165,00 |
| | 2,00 | 32 | 28,59 | 915,00 |
| | Total | 64 | | |

Source: own elaboration

**Table 8:** Contrast statistics (Grouping variable: id).

| | Tourism |
|---|---|
| U of Mann-Whitney | 387,000 |
| W of Wilcoxon | 915,000 |
| Z | -1,678 |
| p-value | 0,093 |

Source: own elaboration

### 3.4.3. Andalusia - Foreigners

The tables below confirm that the difference observed between these two types of communities is statistically significant, with a p-value lower than 0.05.

**Table 9:** Mann-Whitney U test result among residents in Andalusia and other foreign countries.

| | | | Ranks | |
|---|---|---|---|---|
| | id | N | Average Range | Sum of Ranges |
| **Tourism** | 1,00 | 32 | 16,50 | 528,00 |
| | 3,00 | 32 | 48,50 | 1552,00 |
| | Total | 64 | | |

Source: own elaboration

**Table 10:** Contrast statistics (Grouping variable: id).

| | Tourism |
|---|---|
| U of Mann-Whitney | 0,000 |
| W of Wilcoxon | 528,000 |
| Z | -6,875 |
| p-value | 0,000 |

Source: made by the authors

Data processing was done with IBM SPSS Statistics 20 and Statgraphics Centurion XVI.I, with maximum levels of significance for the contrast of statistical tests of p = 0.05.

## 4. Conclusions

In this study, Andalusian tourism descriptive statistics have been analyzed in order to know more of this Spain Community which is very touristic all year round. In the first place, it has been found that Andalusia is the Autonomous Community with the highest number of

beaches with Q of Quality. In addition, a higher average expenditure during holidays by residents of this autonomous community is obtained. However, it was found that there are no significant differences in the average expenditure of the residents of Andalusia with respect to the average expenditure made by residents in Spain during their days of tourism. Although there is a difference between the average expenditure of residents in Andalusia and throughout Spain and that of foreigners who do tourism in the country. In this way, it can be concluded that besides being the Community of Spain with the most beaches with Q of Quality, it is a Community that has significant benefits during the holidays both from residents and also from foreigners. This study can be extended to other Communities of Spain in order to find significant differences between them.

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# DYNAMIC PANEL DATA ANALYSIS OF THE IMPACT OF INTELLECTUAL PROPERTY RIGHTS ON ENTREPRENEURSHIP IN EMERGING AND DEVELOPING COUNTRIES

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**Abstract:** *Entrepreneurship is considered as a key driver of economic growth and development. That is why, scholarly contributions have set out to identify its national determinants. In the present study, we aim to shed some light on to how the institutional framework affects the entrepreneurship levels, by focusing on emerging and developing countries. More specifically, this study examines the impact of intellectual property rights (IPR) on entrepreneurship in emerging and developing countries. This issue is becoming increasingly important, especially in the context of developing countries which adhere to the Trade Related Intellectual Property Rights Agreement (TRIPS). Further to this agreement, all member countries of the world trade organization are required to achieve high standards of IPR. From the theoretical analysis, it appears that the impact of IPR on innovative entrepreneurs is positive, while their impact on imitators is more ambiguous. To empirically test these hypotheses, we apply a System Generalized Method of Moments (System GMM) technique on a panel of 28 countries during the period 2005-2012. The entrepreneurship level is measured by the new business entry density while the protection degree of intellectual property rights is measured by the IPR index of World Economic Forum. The findings show a non-significant effect of IPR on new business entry. We conclude that the intellectual property rights are not an effective tool of industrial policy in emerging and developing countries. Governments should rely on other factors in order to spur entrepreneurship.*

**Keywords**: entrepreneurship, innovative entrepreneurs, imitators, intellectual property rights, emerging and developing countries.

**JEL Classification**: K11, O3, O25

## 1. Introduction

Entrepreneurship is increasingly seen as a key driver of economic development (Baumol, 1990; Wennekers and Thurik, 1999; Minniti and Lévesque, 2008). It fosters innovation, enhances employment creation and ensures more equitable income distribution (Baumol, 1990; Acs, 2006).

Due to the beneficial role of entrepreneurship in economic growth and development, scholarly contributions have set out to identify its national determinants. Researchers have considered economic, institutional and psychological factors that may explain differences in the levels of entrepreneurial activity. In this paper we examine the institutional environment. According to North (1991), institutions are the humanly devised constraints that structure political, economic and social interactions. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights). Institutions can both enable behaviors and constrain them.

While the question concerning what determines the level of entrepreneurship in developed countries is well studied, much less attention has been given to the determinants of

entrepreneurship in developing countries. Therefore, the purpose of this paper is to shed some light on to how the institutional framework, especially, the Intellectual Property Rights (IPR), affect the entrepreneurship level in emerging and developing countries. This issue is becoming increasingly important especially in the context of developing countries which adhere to the Trade Related Intellectual Property Rights Agreement (TRIPS). Further to this agreement, all member countries of the world trade organization are required to achieve high standards of IPR.

Our study aims to enrich existing literature by examining the impact of IPR on entrepreneurship for 28 countries between 2005 and 2012. To estimate our dynamic panel data model, we employ a System Generalized Method of Moments (System GMM) technique. The System GMM estimation technique is more efficient than the traditional two-way fixed effect model. It addresses the endogeneity problem more accurately by using internal instruments for endogenous variables. It jointly estimates the equation in first difference and in the levels-first difference instrumented by lagged levels of the dependent and explanatory variables and levels instrumented by first differences of the regressors. Our estimated results show a non-significant impact of intellectual property rights on entrepreneurship.

The remainder of the paper is organized as follows: In Section 2 we discuss theoretical issues and empirical results relative to previous studies. In Section 3 we introduce the data and empirical methodology. Our empirical findings are presented and discussed in Section 4. Section 5 contains our conclusions.

## 2. Literature review
### 2.1. The concept of entrepreneurship: Definition

Entrepreneurship is defined in several ways. Schumpeter (1934) points out that entrepreneurship takes place when there is an innovation, that is, when an introduction of new products, organizations or processes occurs. According to him, entrepreneurship is related to the creation of new combinations. Therefore, a person who creates a new business by imitating existing firms is not an entrepreneur in the Schumpeterian sense.

In his article "Entrepreneurship: productive, unproductive and destructive", Baumol (1990) distinguishes between several forms of entrepreneurship. He stresses that entrepreneurs are defined as persons who are ingenious and creative in finding ways that add to their own wealth, power, and prestige. The general environment plays an important role in determining each type of entrepreneurship, that can either be productive or unproductive. According to Baumol, the choice of entrepreneurs between good and bad business depends on their relative performance. Therefore, there must be adequate incentives and institutions to better pay for productive entrepreneurship.

The GEM (Global Entrepreneurship Monitor) studies employ two categories of entrepreneurship: opportunity and necessity entrepreneurship. Opportunity entrepreneurship refers to new firm formation based on innovation. Necessity entrepreneurship takes place in countries with a high unemployment rate, like in the case of developing countries.

Minniti and Lévesque (2010) distinguish between research-based entrepreneurs and imitators. When a country has a research and development infrastructure, a potential entrepreneur can take advantage of this context in order to become a research-based entrepreneur. But, if there is an underdeveloped R&D infrastructure, the entrepreneur will be an imitator, in that he would take advantage of the innovations of entrepreneurs from other countries. This is the case of most developing countries. In these countries, human capital is low and technologies are so poor that they cannot invest in R&D, but they may benefit from technology transfers that will contribute to their economic development.

In this paper, we prefer this last categorization as we focus on developing countries. Therefore, we define entrepreneurship as a process of starting up a business based on research and innovation (innovative entrepreneurs) or on imitation (imitators).

## 2.2. IPR and entrepreneurship: Theoretical framework

According to several scholars (North and Thomas, 1973; Williamson, 1985; Barzel, 1997), property rights systems form the backbone of the modern set of institutions that characterize the market economy. Acemoglu and Johnson (2005) show that property rights have pronounced effects on investment, financial development and long run economic growth.

Parker (2007) notes that well protected property rights help promote entrepreneurship and innovation. In addition, weaker property rights are likely to foster the development of predatory forms of entrepreneurial activities (Henrekson, 2007).

Intellectual property rights form the most important component of property rights, relevant for both types of entrepreneurs: innovators and imitators.

For the case of innovative entrepreneurs, the positive link between the protection of intellectual property rights and the formation of new firms is explained by Baumol (1993). Indeed, the later points out that entrepreneurs tend to operate in areas that offer the highest financial returns. Thus, entrepreneurs' activities vary according to the reward structure of the economy. When this structure changes, for market, political or institutional reasons, entrepreneurs will be the first economic agents to identify and respond to the opportunities generated by these changes. Strengthening IPR protection in a given country can change the structure of the economy's rewards by increasing the potential returns generated by investments in innovation activities and allows for formation of a new firm in order to exploit these innovations.

For the case of imitators, the impact of IPR protection on entrepreneurial income is ambiguous (Kihlstrom and Laffont, 1979; Evans and Jovanovic, 1989). If IPR protection laws act to restrict access to technology for imitative firms, then a negative effect will dominate. On the other hand, if IPRs create new profit opportunities for new firms by creating new opportunities that can be imitated and exploited perfectly by new small businesses, then they will have a positive impact on a country's entrepreneurial activity.

In this case, the question is whether the marginal effect of the IPR on the stock/pool of knowledge on which the entrepreneur is basing his imitation is more important than their marginal effect on the restriction of access to this stock of knowledge by intensifying the monopolistic power of innovators. So, in this paper we try to evaluate what is the dominant effect.

## 2.3. IPR and entrepreneurship: Overview of literature

A number of empirical studies examine the relationship between IPR protection and entrepreneurship. For example, Desai et al. (2003) analyze institutions and entrepreneurial activity in Europe and find that there is more entrepreneurship in countries with better property rights among the emerging economies in Eastern Europe, but that this effect is attenuated for the advanced economies in Western Europe.

Pissarides et al. (2003) study small and medium enterprises in Russia and Bulgaria. They find that the insecurity of property rights is not a constraint, but that financing is the major constraint of entrepreneurs operating in these countries.

Claessens and Laeven (2003) found that industries that rely on intangible assets show a disproportionately lower rate of growth in countries characterized by weak intellectual property rights.

Estrin et al. (2011) find no significant impact from intellectual property rights on entrepreneurship in 55 countries for the 2001-2006 period.

Livramento and Foray (2007) show that for developed countries, increases in the IPR regime positively affect the formation of high growth expectation entrepreneurship but this relationship is negative for developing countries.

Using the GEM surveys for 42 countries over the 1998-2005 period, Estrin et al (2009) analyze how institutional environment and entrepreneurial characteristics affect the decisions of individuals to become entrepreneurs and their aspirations to set up high-growth ventures. They find that institutions exert different effects on entrepreneurial entry and on the individual choice to launch high-growth aspiration projects. In particular, a strong property rights system is important for high-growth aspiration entrepreneurship, but has less pronounced effects for entrepreneurial entry.

From a survey of new firms in post-communist countries, Johnson et al. (2002) find that weak property rights discourage firms from reinvesting their profits.

Klapper (2006) find that there is more entry in R&D intensive industries in countries that better protect property.

Using data on 1,397 patents assigned to the Massachusetts Institute of Technology during the 1980-1996 period, Shane (2001) shows that the effectiveness of patent protection is one factor that influences the likelihood that a new technology will be exploited through firm formation.


## 3. Methodology
### 3.1. Sample description

Our sample includes 28 emerging and developing countries. The period of study is from 2005 to 2012. In this paper, we adopt the ranking of countries according to the report of the International Monetary Fund (IMF, 2012), which classifies countries into two categories: "Advanced Economies" and "Emerging and Developing Economies." Countries included in our sample are: Argentina, Bolivia, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Egypt, El Salvador, Hungary, Indonesia, Jamaica, Jordan, Latvia, Lithuania, Malaysia, Mexico, Morocco, Panama, Peru, Philippines, Poland, Romania, Russia, Thailand, Tunisia, Turkey, Uruguay.


### 3.2. Measurement of variables
### 3.2.1. Dependent variable

According to Klapper et al. (2010), entrepreneurship is identified as initiating economic activities via the legal process of starting a business. This definition implies that the rate of new business entry is an adequate measure of entrepreneurship in a country. In particular, for this paper, the entrepreneurship level (ENT) is measured by the new business entry density, which is defined as the number of newly registered limited liability corporations per calendar year, normalized by working age population. The same measure was used by Klapper et al. (2010), Klapper and Love (2011) and Hartwell (2014). The entry density variable is widely available, widely used and an internationally comparable metric. Moreover, the weighted nature of the indicator takes into account differing population sizes of countries.

The data are obtained from the World Bank's World Development Indicators.


### 3.2.2. Independent variables

To measure the protection degree of intellectual property rights (IPR), we follow Desai et al. (2003), Livramento and Foray (2007) and Estrin et al. (2011), and use the index of World Economic Forum which conducts a survey covering business leaders in various countries. The survey aims to see whether they view that intellectual property is well protected, with a scale ranging between 1 (disagree) and 7 (strongly agree). The average score for all

respondents in a country gives the index for that country. The results of this survey are published in the Global Competitiveness Report (GCR). So, we have obtained data from different issues of that report.

The control variables are: GDP per capita (GDP); unemployment rate (UNEMP) and financial development level (FD).

The data on Purchase Power Parity (PPP) converted GDP per capita, at 2005 constant prices come from Penn World Table.

The unemployment rate refers to the share of the labor force that is without work but available for work and seeking employment.

The financial development is measured by domestic credit to private sector as share of GDP. The data on both unemployment and financial development comes from the World Bank's World Development Indicators (WDI).

To ensure normality of variables, we transform them in natural logarithm. Summary statistics for the variables (not logged in) are given in Table 1.

**Table 1:** Summary statistics

|  | **Mean** | **Median** | **Stand. dev** | **Minimum** | **Maximum** |
|---|---|---|---|---|---|
| ENT | 3.061 | 1.284 | 3.97 | 0.085 | 21.487 |
| IPR | 3.438 | 3.5 | 0.631 | 1.7 | 5.1 |
| GDP | 7379.084 | 7686.363 | 3667.897 | 1720.088 | 13963.67 |
| UNEMP | 8.233 | 7.7 | 3.632 | 0.7 | 19.5 |
| FD | 50.656 | 43.657 | 26.585 | 10.612 | 136.301 |

### 3.3. Econometric estimation

We use the Generalised Method of Moments (GMM) to estimate our dynamic panel data model. This method is adequate for our case in which as mentioned by Mileva (2007), the panel dataset has a short time dimension (T = 8) and a larger country dimension (N = 28). Moreover, it uses a set of instrumental variables to solve the endogeneity problem arising from the potential correlation between the independent variables and the error term in dynamic panel data models. It also permits to deal with omitted dynamics in static panel data models, owing to the ignorance of the impacts of lagged values of the dependent variable (Bond, 2002). Indeed, Holcombe (1998) notes that entrepreneurship generates more entrepreneurship. The business birth rate observed in the last period must explain the present rate.

To estimate our empirical model, we use the system GMM technique of Blundell and Bond (1998). The set of instruments of the system-GMM estimator includes not only all the available lags in difference of the endogenous variables and the strictly exogenous regressors but also the lagged values of the dependent variable (Blundell and Bond, 1998).

Our dynamic panel data model is represented as follow:

$$ENT_{it} = \beta_0 + \beta_1\, ENT_{it-1} + \beta_2\, IPR_{it} + \beta_3\, X_{it} + \mu_i + \varepsilon_{it} \qquad (1)$$

i = 1,.., N denotes the country (in our study, N = 28) and t = 1,…T denotes the time period (in our study, T = 8).
ENT is the entrepreneurship level, IPR is the indicator of intellectual property rights protection, X is a vector of control variables, $\mu$ is an unobserved country-specific effect and $\varepsilon$ is the time-varying error term.
X = (GDP, UNEMP, FD).

Our estimations have been performed using the xtabond2 command in Stata 12. A crucial preliminary step in the estimation procedure consists of classifying the regressors as strictly exogenous, predetermined or endogenous variables. This classification has important

implications in terms of the proper choice of instruments. In our model, we classified initial entrepreneurship, IPR index, GDP and financial development as endogenous variables. The predetermined variable is the unemployment rate. No variables were assumed to be exogenous.

## 4. Findings

Consistency of the GMM estimator depends on the validity of instruments. To address this issue, we consider three specification tests: the first is the Hansen test of over-identifying restrictions, which tests the overall validity of the instruments (the null hypothesis is that the instruments are valid). The second and third tests are the first and second-order autocorrelation test for error term, which tests the null hypothesis according to which there is no autocorrelation. As shown in Table 2, the p-value of Hansen test ($1.000 > 0.05$) indicates that the used instruments are valid. The p-values of Arrelano-Bond test are 0.175 for AR(1) and 0.078 for AR(2), both greater than 0.05. Therefore, there is no autocorrelation of the error term. Accordingly, we can conclude that the GMM system estimation is robust and appropriate.

Based on the GMM system estimation, we find that the effect of intellectual property rights on entrepreneurship is not statistically significant.

Of the control variables, we find evidence of positive effects on entrepreneurship of one year lagged value of entrepreneurship and GDP at 1% level. Moreover, results show that the financial development level has a negative effect, while unemployment rate does not have a significant effect on new business entry.

The main result of our study, that is the insignificant effect of IPR protection on new business entry density, is consistent with that of Estrin et al. (2011). They suggest that research and innovation-based entrepreneurs are more stimulated by the overall strength of the property rights system, rather than any single aspect such as intellectual property rights, to start up their business.

Our findings contradict those of Shane (2001) and Desai et al. (2003), who find a significantly positive effect of intellectual property rights on entrepreneurial activity. One possible explanation for this difference is that these studies focus on developed and not on developing countries.

Our result can be explained by an inadequate national innovation framework to facilitate entrepreneurial activities that are sensitive to IPR protection. It can also be explained by the fact that the protection of IPRs in developing countries leads to an intense monopolistic power granted to innovators. This causes the restriction of access to the stock of knowledge on which the entrepreneur can base his imitation, which prevents the creation of new businesses based on imitation.

We may also refer the cause of this null effect to the negative consequences of TRIPS agreement on developing countries. Indeed, it is important to note that the majority of entrepreneurs in developing countries are imitators. The strengthening of IPR protection raises the cost of investing in some activities because they are becoming "illegal". Indeed, some developing countries granted patents on drug manufacturing processes. This allows generic producers to copy a drug and design it in a new way by using different manufacturing processes. Now, and after adoption of the TRIPS agreement, this type of activity becomes illegal and producers are prohibited from transgressing drug patents invented and manufactured by developed countries.

**Table 2.** System GMM model regression

| Independent variables | Dependant variable: ENT = new business entry density | |
|---|---|---|
| | Coefficients β | Standard Errors |
| Constant | -6.63 | 2.482*** |
| L.ENT | 0.536 | 0.208*** |
| IPR | 0.166 | 0.128 |
| GDP | 0.869 | 0.333*** |
| UNEMP | -0.062 | 0.044 |
| FD | -0.222 | 0.121* |
| Observations | 195 | |
| Number of instruments | 67 | |
| Hansen J test (p-value) | 1.000 | |
| AR(1) test (p-value) | 0.175 | |
| AR(2) test (p-value) | 0.078 | |
| Coefficients and standard errors are given in this table. *, **, *** : coefficients are significant at 10 %, 5 % and 1 %. All variables are in natural logarithm. L.ENT, IPR, GDP, UNEMP and FD denote respectively: lag of entrepreneurship, IP index of GCR, GDP per capita, unemployment rate and domestic credit to private sector (%GDP). | | |

## 5. Conclusion

The aim of this study was to evaluate the role of entrepreneurial intellectual property rights in emerging and developing countries. Two categories of entrepreneurship are defined in this paper: innovative entrepreneurs and imitators. From the theoretical analysis, it appears that the impact of IPR on innovative entrepreneurs is positive, while their impact on imitators is more ambiguous. The empirical evidence shows that the effect of IPR on new business entry density in a set of emerging and developing countries is not statistically significant. Our study proves that emerging and developing countries have a poor national innovation framework, which unable to facilitate entrepreneurial activities that are sensitive to IPR protection. It also highlights the negative consequences of the TRIPS agreement on developing countries. We conclude that intellectual property rights are not an effective industrial policy tool in these countries. Governments should rely on other factors to spur entrepreneurship.

Our analysis suffers however from some weaknesses. For example, the metric of intellectual property rights is imprecise given the estimating of the quantitative impact, this is because of its ordinal nature and because the survey regarding the respondents' perceptions concerning what constitutes strong and weak IPR are likely to vary. For future research, we propose to use another indicator to measure the robustness of the IPR system and to compare the results found with those of the present study.

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## SHOPPERS' PERCEPTION OF RETAIL CONVENIENCE IN ONLINE SHOPPING IN BENIN CITY, NIGERIA

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**Abstract:** *In view of the fact that shopping is part of everyday life and that it has significant implications for everybody's livelihood and welfare, this study has investigated shoppers' perception of retail convenience in online shopping as well as examine the influence of demographic attributes on shoppers' perception of retail convenience in online shopping. A 20- item questionnaire was developed so as to measure the four different dimensions of retail convenience. It was administered on a sample of 500 respondents consisting of online shoppers in Benin City. On the whole, 423 copies of the questionnaire were returned and found usable, thus giving an 84.6% response rate. The data obtained was coded and analyzed using means, standard deviation, frequency distributions, and T-test. The results revealed that online shoppers have a favorable perception of all the dimensions measuring retail convenience. However, shoppers have a more favorable perception of search convenience. The study has also found that demographic attributes such as gender, age, education, occupation and income do not significantly influence shoppers' perception of online retail convenience. It is therefore recommended that online retailers should emphasize retail convenience, including access convenience, search convenience, transaction convenience and possession convenience as these constructs are crucial for developing retail convenience and serve as a source for competitive advantages.*

**Keywords:** Demographic attributes, online shopping, perception, shoppers, retail convenience, Internet.

**JEL classification:** M31, M37.

### 1. Introduction
Before 1980, the only available option for shopping was the brick-and-mortar store (Li, Lu and Talebian, 2015). Although it was possible to use catalogues, with the birth of the Internet, a new method, namely online shopping, has become possible and is becoming more and more widespread. The growth of the Internet has increased the popularity of online shopping and it (online shopping) is the fourth most popular Internet activity, following e-mail, the use of instant messaging and web browsing (Ariff, et al., 2017). Nowadays, online shopping holds the attention of the retail market as millions of people shop online (Sivanesan et al., 2017).
The developments in Internet technology allow for the expansion of shopping options beyond traditional methods that may be more time consuming (Akinbode et.at., 2016). Issues with having to physically gather information with traditional shopping methods are alleviated, and shoppers are better able to efficiently use their time (Ekwueme and Akagwu, 2017).

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Shoppers' decision making is considerably influenced by the speed and ease with which they can access retail outlets. Several shoppers make use of the Internet in order to simplify their buying decision making (Beauchamp and Ponder, 2010). When engaging in shopping activities, shoppers spend time and effort so as to complete multiple tasks and given that today's shopper is more time-sensitive and influenced than ever, it is fit to consider the benefits of providing online shopping convenience. Online convenience is one of the main promoters of shopper's predisposition to adopt online shopping (Jiang, Yang and Jun, 2013). It is argued that the importance that shoppers placed on convenience prompts retailers to redesign store operating systems and emphasize the efficiency of the provided service (Seiders, Berry and Gresham, 2000). Online retailers are certainly able to supply more convenience as store location becomes irrelevant and shoppers may now shop from virtually any location, 24 hours a day, seven days a week (Beauchamp and Ponder, 2010). Therefore, companies must develop a more precise understanding of the impacts of online convenience.

The Internet has deeply transformed the industry practices of modern retailing and distribution management (Doherty and Ellis-Chadwick, 2006). The Internet explosion has shifted some of the traditional shopping to the online shopping environment. An increasing number and variety of firms and organizations are exploiting and creating business opportunities on and over the Internet (Jiang et al., 2013). As online shopping is a new medium, so is the consumer behavior in the field of online shopping; it is fairly diverse in nature as compared to traditional consumer behavior. With this emerging field of shopping, the interest of marketers is also the increase in studying what actually motivates shoppers to shop/buy online. Other than the factors which influence shoppers to buy online, online shoppers' demographics in terms of age, gender, income, occupation and education, as well as location of shoppers (urban and rural) and shopping experience are also important in order to define their shopping behavior (Qinghe, Wenyuan and Kaiming, 2014).

In view of the fact that shopping is part of everyday life and has significant implications for everybody's livelihood and welfare, this study investigates shoppers' perception of retail convenience in online shopping and it also examines the influence of demographic variables (gender, occupation, age, education, and income) on shoppers' perception of retail convenience in online shopping.

## 2. Literature Review

### 2.1 Online Shopping
Advances in information and communication technologies and the development of the Internet have changed business activities by allowing new ways of conducting business, and it referred to as online shopping (Zwass, 2003). Online shopping belongs to the general family of electronic commerce (Gabriel, Ogbuigwe and Ahiauzu, 2016). It involves the purchase of goods and services from a seller over the Internet. Online shopping is a process of electronically buying and selling (Laudon and Laudon, 2006) of goods and services by using with computerized business transactions through the use of Internet networks. This implies that online shopping is a process and it consists of different steps, just like in the physical method of shopping (Varma and Agarwal, 2014).

### 2.2 Dimensions of Retail Convenience in Online Shopping
The concept of convenience was proposed by Copeland (1923) in marketing literature. He classifies the consumer products into convenience goods, shopping goods, and specialty goods. Convenience is the ability to reduce shoppers' non-monetary costs, namely time,

energy and effort, when purchasing or consuming goods and services (Berry, Seiders and Grewal, 2002; Seiders et al., 2007; Farquhar and Rowley, 2009).

To better understand the concept, researchers in this field have distinguished between different types of convenience. The two types of convenience are service convenience (Berry et al., 2002) and retail convenience (Seiders et al., 2000). Service convenience is defined (Berry et al., 2002) as consumers' time and effort perceptions related to buying or using a service. On the other hand, retail convenience is defined as shoppers' time and effort costs associated with shopping in a retail environment. Four dimensions of convenience applicable to retailers are identified in specialty literature (Seiders et al., 2000). These dimensions are: access convenience, search convenience, possession convenience and transaction convenience. They are explained below.

### Access Convenience

Access convenience is defined as the "speed and ease with which shoppers can reach a retailer" (Seiders et al., 2000: 81). It encompasses the perceived time and effort necessary to initiate service delivery, that is, the actions required to request services and to receive them (Changa and Polonsky, 2012). This access may occur in person, over the phone, through a computer, or in other means as the case may be.

### Search Convenience

Search convenience is the speed and ease with which shoppers identify and select goods and services they desire to buy (Seiders et al., 2000), and comprises effective communicating systems with shoppers, store design and arrangement, product demonstrations, store signage, and professional as well as knowledgeable salespeople.

### Transaction Convenience

Transaction convenience is the "speed and ease with which shoppers can effect or amend transactions" (Seiders et al., 2000: 86). Traditional stores and online stores with fast checkouts and easy or liberal return policies score high in transaction convenience.

### Possession Convenience

Possession convenience is the speed and ease with which shoppers can obtain the desired goods and services (Seiders et al., 2000). The main reason for choosing traditional stores over online stores is the ability to actually take immediate possession or delivery of the products (Alba et al.; Rohm and Swaminathan, 2004).

### The Research Hypotheses

The research hypotheses tested in this study are as follows:

$H_{01}$:  There is no significant difference between male and female online shoppers' perception with respect to access, search, transaction and possession convenience

$H_{02}$:  There is no significant relationship between respondents' demographics (gender, age, education, occupation and income) and shoppers' perceptions of retail convenience in online shopping.

### 3. Methodology

This paper focuses on shoppers' perception of retail convenience in online shopping. The focus was aimed at online stores. The population of the study therefore consists of the totality of shoppers who are at least 18 years of age and who use online shopping mode in Benin City, Edo state. The estimated population of Benin City which is above the age of 18 is 1,627,300 (National Population Commission, 2016).

The sample size of the study was determined by using Yamane's formula, which is the application of normal approximation with 95% confidence level and 5% error tolerance. The formula is given as:

$$\text{n} = \frac{N}{1 + N(e^2)}$$

Where: n = sample size; N= population=1,627,300; e = level of significance = 0.05

$$\text{n} = \frac{N}{1+N(e^2)} = \quad \text{n} = \frac{1,627,300}{1+1,627,300(0.05^2)} = 399.901 \simeq 400$$

Though the calculated sample size is 400, a total of 500 questionnaires were administered in anticipation of possible invalid or improper completion by respondents.

The sampling technique adopted in this study is a combination of simple random sampling, systematic sampling and convenience sampling. First, the official Independent National Electoral Commission wards adopted during election was the initial sampling unit. In this connection the official 2018 list of wards in Benin City was used. This list of wards was obtained from INEC office in Benin City. Of the 25 wards in Benin City, ten wards were randomly selected. The second stage of the sampling process was the selection of houses using systematic sampling. The third was a convenience sampling of individual respondents from the houses selected in the second sampling stage. A questionnaire was administered in every fifth house along each street in the selected areas on the first cooperating adult encounter in each house. A situation whereby the first adult encounter refuses to cooperate or has no knowledge of online shopping; it was administered on the next willing and available adult in the same premises.

Simple random sampling procedure was applied to select 10 of 25 wards structured by the Independent National Electoral Commission in 2018. This was done to ensure that there was adequate representation of online buyers from all the wards in Benin City. Following, a form of systematic sampling technique was employed to sample every first cooperating adult respondent in every fifth house on the street in the selected area. In absence of a suitable respondent, the next house was sampled as the fifth house up until the expected 50 respondents were surveyed.

The instrument that was used for data collection in this paper is a structured questionnaire. The 20─item questionnaire was divided into two parts. The first part captured the respondents' selected demographic and socio-economic characteristics, which include: gender, occupation, age, educational qualification and income. The second part of the questionnaire contained items measuring online shopping convenience. Hypotheses were tested using T-test and Analysis of Variance (ANOVA). The Statistical Package for the Social Sciences (SPSS 20.0) was used for all the analyses. All tests were carried out at the 5% level of statistical significance.

## 4. Data Analysis and Results
### Shoppers' Perception of Retail Convenience in Online Shopping

Shoppers' perception of retail convenience in online shopping was measured using the following dimensions: access, search, transaction and possession convenience. The perception index (mean score) for each of the variables presented in Table 1 was computed on a five-point scale ranging from strongly agree (5), agree (4) unsure (3), disagree (2) to strongly disagree (1). The higher the mean scores, the more positive the shoppers' perception of shopping convenience and vice versa. A score of five (5) indicates very positive perception by shoppers while a score of one (1) represents the lowest or most unfavorable perception by shoppers. The reliability values regarding access, search, transaction and possession are 0.765, 0.684, 0.782 and 0.805, respectively, by using Cronbach Alpha method.

The five (5) variables that make up access convenience were positively perceived by shoppers with a mean index of 4.20. On the average, the most positively perceived variables are "the opening hour of the shops is convenient" (4.46), followed by "the stores are not

crowded" (4.22), following is "it is easy to access the products you need (4.16), followed by "a wide variety of products that I need are available in these shops" (4.15) and lastly, "it is easy to locate the shops" (4.03).

Search convenience consists of four (4) variables. The average scores show that all four variables were positively perceived. The most positively perceived variable was "products are well-organized or arranged" (4.34), followed by "product sorting and classification is easy (4.31), next is "it is easy to find the products that you need (4.28) and lastly, "it is easy to get the information I need to make my purchase decision in the store" (4.15).

Transaction has four (4) variables. All variables were positively perceived by the shoppers except for "it is easy to return defective products after purchase to the store" with the lowest mean score of (2.91). The most positively perceived variables were "the checkout process is fast" (3.98), followed by "it is easy for me to conclude my purchase" (3.89) and lastly, "I do not have to make much of an effort to pay for the product" (3.86).

The next dimension was possession convenience and it has only two (2) variables. "I am satisfied with the attitude and performance of deliverymen" was more positively perceived with a mean score of (3.86) than "I get the product immediately after the payment" with a lower mean score of (2.66).

The results indicate that search convenience was perceived to be better than the other dimensions of retail convenience because the overall mean score for the different dimensions show that search convenience is perceived highest by shoppers with overall mean score of (4.27), followed by access convenience (4.20), transaction (3.66), and lastly, possession convenience (3.26).

**Table 1:** Shoppers' Perception of Retail Convenience in Online Shopping

| S/N | Dimensions of Retail Convenience in Online Shopping | Mean |
|---|---|---|
| | **Access Convenience (α= 0.765)** | |
| 1 | The opening hour of the shops is convenient. | 4.46 |
| 2 | It is easy to access the products you need. | 4.16 |
| 3 | A wide variety of products that I need are available in these shops. | 4.15 |
| 4 | The stores are not crowded. | 4.22 |
| 5 | It is easy to locate the shops. | 4.03 |
| | **Overall mean for access convenience** | **4.20** |
| | **Search Convenience (α= 0.684)** | |
| 6 | Products are well-organized or arranged. | 4.34 |
| 7 | It is easy to find the products that you need. | 4.28 |
| 8 | Product sorting and classification is easy. | 4.31 |
| 9 | It is easy to get the information I need to make my purchase decision in the store. | 4.15 |
| | **Overall mean for search convenience** | **4.27** |
| | **Transaction Convenience (α= 0.782)** | |
| 10 | The checkout process is fast. | 3.98 |
| 11 | It is easy to return defective products after purchase to the store. | 2.91 |
| 12 | It is easy for me to conclude my purchase. | 3.89 |
| 13 | I do not have to make much of an effort to pay for the product | 3.86 |
| | **Overall mean for transaction convenience** | **3.66** |
| | **Possession Convenience (α= 0.805)** | |
| 14 | I get the product immediately after the payment | 2.66 |

| S/N | Dimensions of Retail Convenience in Online Shopping | Mean |
|---|---|---|
| 15 | I am satisfied with the attitude and performance of deliverymen. | 3.86 |
| | **Overall mean for possession convenience** | **3.26** |
| | **Shoppers Perception of Retail Convenience** | **3.85** |

Source*:* Authors' fieldwork

**Demographic Influences on Shoppers' Perception of Retail Convenience in Online Shopping**

The demographic influences of respondents, such as gender, sex, educational qualification, occupation and income in regards to perception of retail convenience on shopping are presented in Table 2, 3, 4, 5 and 6.

**Relationship between Gender and Shoppers' Perception of Retail Convenience in Online Shopping**

The results presented in Table 2 show that gender {t=1.564; p=0.119} does not significantly influence shoppers' perception of retail convenience at 5% level of significance. This means that the male respondents are not significantly different from their counterpart in their perception of retail convenience in online shopping.

**Table 2:** Relationship between Gender and Shoppers' Perception of Retail Convenience in Online Shopping

| Dimension of Retail Convenience in Online Shopping | Male | Female | T | P |
|---|---|---|---|---|
| Access Convenience | 4.237 | 4.159 | | |
| Search Convenience | 4.283 | 4.187 | | |
| Transaction Convenience | 3.707 | 3.551 | | |
| possession Convenience | 3.240 | 3.257 | | |
| **Overall Mean** | **3.867** | **3.789** | **1.564** | **0.119** |

Source: Authors' field work

**Relationship between Age and Shoppers' Perception of Retail Convenience in Online Shopping**

The results show that there is no significant relationship between age and shoppers' perception of retail convenience. The F-value (0.685) and p-value (0.758) are strong evidences that age is not statistically significant at the 0.05 level of significance. This means that shoppers' perception of retail convenience in online shopping does not vary with age.

**Table 3:** Relationship between Age and Shoppers' Perception of Retail Convenience in Online Shopping

| Age Category | N | Shoppers' Mean Perceptions of Retail Convenience in Online Shopping |
|---|---|---|
| 18-24 | 280 | 3.836 |
| 25-31 | 69 | 3.875 |
| Above 31 | 71 | 3.776 |
| **Overall mean** | **420** | **3.833** |
| **F-statistics** | | **0.685** |
| **p-value** | | **0.758** |

Source: Authors' field work

**Relationship between Education and Shoppers' Perception of Retail Convenience in Online Shopping**

The results presented in Table 4 show the mean scores for the various education categories of shoppers. The results depict that there is no significant relationship between education and shoppers' perception of retail convenience. The F-value (1.801) and p-value (0.128) are strong indications that education does not influence shoppers' perception at the 0.05 level of significance. This means that the perception of online shopping of the more educated shoppers is not significantly different from that of their counterparts.

**Table 4:** Relationship between Education and Shoppers' Perception of Retail Convenience in Online Shopping

| Education | N | Shoppers' Mean Perceptions of Retail Convenience in Online Shopping |
|---|---|---|
| Primary | 5 | 4.003 |
| SSCE/WAEC or equivalent | 120 | 3.864 |
| OND/NCE or equivalent | 18 | 3.857 |
| B.Sc., B.A., HND or equivalent | 205 | 3.861 |
| Postgraduate Degree | 63 | 3.686 |
| **Overall mean** | **411** | **3.836** |
| **F-statistics** | | **1.801** |
| **p-value** | | **0.128** |

Source: Authors' field work.

**Relationship between Occupation and Shoppers' Perception of Retail Convenience in Online Shopping**

The results in Table 6 reveal that there is no significant relationship between occupation and shoppers' perception of retail convenience. The F-value (0.441) and p-value (0.779) are indications that occupation is not statistically significant at the 0.05 level of significance. This suggests that respondents' occupation does not affect their perception of online shopping.

**Table 5:** Relationship between Occupation and Shoppers' Perception of Retail Convenience in Online Shopping

| Occupation | N | Shoppers' Mean Perceptions of Retail Convenience in Online Shopping |
|---|---|---|
| Students | 299 | 3.849 |
| Self employed | 36 | 3.759 |
| Civil/public servant | 46 | 3.773 |
| Others | 28 | 3.859 |
| **Overall mean** | **409** | **3.833** |
| **F-statistics** | | **0.441** |
| **p-value** | | **0.779** |

Source: Authors' field work.

**Relationship between Income and Shoppers' Perception of Retail Convenience in Online Shopping**

The results in Table 6 reveal that there is no significant relationship between income and shoppers' perception of retail convenience. The F-value (1.563) and p-value (0.145) are strong evidences that income is not statistically significant at the 0.05 level of significance.

We can therefore conclude that respondents' income does not affect their perception of online shopping.

**Table 6:** Relationship between Income and Shoppers' Perception of Retail Convenience in Online Shopping

| Income Level | N | Shoppers' Mean Perceptions of Retail Convenience in Online Shopping |
|---|---|---|
| Below ₦50, 000 | 244 | 3.816 |
| ₦ 50,001- ₦100, 000 | 53 | 3.908 |
| ₦ 100,001- ₦150,000 | 33 | 3.599 |
| Above ₦150,000 | 31 | 3.979 |
| **Overall mean** | **361** | **3.823** |
| **F-statistics** | | **1.563** |
| **p-value** | | **0.145** |

Source: Author's field work

## 5. Discussion of Findings

The objective of this study was to examine shoppers' perception of retail convenience in online shopping. The result shows that the four dimensions of retail convenience were positively perceived by shoppers. This result confirms an earlier finding by Beauchamp and Ponder (2010) that online shopping is positively perceived by shoppers in the United State of America. They reported mean scores of 6.43, 6.11, 6.26 and 6.13 for access, search, transaction and possession convenience, respectively. Similarly, Jiang, Yang and Jun (2013) found that online shoppers have a favorable perception of online shopping in Hong Kong. This finding is also supported by the study conducted in South Africa by Mpinganjira (2015) who found that online shoppers have a favorable perception of search and possession convenience.

This study found that demographic variables (gender, age, education, occupation and income) do not have a significant relationship with shoppers' perception of retail convenience in online shopping. The implication of this finding is that the demographic variables do not play a significant role in explaining shoppers' perceptions concerning online shopping.

More specifically, gender had no significant relationship with perceptions concerning retail convenience in online shopping among shoppers in Benin City. Male and female shoppers perceive retail convenience in online shopping in the same way. The possible reason for this finding is because both male and females go through similar process of accessing, searching and purchasing goods. This study contradicts the findings of Slyke, Comunale and Belanger (2002), Rodgers and Harris (2003), Stafford, Stafford and Schkade (2004), Punj (2011); Richa (2012) and Lubis (2018); according to them, gender had a significant impact on shoppers' perceptions of retail convenience in online shopping.

This study found that age had no significant relationship with shoppers' perceptions of retail convenience in online shopping. In contrast, Lubis (2018) found that age had a significant relationship on shoppers' perceptions of retail convenience in online shopping. The finding from this study also contradicts previous findings by Punj (2011) and Richa (2012) that shoppers' demographic variables affect their shopping preferences.

More than three quarter of the shoppers surveyed in this study belong to the youthful age of between 18-31 years old. The youths appear to be more ardent in the use of ICT knowledge, which is very important in the adoption of online shopping. Given this background of the present study, it would not be surprising if education is less relevant in the perception.

This study has found that education had no significant relationship with shoppers' perceptions of retail convenience in online shopping. Possible explanation for the non-relevance of education in explaining shoppers' perception could be because of the increasing attention given to ICT education in both the Nigerian secondary and tertiary institutions. By contrast, Kwarteng and Pilik (2016) found that education had a significant relationship with shoppers' perceptions of retail convenience. Research findings have shown that online shoppers largely consist of people with higher level of education (Kehoe, Pitkow and Rogers, 1998; Hoffman, Kalsbeek and Novak, 1996). Similarly, Lubis (2018) found that education had a significant relationship with shoppers' perceptions of retail convenience in online shopping. Furthermore, the findings from this study also contradict previous findings by Punj (2011) and Richa (2012) that shoppers' demographic variables affect their shopping preferences.

Lastly, on the influence of demographic variables, this study found that income had no significant relationship with shoppers' perceptions of retail convenience in online shopping. This is not consistent with earlier reports by Hoffman et al. (1996) and Kehoe et al. (1998) that income had a significant relationship with shoppers' perceptions of retail convenience in online shopping.

## 6. Conclusion

Shoppers are more time constarined than ever before and the development of retail perceived convenience in online business is therefore an important marketing strategy. The study has attempted to investigate shoppers' perceptions of retail convenience in online shopping in Benin City. The results indicate that search convenience was perceived to be better than the other dimensions of retail convenience because the overall mean score for the different dimensions shows that search convenience is perceived highest by shoppers. However, there is still room for improvement in adding value to the retail experience of shoppers on the four (4) dimensions of retail convenience. The outcome of the demographic influences indicates that there is no significant relationship with shoppers' perceptions of retail convenience in online shopping. Since demographic variables do not explain variation in shoppers' perception of retail convenience in online shopping, there may be no need for segmentation of the market for online business. Future researchers may conduct further investigation into the influences of other variable such as psychological and psychographic variables.

## 7. Recommendations

It is recommended that online retailers should emphasize retail convenience, including access, search, transaction and possession convenience, as these constructs are crucial for developing retail convenience and serve as a source for competitive advantages. We also recommend that online retailers/vendors should improve on their delivery strategies to ensure prompt delivery of products to shoppers in order to better satisfy their needs.

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## SHARING ECONOMY AND ITS POPULARITY IN HUNGARY AND ROMANIA

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**Abstract:** *The purpose of this study aims at introducing the sharing economy, one of the most popular economic mechanisms at present, with special regard to its varieties and definitions. The explosion of the sharing economy into the tertiary sector has changed the balance of powers and paved the way for increasing markets based on a new footing. The emergence of trading platforms has created a wide variety of virtual marketplaces, where consumers and suppliers contact each other directly according to their interests, and may even form groups. The review of the relevant literature can be considered rather inclusive regarding the terms and definitions; therefore, the authors find the separation of suppliers essential, according to whether they are private individuals or entrepreneurs. The literature distinguishes three large groups of the sharing economy: product-service systems, redistribution markets and collaborative lifestyle markets, followed by further sub-categories. This paper focuses on the economic markets of the Hungarian and Romanian sharing economy from supply and demand-side aspects to obtain a clear picture of the sharing economy's growing range and forms. The paper includes both primary and secondary research, literary sources and the open-access database of the European Commission (2018): Flash Eurobarometer 467 (The Use of the Collaborative Economy), which is analyzed by using the SPSS 24 software. Sharing economies have been studied from both consumer and service provider perspectives. The survey on the percentage of consumers and suppliers, the advantages and disadvantages, the reasons for not using services offered as such, and the motives behind the participation of suppliers on sharing economy platforms was carried out in Hungary and Romania and the EU-28 member states. As regards to the advantages, consumers praise easy access to a given service, and then the sequence of evaluated advantages shows a difference between Romanian and Hungarian users. The estimation of sharing economy services shows a more positive picture among Hungarian residents, whereas Romanian users and service providers as a whole correspond to the EU 28 average. Experience has shown that just like in the 28 members of the EU, the most popular sharing economy platforms are accommodation and ridesharing services in Romania and Hungary. To the best of our knowledge, the analysis of this topic has not been carried out.*

**Keywords:** sharing economy, collaborative consumption, spreading of sharing economy in Romania and Hungary, SPSS analysis**.**

**JEL classification***:* J23, M13.

## 1. Introduction
Sharing economy or peer-to-peer based sharing refers to an economic and social system where human and physical resources are shared. It may imply the joint development,

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production, trade, distribution and consumption of goods and services by organizations and individuals alike. Sharing economy is a conceptual phrase, which appeared in the *Oxford* English Dictionaries in 2015, along with Brexit, Dark Web, a crying and laughing emoticon or ad blocker (Steinmetz, 2015)**.** The leading examples of sharing economy or peer-to-peer (P2P) economy are Airbnb and Uber, based on a new business management philosophy. In less than one decade they have grown to billions of dollars in value, such as Airbnb, which has no real estate, or Uber, which is engaged in passenger transport but which does not have a car fleet. The key to their success lies in the fact that they have laid new foundations for accessing the service sector, linked it with the digital world, bringing consumers within reach (a mobile phone from them) (Smith, 2019). Then the traditional access systems appeared redundant and clumsy, so their avoidance proved to be a blessing rather than a compulsion. They were groundbreaking in how they used the available technology and paid heed to the hidden opportunities of peer-to-peer activities.

Both startups launched their activities in troubled times when the recession of 2008 broke out, and they were regarded as being among the biggest Unicorn startups at the beginning of 2019. Airbnb joined the Unicorn club in the summer of 2011, its current company value amounts to 29 billion dollars (May 2019), and it has the prominent 5th place on the list of more than 300 companies (CBInsights, 2019). Uber, the other spokesperson of sharing economy belonged to the members of unicorns in 2013-2019 with its company value of 72 billion dollars (2nd place), but the Initial Public Offering ended on 10 May 2019 and share trading started (Feiner, 2019).

The two sharing economy companies mentioned above disrupt the traditional business models and convulse the regulatory system (Shueh, 2014). Airbnb, the online marketplace for arranging and offering accommodation, has challenged the hotel industry, and Uber causes difficult times for the taxi companies. Airbnb has eroded and wiped out the artificially created and maintained boundary between the short-term rental of properties - services provided by hotels and long-term "apartment" accommodations. The emergence of Uber has astonished the taxi companies since the beginning, and it is relentlessly debated every single day. The Uber application, which connects passengers with drivers, is essentially and simply a taxi-service, although only at first sight. The global, app-based transport network ridesharing service has introduced several innovations in passenger transport, establishing a direct connection between the carrier and the passenger; accurate and true data are available about the driver, the vehicle can be continuously monitored right from the order of the travel, the arrival time can be precisely calculated, the fare is known in advance, and is automatically withdrawn from the bank card registered in the internal Uber pay system when the travel gets finished.

## 2.  Material and methods

The paper consists of both primary and secondary approaches to the topic.  The research questions are centered on the clarification of the notion of sharing economy or peer-to-peer business. The article is concentrated to clarify what unambiguous categories and sub-categories of the sharing economy can or do exist. Based on process of specialty literature analysis and the author's own analysis, the components of the system have been explored, and then determined with definitions that can make a clear distinction among sharing-economy businesses.

Based on this, the authors conducted an in-depth analysis of the EU, Hungary and Romania by using primary data from available databases. Empirical research methods were carried out in 2018 upon the proposal of the European Commission about the use of sharing economy among consumers and suppliers. As the SPSS database of the survey was

accessible, it allowed country evaluations to analyze the widespread of this new business model in Romania and Hungary.

Answers to the research questions were developed by using the following methodology:

- The use of secondary literary sources enabled the introduction of sharing economy areas from various aspects.
- The authors obtained the open-access database *European Commission, Brussels (2018): Flash Eurobarometer 467 (The Use of the Collaborative Economy) ZA6937 Data file Version 1.0.0* from the institute performing the survey and used it as the secondary research source (European Commission, 2018), where 26.544 survey basic and derivate data were analyzed and processed with SPSS 24 software. The examination was carried out from two perspectives. On one hand, the consumer side of "sharing/collaborative economy" was analyzed, and on the other hand, its supply side/service provider side. Statistical calculations were used to test the correlations. The study used simple analyses/descriptive statistical methods, frequency analyses, cross-table analyses and Chi-square tests. The researchers performed in-depth investigations on Romania and Hungary, revealed the key correlations between the consumer and demand sides. The number of participants was 1.001 in Hungary and 1.006 in Romania.

## 3. Results and discussion

### 3.1. Definitions

Botsman and Rogers (2010a) prefer the use term of *collaborative economy* rather than *sharing economy.* They propose that hyper-consumption, induced on the provision of loans, typical of the 20th Century, will be replaced by collaborative consumption, and its key drivers will be reputation and prestige. The main features of hyper-consumption were advertisements, and they were characteristically based on ownership. In contrast, collaborative consumption will be typically community-focused with a sense of togetherness and belonging to the place where we live and share the rights of use (Botsman and Rogers, 2010a)**.** Similarly, Botsman and Rogers (2010b) split up and classified sharing economy enterprises into various types into the following: product service systems, redistribution markets and collaborative lifestyle markets. Enterprises operating in product-service systems sell goods as services rather than their products (e.g. p2p car sharing, bike sharing, electric roller/moped sharing, etc.). They use redistribution markets for selling their underutilized assets (new or used), thus ensuring that the new owner makes better use of these underutilized assets than the previous one (e.g. p2p flea market/marketplace). Collaborative markets consist of people, interest groups who share common needs and interests or exchange tangible or intangible assets. This can include sharing working areas, car parks, accommodations, various skills, data/information, money or time (Botsman and Rogers, 2010b).

Sundarajan (2015) and Martin et al. (2015) underline the significance of sharing on promising, cutting-edge p2p marketplaces encouraging users to contact each other for the pursuit of economic activities. Sundarajan (2015) and Stephany (2015) analyzed the shift in the consumption model, from ownership towards sharing, softening the necessity of the ownership of assets.

"The expression sharing economy is commonly used to indicate a wide range of digital commercial or non-profit platforms facilitating exchanges amongst a variety of players through a variety of interaction modalities (P2P, peer-to-business (P2B), business-to-peer (B2P), and business-to business (B2B)), that all broadly enable consumption or productive activities leveraging capital assets (money, real estate property, equipment, cars, etc.) goods, skills, or just time" (Codagnone, et al., 2016: 22.p.).

The European Commission defined collaborative economy as a business models where activities are facilitated by online platforms that create an open marketplace for the temporary usage of goods or services, often provided by individuals. The collaborative economy involves three categories of actors: users, providers and intermediary platforms, which facilitate transactions between them (European Commission, 2016).

As Schor (2014) highlights in his thesis, an activity can be considered sharing if the platform is declaring itself and the press defines who is in and who is out. Everybody can decide whether their activities are covered by the sharing economy collective term. Sharing economy activities fall into four broad categories: recirculation of goods, increased utilization of durable assets, exchange of services, and sharing of productive assets.

The collaborative economy offers new opportunities for sustainability through efficiency, consistency and sufficiency (Heinrichs, 2013).

Szegedi (2019) regards that sharing-based activities have four key features:
- the activity is webpage-, application- or online platform-based;
- allows for a P2P transaction;
- ensures temporary access to assets, services without transfer of ownership. This feature excludes the sale of second-hand goods and online platform-based transactions from the umbrella term of sharing economy.
- Unexploited assets, services, skills or resources will be employed.

The collaborative economy is an economic trend where partners meet on an online platform with a view to providing others with their temporally unused or unexploited assets, skills and capacities on a temporary basis. The activity is basically additional income, in order to generate additional earnings for the party providing its assets on the sharing platform. The online marketplace is accessible via a mobile application, the vehicle between the two parties, where they can obtain information on each other, primarily about the person of sellers, their reliability, the quality and precision of their services. The relevant literature is highly inclusive, everybody can be included under the generic term of sharing economy if individuals identify themselves as the players of this economy and it is accepted by the general public. Our view is that service provider groups must be separated and a boundary must be set between the concepts of sharing economy and collaborative consumption. In our opinion, a sharing economy can only be identified in P2P and P2B constructions, where the transaction is always started by an individual. The key element is personal and social motivation, i.e. a group is organized around something with the effective assistance of information technology, and operates locally and globally alike. Local communities can be physically created, the members can have meetings, discussions and global communities can contact and make transactions through the Internet in the virtual space. Collaborative consumption refers to swaps among B2P and B2B players similarly via digital platforms, but in this case, there is no personal motivation as they are backed by complex organizations. Sustainability and environmental protection issues come to the forefront here, although it must be borne in mind that the primary objective of an economic enterprise is to increase the owner's assets by satisfying solvent demand. Therefore, our research has complemented the baseline (Botsman and Rogers, 2010a) classification with the following: in the event that the person who starts the transaction is a private individual (rent, sale, sharing, finance), we can talk about the sharing economy, and when an enterprise rents out, sells, shares or co-finances assets, it can be termed collaborative consumption.

Whereas sharing economy transactions identify activities that inspire individuals to create independent businesses, sharing their assets via the online platform, enterprises operating under the collaborative consumption principle offer alternatives for companies by having the traditional business model together with the following: increasing efficiency (lower input, higher output), sustainability, environmental protection, optimal use/exploitation and permanent availability.

### 3.2. Sharing economy and its popularity in Hungary and Romania
### The socio-demographic profile of participants

The study surveyed 26.544 participants with questionnaires in 2018 in the EU-28-member states. 70% of the Hungarian respondents revealed that they were not users or service providers of sharing economy platforms, the corresponding percent in Romania is 76%. Every second person surveyed was other than employed, whereas the majority of them were employed. Upon closer examination, the classification can be demonstrated as follows:

### Hungary

The majority of sharing platform users (solely users) are employees (intellectuals) (16,7%), office workers (7,7%), sellers or nurses (12,9%) or pensioners (27%). Those who are solely service providers, fall into the same categories, but students and homemakers emerge and stand at 12,5% in addition to the large category of other-than-employed and pensioners. 10% of users and service providers in Hungary do *intellectuals' jobs,* 18,3% are office workers, 23,3% sellers, nurses or employees, 6,7% homemakers and 10% pensioners.
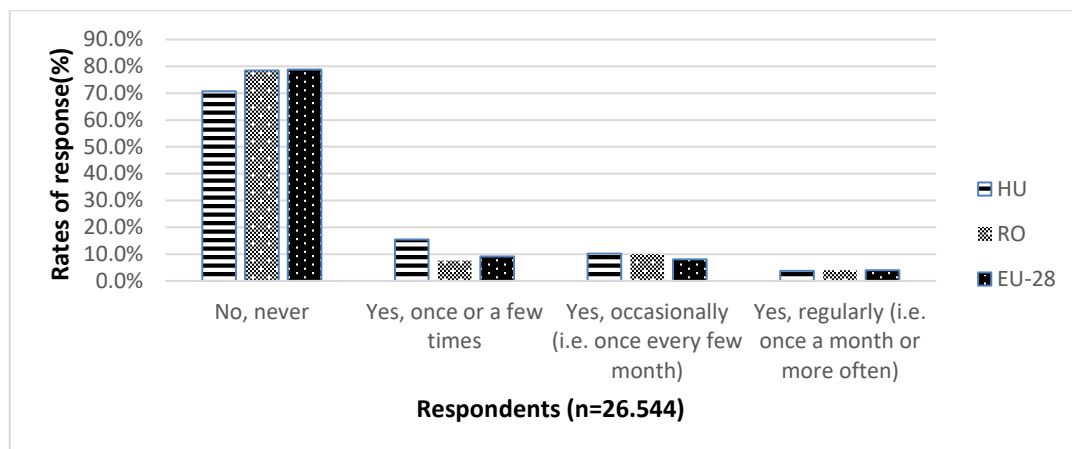
### Romania

The majority of 'exclusive users do intellectuals' jobs (23,3%), 8,6% are in the middle management, 17,2 % in other positions, 8% students in full-time education and 14,7% pensioners. 13,6% of service providers are intellectuals or have other jobs, whereas 22,7% are pensioners. The percentage of service providers and users is the highest among intellectuals (17,3%), middle-managers (11,5%) and civil servants (11,5%), but it is worth mentioning that the percentages of other employees, students and pensioners stand at 7, 7% for each of them. The most active sharing economy players in Hungary live in the middle region of the country; their percentage is 37,8%. Every second respondent acting as a service provider via collaborative platforms lives in this region and the ratio of players from both categories is 45%. In Romania, the capital region is the most active with 27,6% percentage of exclusive users, 32% of service providers and 19% of both users and service providers. The other active region of the sharing economy in Romania is the North-Western NUTS2 region, where the percentage of users is 14%, that of service providers is 22,7%, whereas users and service providers together represent 21%. The proportion (18,2%) of service providers is rather high in the South-Eastern region as well.

### The consumer side of sharing economy services

The average user rate of services provided by collaborative platforms (Figure 1) is 29,3% in Hungary, whereas Romania it is somewhat behind this rate with 21, 5%, i.e. slightly over one-fifth of respondents. The percentage of respondents who claimed that they use sharing-based economic services, either occasionally or regularly, was 36% higher in Hungary than in Romania or compared to the average value of the EU-28 countries. The rate of once or a few times users is exceptionally high (15%) in Hungary, double the percentage of Romania, and 70% higher than in the EU-28 average. Implicitly, the rate of those unaware of the services of the collaborative economy is also lower (70%) in Hungary than in Romania or the approximately 80% EU-28 average.

**Figure 1:** Proportion of users of services offered via collaborative platforms
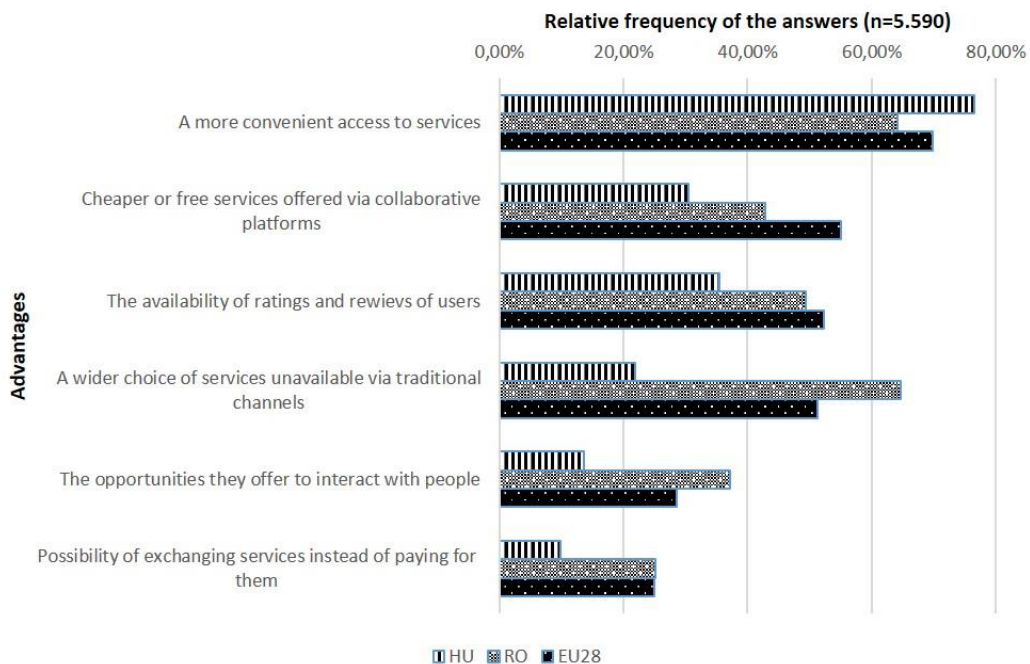Source: Authors' own editing

The survey reveals (Figure 2) that ridesharing platforms enjoy widespread popularity in Romania, every second collaborative platform user has already made use of this possibility, whereas this rate is much lower in Hungary, merely one fifth (17, 4%). In the case of shared accommodation platforms, more than 60% of Hungarian users have already used such kind of services, exceeding the EU-28 average by about 10%. The popularity of collaborative financing services stands at one third compared to the EU-28 average, i.e. merely two people of a hundred both in Hungary and in Romania.
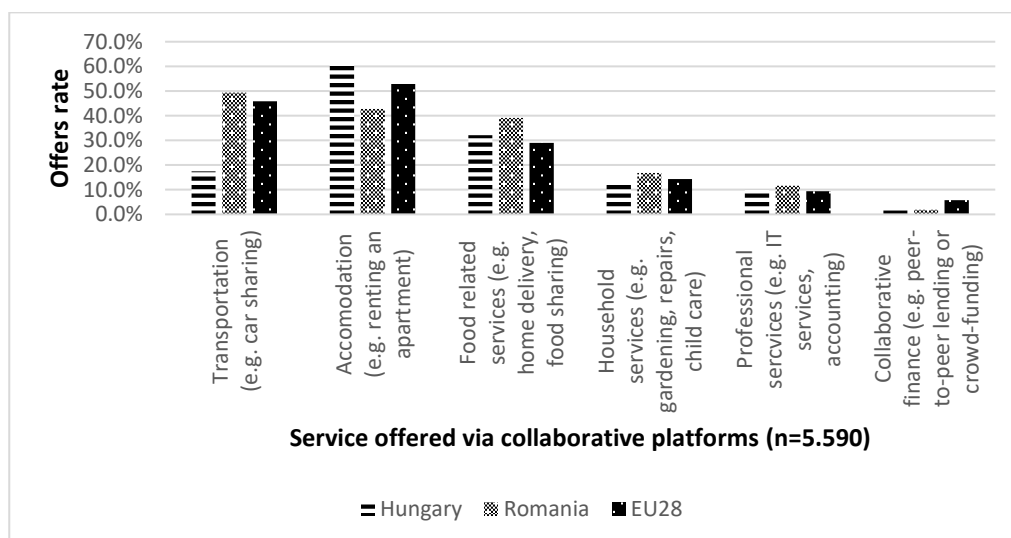


**Figure 2:** HU-RO-EU-28: Popularity of provided services offered via collaborative platforms
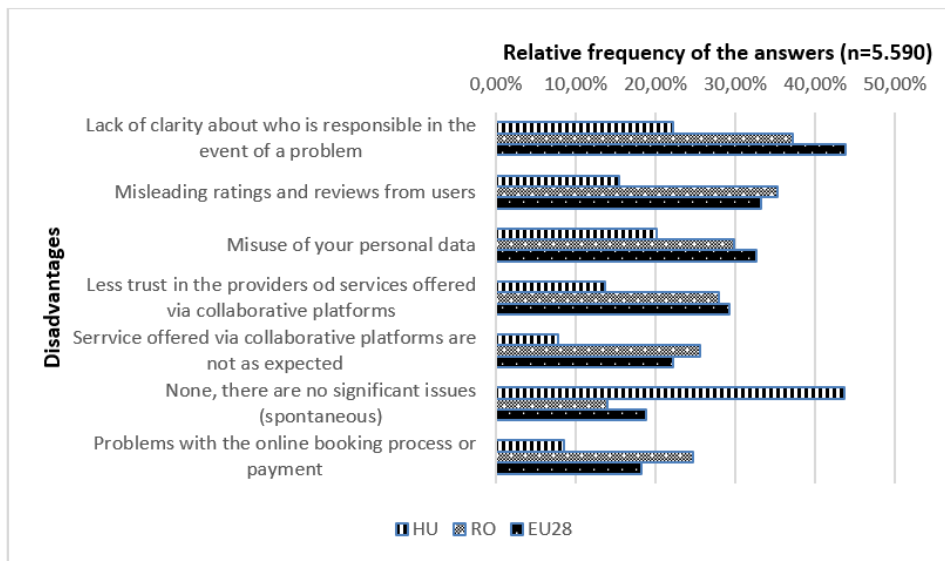Source: Authors' own editing

The majority of respondents identified the easy accessibility of services via the online sharing platform as the most important character (Figure 3). More than three-quarters of Hungarian users highlight the significance of the above advantage. The low/lower cost or free-of-charge services show sharp discrepancies: while 55% of EU-28 respondents emphasized this benefit, this rate stands well below 43% in Romania and 30% in Hungary. The relevance of user

assessments is much lower (35%) in Hungary as the average EU-28 percentage (52%), and about 50% of Romanian users consider this online platform-based benefit essential and significant. In Romania, 65% of the collaborative economy players state that in this way they can obtain access to online platform-based services that would be inaccessible through traditional trade channels. Slightly more than one-fifth of Hungarian users-customers regard this feature of the sharing economy as an advantage.



**Figure 3:** HU-RO-EU-28: Advantages of services offered via collaborative platforms
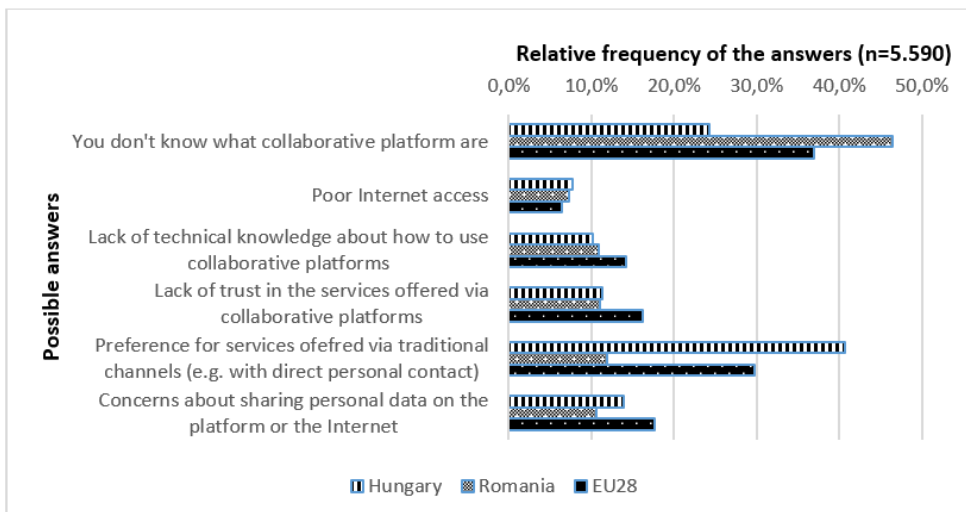Source: Authors' own editing

The majority, almost 50% of Hungarian users-customers, have revealed that they were unable to identify the disadvantages of collaborative platforms at all, and they can find immediate solutions if any sharing economy-related problems surface. Merely every fifth person considers it as a disadvantage, as opposed to the 44% in the EU-28. As a whole, Hungarian users view this novel economic mechanism very positively, the weaknesses they listed are considered less relevant and upsetting than in Romania or in the EU-28. The assessment of Romanian users aligns considerably closer with that of European users; against this background, more than 37% claimed it was unclear who would be liable in the event of problems when making use of the service. About the same percentage (>35%) doubt that assessments by customers/users reflect a clear reality, and three out of ten thinks that their personal data might be abused by the online platform operators. One-fourth of sharing economy users in Romania notes that they have faced problems over the online booking and check-out process. This rate is somewhat higher than the 18% in the EU-28.

**Figure 4:** HU-RO-EU-28: Disadvantages of services offered via collaborative platforms
Source: Authors' own editing

More than 90% of users in Hungary and Romania would recommend the online platform-based services; every second person answers with a decisive yes. On the other side, the percentage of answers in the negative range is below 1% in Hungary, whereas it is about 3% in Romania.

The main reason to avoid the use of sharing economy platforms in the EU-28 is the lack of knowledge of them (Figure 5). Merely one-fourth of the subjects who took the test chose this questionnaire option in Hungary, whereas every second person in Romania did. 40% of Hungarians argue that they would rather place their trust in traditional trade channels and merely one person in 10 shares this view in Romania. Romanian, Hungarian and the average of EU-28 users are moderately afraid that their personal data will be misused.



**Figure 5:** HU-RO-EU-28: Reasons for not using services offered via collaborative platforms
Source: Authors' own editing

**The supply side of sharing economy services**
More than 90% of EU-28 survey participants have never provided services via collaborative platforms, and this percentage can be seen among Hungarian and Romanian respondents with extremely low variance level (RO 92, 6%, HU 93, 2%). The rate of services providers (once or a few times, occasional and regular) stands at 7.4%, 2 percentage points above the EU-28 average. 6,8% of Hungarian respondents have already offered services via sharing platforms.

In Romania, the rate of ridesharing and household service providers is the highest among the players, with approximately 30% (Figure 6). The rate of Hungarian ridesharing service providers is well below (13%) this value, although accommodation and professional services are popular. 12% of participants of sharing-based finance services in Romania have already provided such kind of services, and this percentage is twice the average of the EU-28, approximately ten times higher than the supply ratio in Hungary.
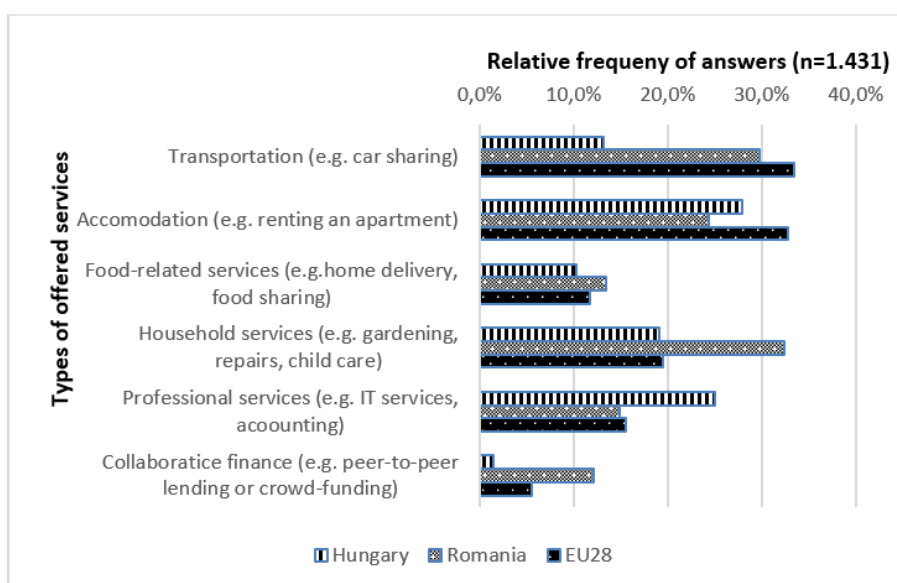


**Figure 6:** HU-RO-EU-28: The most commonly offered services via collaborative platforms
Source: Authors' own editing

Service providers via sharing economy platforms the following issues motivating them to take part in this economic model (Figure 7):

1.     Hungarian users mostly prefer easy access to consumers and the simplicity of getting into contact with them. It is followed by additional income resource opportunities and maintenance reasons.

2.     In contrast, Romanian service providers identify flexible working schedules as the most significant motivation (50%), followed by additional income resource opportunities and easy access to consumers. They claim that this method enables them to carry out business activities easily (provide services) and contacting customers in a simple way is also a considerable aspect. More than 16% regard this opportunity to entrepreneurship as their main revenue source.
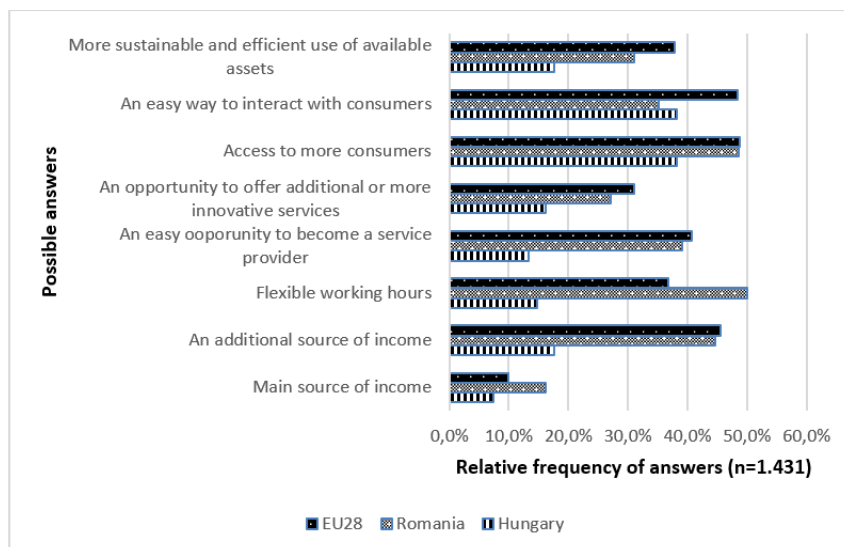
**Figure 7:** HU-RO-EU-28: Reasons for offering services via collaborative platforms
Source: Authors' own editing

## 4. Conclusions

According to the authors, sharing economy and collaborative consumption can be described as a demand-driven business model based on the Internet platform, which is defines as follows: sharing economy is a platform-based market where the service provider is a peer and can operate in a redistribution market system or product service system. Transactions can occur in both P2P and P2B configurations. Collaborative consumption is also a demand driven business model, in which the service provider is a business and can operate in the same markets as well. Transactions can occur in B2P and B2B configurations. Services provided by the sharing economy platforms are more popular in Hungary than in Romania. The most popular ones, similarly to the EU-28 average, are ride-sharing and accommodation services, although, after the banning of Uber in Hungary in 2016, the popularity of ridesharing experienced significant reductions. Currently there are no sanctions imposed on the mediation of ridesharing services via online platforms in Romania, making them the most popular service providers. As for accommodation sharing platforms, Hungary tops the list (> 60%), and Romania is below the EU-28 average with 43%.

Romanian and Hungarian users both believe that the main benefit of the services offered in this way is the easy access, but afterwards opinions differ. 65% of Romanian users reveal that sharing economy platforms facilitate access to services that are unavailable via the traditional channels, while Hungarian users claim that the second most desired attribute on the list refers to accessibility to assessments and opinions. In both countries, the favorable price or free-of-charge access ranks third on the list.

With regard to the disadvantages listed in questionnaire, we found that Romanian residents - regarding the relative frequency of their responses - are concerned about sharing economy platforms. Conversely, Hungarian users adopt a positive opinion on the new trend (economic mechanism) and regard its weaknesses less relevant.

More than 90% of users in the two countries agree that sharing economy platforms should be tested and used.

The proportion of service providers in Romania and Hungary are higher than in the EU-28 countries. In Romania, ridesharing and household services are the most popular, although our research could not reveal platforms advertising household services (gardening, repair

work, childcare). It is only presumable that these services are advertised in various Facebook groups or via online marketplaces. In Hungary, the highest proportion of service providers are engaged in accommodation and professional services (informatics, accountancy). Hungarian and Romanian service providers are involved in the sharing economy for different reasons. Hungarian service providers prioritize: access to consumers, simple contact with them, opportunities for additional income and sustainability. Romanian providers highlight: flexible working hours, additional source of income and easy access to more consumers.

Although the study database was representative, the conclusions drawn can be only considered as fact-finding for the year 2018.  Therefore, further in-depth analyses are to be carried out to get a better understanding of the sharing economy and to follow up its spread.

## Acknowledgements

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# KNOWLEDGE INTENSIVE BUSINESS SERVICES AND THEIR ECONOMIC ROLE IN EUROPEAN UNION: A BRIEF ANALYSIS[*]

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**Abstract:** *The decisive role of the knowledge-based economy, and the importance of the ventures fostering the use of innovation and incorporating knowledge, high technology and creativity are nowadays worldwide recognised, even more so considering that the EU is in a permanent search for innovation as a source of and for competitiveness. Knowledge Intensive Business Services (KIBS) are expected to play a key role in the knowledge-based economy as a source of innovation and knowledge in production, dynamic hubs in knowledge-related networks, or intermediaries of innovation between the manufacturing sector and suppliers, partners and final consumers. Within this context, in the present paper we aim to investigate the complex relation between the knowledge intensive business services (KIBS) and the imperative of fostering the economic activity, both of the entrepreneurial dynamics and their macroeconomic effects. The analysis, performed at EU level, leads to interesting results, revealing a complex but contradictory relation between KIBS and economic activity, which is measured by the following main indicators: entrepreneurial density and macroeconomic dynamics.*

**Keywords**: knowledge-based services, KIBS, entrepreneurial activity, macroeconomic indicators, European Union.

**JEL classification**: L84, L86, O33.


## 1. Introduction

The economic transformations of the last decades, both in nature and spatial distribution, are obvious. Fuelled by the major drivers of change, i.e. globalization and the telecommunications revolution (Audretsch, 1998), the national economies have witnessed a new development paradigm, based on innovation and constant adaptation.

The role of innovation and knowledge upon economic growth is not a genuine research theme, but apart from the manufacturing sector, in particular the high-tech industries, only recently have these concepts been associated with the services sector. The perception upon

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[*] Parts of this article were presented at *The 21st International Scientific Conference "Enterprise and Competitive Environment"*, March 22–23, 2018, Brno, Czech Republic (Badulescu, Badulescu and Sipos-Gug, 2018), and at *The 6th International Conference Innovation Management, Entrepreneurship and Corporate Sustainability* (IMES 2018), May 31 - June 1, 2018 Prague, Czech Republic (Badulescu, Badulescu, Sipos-Gug and Herte, 2018).

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services has shifted, evolving from considering them as simple adapters of innovation stemming from the manufacturing sector, to acting as important players in the innovation process, not only as individual innovating actors, but also by spurring on the innovativeness of their clients (Muller and Doloreux, 2007; European Commission, 2012).

In this context of innovativeness and development, the research interest focuses on a specific part of the service sector, the so-called knowledge-intensive services (KIS) and specifically on their subfield named knowledge-intensive business services (KIBS), i.e. the sector including companies providing knowledge-intensive (goods and) services for other companies. Defining KIBS as services where 'knowledge is the main production factor and the good they offer' (European Commission, 2012: 6), the researchers consider that their approach can enrich with different features of KIBS, such as: in-depth interaction between supplier and user (Muller and Zenker, 2001), problem solver by adapting their expertise and knowledge to the need of the client (Strambach, 2008), capable to "generate, facilitate or adopt technological, organisational, social or other kinds of innovation" (Merino and Rubalcaba, 2013: 218). Finally, other researchers, approaching the role of "business angels" in boosting businesses, link the KIBS with the presence of the so-called "knowledge angels", i.e. individuals, persons whose "motivations, talents and specific activities play a specific role within the innovation processes of these firms" (Muller et al., 2012a: 36), "a creative knowledge broker responsible for most of KIBS' efficiency in the global innovation process" (Muller et al., 2012b: 2), acting as "innovation catalysts" within KIBS (European Commission, 2012: 7).

This paper investigates the role of knowledge-based business services (KIBS) in fostering the entrepreneurial activity and macroeconomic results at EU level. It is organised as follows: in the first part we review the relevant literature; in the second part we present the research methodology, including data sources, the indicators used and the research hypotheses; in the third part we present and discuss the relationship between KIBS and the dynamics of the entrepreneurial activity (including the risk of firms discontinuing their activity) and between KIBS and some selected macroeconomic indicators (labour productivity and GDP). The last part presents the findings and conclusions on the complex relationships between these phenomena, as they result from our research.


## 2. Literature review

New venture creation as a process based on a novel business idea, an innovative product or an experiment that allows (following a visionary leader) to overcome the competitors, is a central element of entrepreneurship theories (Casson, 2005; Shane and Venkataraman, 2000). However, Autio and Acs (2007) or Wennberg (2010: 2) avoid to confer to all forms of entrepreneurship (particularly to self-employment and less innovative entrepreneurship) the feature of innovation and knowledge. They focus on "high-potential entrepreneurship" which is the one that really matters for economic development. Younger knowledge and innovation-based firms contribute to the economic growth because they are in entrepreneurial alert and oriented (Lumpkin and Dess, 1996), they do not value excessive internal procedures and routines and take quick decisions in order to adapt to a changing business environment. Moreover, Rosenbusch (2011) considers that the relation between innovativeness and business performance has stronger result in small and young firms. Wennberg, citing Agarwal et al (2010), considers that the essential link between entrepreneurship (as an opportunity for knowledge spill-over, but also for new venture creation) and intensive knowledge is that "knowledge from technological change can be seen as a non-rival and partially excludable good" (Wennberg, 2010: 22). The newly created firms and the established firms that have made the shift from a manufacturing to a service

intensive economy were the actors of the explosive growth of knowledge-intensive business services (Wennberg, 2010).

Moreover, Lever (2002), Malecki (2007), Varis et al (2014: 102) consider that ignoring the contribution of entrepreneurship and new business formation in the new knowledge-based industries will affect the competitiveness of the economies of the world, regardless of their current level of development. EU policies and strategies insist on a knowledge-based economy, by fostering entrepreneurship and by the commercialization of new technologies (Audretsch et al., 2009; Varis et al., 2014: 102) while Wong et al. (2005) consider that high-potential innovative start-ups contribute positively to economic growth to an extent even greater than the undifferentiated support for the creation of new firms. However, recent research shows that it is difficult to endorse a direct relationship between KIBS sector incentives, the creation of new ventures and the economic growth revival in some areas. In their study on the recent development of the knowledge-based industries in a relatively small and remote Finnish region, Varis et al (2014: 119) have found out that "even if the basic elements for industrial renewal and diversification - firms, basic and applied research, financial institutions, commercialization services etc. - seem to be in place", the development of knowledge-based industries or of the regional economy, as a whole, is not impressive. Researchers hypothesize that in the new era of technology, communications and information, the location of KIBS companies cannot have significant effects on local low-tech industries, as long as their functional relationships are not spatial dependent or motivated by them. At the same time, they question the local, national or EU level policies that consume high amounts of funds on impossible targets, counting on a hypothetical multiplier effect of KIBS in the less developed regions. With all the modernity and paradigm shift brought by KIBS to entrepreneurship, many authors point out that this sector should not be overestimated and considered as a universal panacea to the problems of unequal regional development, deindustrialization or lack of resources and opportunities. Thus, in a study of regions affected by the recession and deindustrialization in the United Kingdom, Savic (2016) shows that KIBS sector can be involved so as to mitigate the lack of jobs and to restore the economic base in these areas, but that their effect is partial and that the value added and impact is significantly lower than that of their equivalent companies located in metropolitan centres. Moreover, KIBS, by their de-localization capacity, can contribute, directly or indirectly, to the dislocation, or even the dissolution, of the other local industries that have survived the wave of deindustrialization of the last decades. By default, a continuous spiral of diminishing processing industries could occur and, implicitly, the demand for services addressed to local KIBS will decrease, which will lead to the reduction of this sector as well. In other words, in deindustrialized regions (and probably in other relatively similar situations) KIBS cannot be a stable, long-term substitute for loss of income and jobs in the manufacturing, financial and public service sectors. Moreover, central and local public authorities are beginning to realize that a wide range of broad, structural and consecutive phenomena - recession, continuous deindustrialization and job losses in the public sector cannot be solved with partial KIBS solutions, and that policies must include wider and deeper measures.

In another research aiming at finding characteristics of young creative companies that enhance their innovation and the use of knowledge-intensive business services (KIBS), Mas-Tur and Ribeiro Soriano (2014) investigate if the government should consider this type of company as being a target for their innovation policies (through subsidies, promotion of infrastructure and knowledge transfer etc.). The reasons for public support are that KIBS could foster unspecific entrepreneurship, could act as enablers and sources of innovation for companies from different sectors, irrespective of the fact that KIBS enhance innovation mostly in companies that are, by definition, innovative (Audretsch, 2012; Mas-Verdu et al., 2011). Hyytinen et al. (2015) consider that public policies aimed at supporting innovative

start-ups in high-tech fields or KIBS should not exaggerate with the argument that innovating ventures are more likely to survive than other start-ups (on the contrary, they say!) and create stable jobs (Hyytinen et al., 2015: 565). The authors consider (without denying other reasons for supporting innovation) that innovativeness should not be seen by entrepreneurs, or by advocates of public supportive policies, as a form of insurance against failure in the start-up phase (Hatos et al., 2015). On the other hand, the access to knowledge can represent a chance for ambitious and experienced entrepreneurs from different sectors (not necessarily high knowledge sectors). In a research centred on highlighting the role of dynamic capabilities, Karagouni and Kalesi (2011) show that mature firms from low-tech sectors "with strong and versatile dynamic capabilities that build on knowledge have more chances to survive and prosper in a globalized economy" also gain competitive advantage and adapt to customer needs, together with those still based on conventional products or processes or low price strategies (Karagouni and Kalesi, 2011: 14-15). Innovation (fuelled by technological progress and the striving for quality and competitive prices), speed of delivery and proximity to customers are elements that define SMEs in the KIBS sector. However, the relationship between KIBSs and innovation is not always strong and unconditional, as it seems in theory. For many SMEs in this sector, the appetite for innovation is often moderated by maintaining a reputation for stability in relation with traditional corporate clients, by maintaining a more conservative attitude on established quality of existing services and even by a protected market for young new entrants (Corrocher et al., 2012) or to those from peripheric regions or sectors.

The research on the relationship between innovation, intensive knowledge and entrepreneurship does not cease at the stage of creating new companies, but this relationship also makes sense when talking about their closure. Thus, discontinuing a business does not necessarily indicate that all fruits of its innovative efforts are wasted (Hyytinen et al., 2015). KIBS firms could generate lasting local knowledge spill-overs, regardless of whether these companies have had continued success, or they have shut down. The knowledge spill-over theory of entrepreneurship (Acs et al., 2009) asserts that new knowledge stimulates venture creation and new market entry. Moreover, the closure of a company that was promoted and which has used innovation and knowledge does not automatically mean an empty seat in the local economy and society. It leaves behind resources (e.g. qualified employees, specialized assets, business ideas) that may facilitate (directly or indirectly) the launch of new firms (Pe'er and Vertinsky, 2008). The essential argument regarding the link between KIBS and business creation is that they produce positive intertemporal and spatial externalities (Hyytinen et al., 2015: 577).

Regarding the issue of labour productivity, scholars are relatively unanimous that the service sector presents itself, with few exceptions, with a lower productivity than compared to the industrial sector. However, it is questionable to apply the industrial concept of productivity to services, due to their specific characteristics (e.g. intangibility, heterogeneity, strong connectivity to customers and the high importance of human factor). The discussion is complicated when considering the contribution of the service sector to labour productivity growth on the economy as a whole, or referring to the relationship between clients' perceived quality and productivity. Moreover, according to Akehurst (2008: 8), the services' productivity "is not either so low or slowly increasing as it is possible to understand from the indicators of the national statistics". With regard to macro-economic reasons, it can be argued that innovation induced by knowledge (intensive) services raise productivity and fosters innovation in general. However, the participation of firms from service sector in R&D programmes is relatively low, as compared to their economic share (European Commission, 2012: 33). Knowledge intensive business services often accompany regional prosperity and innovation, and wealthy regions are typically characterized by a considerable high concentration of KIBS, "explaining almost 59% of variance in GDP per capita" (Europe

Innova, 2009). Regions with high concentrations of KIBS exhibit superior patenting activity, which shows that, beyond other factors able to explain labour productivity in certain sectors or regions, the presence of KIBS is really noticeable.

It is interesting to see in what way the notions, consideration and ideas regarding KIBS have evolved over time. Several authors have proposed that up until 2020, there will be four scenarios that KIBS companies could undertake, namely: the technology driven scenario, network and systems scenario, service driven scenario and procurement driven scenario (Toivonen and Caru, 2016). It is important to note that these scenarios are not fixed, and that KIBS companies can alternate amond these scenarios. As shall be concluded from the following part of this research paper, these scenarios have now become realities in which companies operate.

## 3. Research methodology

### 3.1. Data and measures

We used as an indicator of KIBS density the share of companies from the KIBS sector in the total number of active companies, every year, for each country in the study. The data was obtained from EUROSTAT data-base and it covers the EU27-member countries over the 2008-2012 period. Before 2008, the NACE 1.1 system was in use and data regarding the number of active companies is only available as according to it. The correspondence between NACE 1.1 and the currently used NACE Rev. 2 classification system does not allow a continuous time series to be build regarding the share of KIBS companies into the total number of active companies in each country, every year.

Regarding the definition of the analysed KIBS, we must mention that we have included in the analysis a number of 10 NACE Rev. 2 codes, as described in Table no. 1. The selection of these codes was based both on theoretical considerations (see Schnabl and Zenker, 2013; European Commission, 2012: 12), but also based on data availability constraints, since data for some codes that we initially planned to consider were only available at the class level.

**Table 1:** Classification of KIBS activities according to NACE Rev. 2

| NACE 2 Rev.2 codes | Description |
|---|---|
| J62 | Computer programming, consultancy and related activities |
| J63 | Information service activities |
| M69 | Legal and accounting activities |
| M70 | Activities of head offices; management consultancy activities |
| M71 | Architectural and engineering activities; technical testing and analysis |
| M72 | Scientific research and development |
| M73 | Advertising and market research |
| M742 | Photographic activities |
| M743 | Translation and interpretation activities |
| N782 | Temporary employment agency activities |

Source: EUROSTAT, 2008

By considering the mentioned the KIBS activities, a first observation is that the density of KIBS enterprises in the total active companies at the EU level presents major differences

between countries, with values starting at 10-11% in countries like Bulgaria and Cyprus, and reaching 25-30% in countries like Sweden and the Netherlands.

Regarding the other indicator that we have included in the study (namely entrepreneurial activity and labour productivity) we also resorted to the data available from EUROSTAT. Therefore, in the case of entrepreneurial activity, we used the EUROSTAT data regarding the number of new / closed companies and labour productivity (the turnover per /employed persons).

In respect to the geographical coverage of the study, we have analyzed new/closed companies, yearly, from the EU member states. As an indicator of the labour productivity, we have used the turnover per person-employed data, also available in the EUROSTAT database. Due to missing data, we have eliminated in the stage a number of three countries, namely Greece, Denmark and Malta, and therefore in the next analysis stage we have only tested our proposed models on a total of 24 countries.

Data analysis was performed using R 3.0.3 "plm" package, developed specifically for panel data linear regression analyses (Croissant and Millo, 2008).

### 3.2. Hypotheses

The hypotheses formulated and then tested in this paper, by using the data sources previously mentioned, are as follows:

H1: KIBS act as a stimulating factor for the entrepreneurial activity;

H2: KIBS act as a blocking factor for the number of closed companies;

H3: KIBS act as a factor fostering the growth of labour productivity within the companies.

## 4. Results and discussion

### 4.1. The relation between KIBS and the entrepreneurial activity

Regarding the share of the companies acting in the KIBS sectors in the total number of active companies, analysed as a stimulating factor for the number of newly registered companies per 1,000 inhabitants of working age, each year, in the investigated countries (EU 27, excluding Greece, Denmark and Malta), the results of the preliminary analysis did not yield a valid model. The value of the ANOVA test $F(1,95) = 0.072$, for this model, having an associated p value of 0.79. In this case, we cannot claim that KIBS acts as a factor for the entrepreneurial activity in the EU.

Refining the analysis by investigating the entrepreneurial activity at sectoral level for industry (i.e. total industry and manufacturing industry) and for construction sector also did not yield valid models. Usually, we expect a finer level analysis to reveal some relations that might be missed in a more general analysis; however, in this case, no arguments were found to support any influence of the share of the companies activating in the KIBS sector on the entrepreneurial activity, neither on a general basis or on a sectoral level (i.e. industry or construction). By considering the nature of the industry in general, and of the manufacturing industry in particular, the existence of the KIBS companies could be a motivating factor for starting up new companies (by taking innovation and implementing it into production); however, their impact does not seem to be significant at the level of the investigated countries.

In Figure no. 1 we present a graphical representation of the relationship between the share of the KIBS in total companies and the number of newly registered companies, for the investigated EU countries. The results of the local regression analysis, according to the "loess" method proposed by W. S. Cleveland, E. Grosse and W. M. Shyu (1992), are also presented in Figure no. 1. Due to the limitations of this method in the case of the available

data (covering only 5 years), this analysis is shown with the purpose of easing the interpretation of graphical data.

Within the 13-17% interval for the share of KIBS companies in total companies, we notice a higher variability of the entrepreneurial density, as in this case the number of newly registered companies per 1,000 work-age people varies between 1 and 20, while in the case of the rest of the time series the amplitude is lower. This could be an indicator of a certain connection at the level of the said interval. However, it could also be the result of a higher number of countries presenting shares of KIBS companies in the total active companies within this 13-17% interval. More studies are required in order to better investigate this aspect, as more data will be available and time series will be long enough to allow more complex analyses.
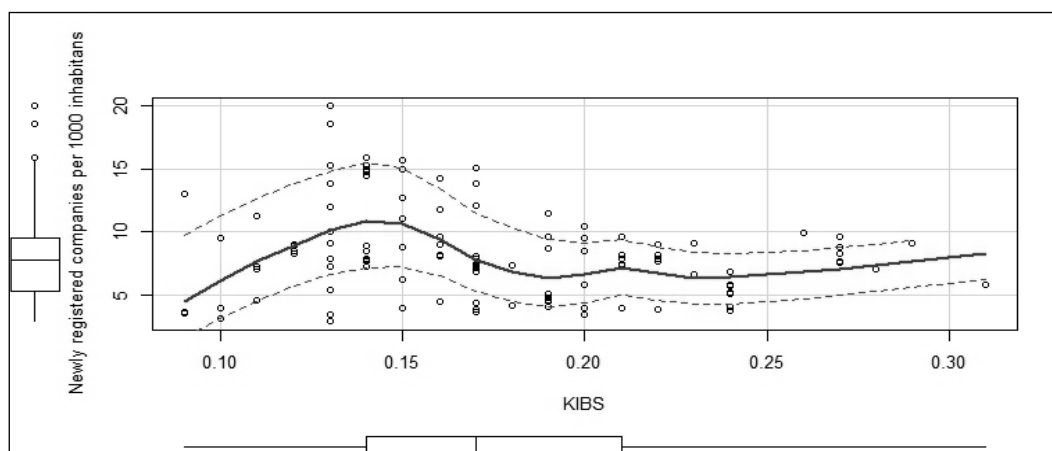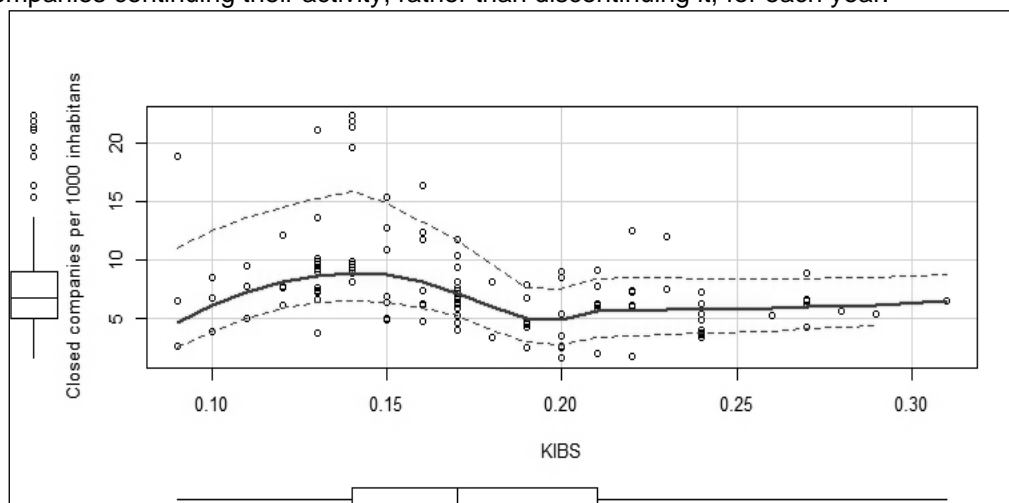


**Figure 1:** The relation between the share of KIBS in the total number of active companies and the total number of newly registered companies per 1,000 inhabitants

Due to the inconclusiveness of the partial results, we decided to go further and detail the relation between the two variables at level of the EU countries included in the analysis (for the same 2008-2012 time period). Due to the relatively short time series (i.e. 5 years), our conclusions are limited. However, we can notice that some countries (e.g. Cyprus, Latvia, Luxembourg and Romania) display relatively strong correlations, in a positive direction, between the share of KIBS companies in the total active companies, and the entrepreneurial activity, i.e. a high share of KIBS is related to an increase of the entrepreneurial activity. At the same time, in countries such as Bulgaria, Estonia, Hungary, Poland, Netherlands and Slovenia, the correlation is negative (i.e. a high share of KIBS is related to a decrease of the entrepreneurial activity). Data indicates that the relation displays different magnitudes in the investigated EU countries, even having opposed directions. These results require further investigations in order to determine the elements that mediate and/or moderate the relations between KIBS and entrepreneurship. Of course, there is a possibility that no relation actually exists at EU level, that the two variables are being influenced by other factors, which are dependent on each country's economical characteristics.

### 4.2. The relation between KIBS and the number of closed companies

The analyses performed have indicated that the share of KIBS companies in the total active companies exercise a negative influence on the number of closed companies per 1,000 work-age inhabitants, in the selected EU countries, for the five investigated years (Figure no 2). The tested model is one of linear regression, applied to panel data (ANOVA test for the model is $F_{(1,92)} = 8.202$ with an associated p value of 0.01. The coefficient of this relation

is b= -36.847, therefore we can claim that an increase of 1% in the share of KIBS in total companies is associated with a decrease of almost 37 of the number of closed companies per 1,000 inhabitants. In the case of the investigated countries, an increase of 1% of the share of KIBS in the number of total active companies should lead to a number of 118,000 companies continuing their activity, rather than discontinuing it, for each year.



**Figure 2:** The relations between the share of KIBS companies in the total active companies and the number of companies closed down per 1,000 inhabitants

We also looked at a series of other factors that could influence the discontinuing of the companies, including GPD (starting from the premise that a decrease in GDP has a negative impact on the business from a demographical perspective), the entrepreneurial activity of the previous year and the productivity of the companies; however, none of these led to a valid regression model.

The relation holds in the case of sectoral analyses, namely in the case of (total) industry, manufacturing industry, and construction. The model validation analyses are presented in Table no. 2. The three models have similar characteristics from the point of view of the explained variance in the number of closed (discontinued) companies by KIBS density (~10%). The coefficients for industry and manufacturing industry are similar, suggesting that an increase of 1% of the share of KIBS in total companies would lead to a decrease of 4.45 in the number of companies closed per 1,000 inhabitants. In the case of the construction sector, the impact is even stronger, with an increase of 1% of the share of KIBS in total companies leading to 11.64 fewer companies closed per 1,000 inhabitants in the construction sector.

**Table 2:** The results of panel regressing of the KIBS density on the number of closed companies per 1,000 inhabitants

| Dependent | ANOVA F (1,91) | P | $R^2$ | Coefficient |
|---|---|---|---|---|
| Total companies | 8.202 | 0.01 | 0.08 | -36.847 |
| Industry (total) | 10.312 | 0.002 | 0.10 | -4.45 |
| Manufacturing industry | 11.886 | <0.001 | 0.12 | -4.55 |
| Constructions | 10.6342 | 0.001 | 0.10 | -11.641 |

### 4.3. The relation between KIBS, labour productivity and GDP
Following the previous analysis, we looked at the relation between GDP and the share of KIBS. We found that GDP per capita is not a significant factor for the evolution of the share

of KIBS in the total number of active companies throughout the investigated countries (EU 27 with the exception of Greece, Denmark and Malta; the ANOVA test of the model is F (1, 95)=0.527 with a p value of 0.47. The data reveals that Luxembourg is an outlier, due to its high GDP value. Therefore, we decided to run the analysis again by excluding it. Even so, no valid regression model was found (p=0.66).

Figure no. 3 shows the results of the analysis of "loess", which indicated the possibility of a non-linear relationship between the share of KIBS in total active companies and GDP. A second order (quadratic) model was also tested, but rejected in the case of the whole sample of countries (p=0.73) and in the case of the sample with Luxembourg excluded: (p=0.21). Therefore, the change in the share of KIBS in total active companies is apparently independent of the level of the aggregated macroeconomic indicator GDP.
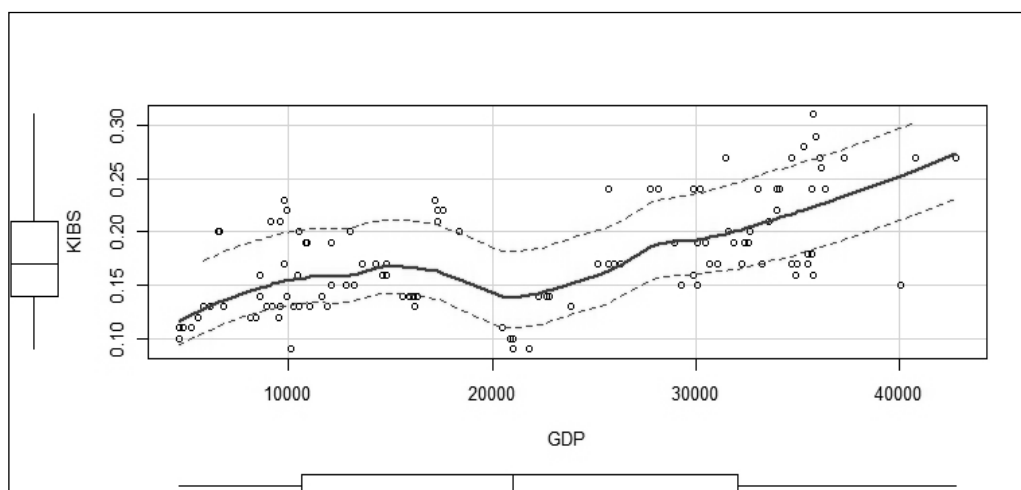


**Figure 3:** The relation between GDP and the share of KIBS companies in total active companies

We have however found that the share of KIBS is a significant factor of labour productivity within the companies in the sample of countries (EU 27, except for Greece, Denmark and Malta). The ANOVA test of the regression model F (1,95)=4.316 has an associated p value of 0.04. If we look at the relation between the share of KIBS and the labour productivity if analysed in the context of including GDP as a factor of the productivity, the resulting model is also valid (F (1,95)=41.837, p< 0.001). At the same time, the model is more efficient than the model including only KIBS. It explains 47% of the variance in productivity, as compared to 4% in the case of the simple model ($R^2 = 0.47$ versus $R^2 = 0.04$).
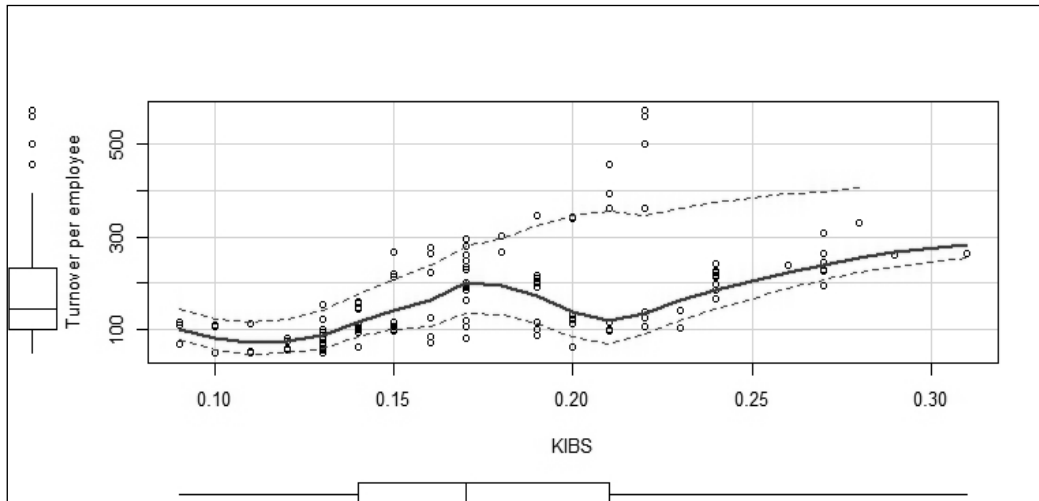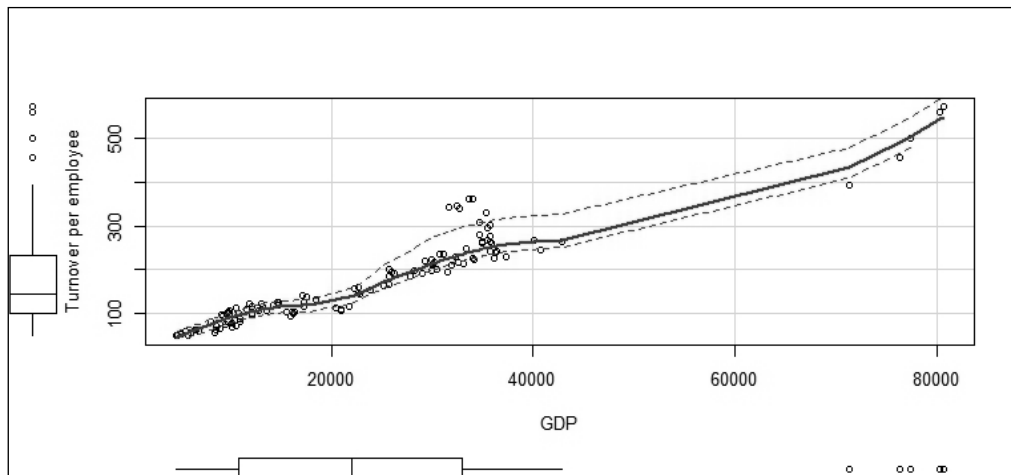
**Figure 4:** The relation between the share of KIBS in total active companies and the labour productivity in all companies

Figure no. 4 allows us to look closer to this relation, that has a relatively high variability, but a definite upwards trend. It would seem that a higher share of the KIBS companies in the economy allows for the reach of higher levels of productivity. However, the relative constant level of the minimum level of the local regression (i.e. the lower dotted line) suggests that this relation is influenced by other factors as well.

One such factor is GDP, which is (predictably) related to the labour productivity, measured by the turnover per employee. Figure no. 5 allows us to visualize this relation, which seems to be linear and positive.



**Figure 5:** The relation between GDP and labour productivity

The interaction between the two factors, i.e. GDP and KIBS, allows us to build a more efficient model. We can look at the set of countries that displays an average level of the KIBS companies share in total companies (15-20%) but a low labour productivity (i.e. Romania, Latvia, Estonia, Czech Republic). We can notice that these countries also register

lower values of GDP per capita than the countries with comparable KIBS levels (i.e. France, Ireland, Finland, Italy, Germany, Belgium) but higher levels of productivity.


## 5. Conclusions

After a long period when the companies in the service sector were considered weak innovators (as compared to those in the manufacturing sector), the last decades have seen a paradigm shift. KIBS is beginning to play a leading role in the knowledge-based economy, as a source of innovation and knowledge in production, dynamic nodes in knowledge-related networks, or intermediaries of innovation between the manufacturing sector as knowledge purchasers, and suppliers, partners and final consumers (Corrocher et al, 2012).

The local authorities and decision-makers have great expectations regarding the role of KIBS in the: regeneration of the economic base of the regions, increase of employment, improvement in the competitiveness and productivity of the SMEs and the role of KIBS in the revival of the entrepreneurial spirit. However, there are several opinions stating that that KIBS sector has its specific way of development and interaction with the economic and social environment. Thus, the possibility of providing remote services seems to encourage more companies located in metropolitan agglomerations and less, the business located in poor peripheral regions or affected by industrial decline; the adaptive capacity of KIBS to regional and sectoral needs is selective. Finally, the impact of these companies for the advance of employment and increase of productivity is unclear and, anyway, below expectations. Thus, we started our research with the purpose of addressing a series of questions regarding the relations between KIBS and the entrepreneurial activity.

Firstly, we have investigated the relation between the share of KIBS companies in total active companies, on one side, and the number of newly registered business per 1,000 inhabitants, each year, on the other side. The results of our analysis failed to support the hypothesis that KIBS act as a stimulating factor of/for the entrepreneurial activity, neither on the level of the whole economy, nor on the regional level of industry (i.e. total industry and manufacturing industry) and construction sector.

Despite the fact that our expectations are derived from the theory regarding KIBS companies as a driver of the entrepreneurial activity, but somehow similarly to other studies, our results are far from being optimistic. Apparently, the correlation between KIBS and entrepreneurship is more complex, as it considerably varies between the investigated EU countries and it registers positive high values only in the case of four countries, i.e. Cyprus, Latvia, Luxembourg and Romania. This suggests that our hypothesis, concerning the fact that innovation taking place at the level of the KIBS companies leads to an increase of the entrepreneurial activity, is not empirically supported. Secondly, we have investigated the impact of KIBS on maintaining companies active (by extending their "life expectancy"). The panel regression analysis yielded a valid model, supporting our hypothesis that KIBS are a blocking factor for the number of closed (discontinued) companies. This effect can be noticed both at the level of the whole economy, and in the case of the analyses conducted on industry, manufacturing and construction sectors. Lastly, we have analysed the relation between KIBS and labour productivity. In this case, we compared two regression models. The first model includes as a factor only KIBS, while the second one includes the combined effects of KIBS and GPD on labour productivity. As expected, the second model is significantly more effective for explaining the variance of the labour productivity. Therefore, the share of KIBS companies in the total number of active companies is a factor of labour productivity. At the same time, the country GDP level together with KIBS density explains up to 47% of the labour productivity.

In conclusion, we can state that the impact of KIBS on the entrepreneurial activity at the level of the European Union (EU 27, excepting Greece, Denmark and Malta) is mostly of an

indirect nature. Although no evidence was found that suggests that the share of KIBS companies in the total number of active companies is directly fostering entrepreneurial activity, however, the density of KIBS has been proved to be a factor that prevents the closing down or discontinuing of the companies, as well as a factor which leads to increased labour productivity.

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## ECONOMIC KNOWLEDGE OPTIMIZATION IN UKRAINIAN AGRARIAN UNIVERSITIES: A KNOWLEDGE MANAGEMENT PERSPECTIVE

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**Abstract:** *A university as knowledge-intensive organization is an important actor that has a powerful influence on knowledge-economy formation. Implementation of knowledge management in universities is inevitable by-product of economic grows and improvements in diverse branches of national industry complex. The aim of this paper is to analyze the economic knowledge functioning in Ukrainian agrarian universities. The author uses statistical analysis to measure the number of economic departments and academic disciplines in Ukrainian agrarian universities. The study shows that up to 37,5% of educational departments in Ukrainian agrarian universities consists of economic educational departments. The analysis of economic knowledge functioning in Vinnytsia National Agrarian University showed that within economic educational departments almost 55% belong solely to economic disciplines and almost 30% belong to interdisciplinary economic courses. The author also uses theoretical modeling to show the knowledge environment of the universities. Attention is focused on differentiation between the inner, micro and macro knowledge environments of the universities. The author strongly recommends the use of knowledge management instruments with the aim of improving economic knowledge. Improvement of knowledge flows between an agrarian university and other important stakeholders will allow the optimization of the knowledge infrastructure of the universities, including the structure of economic knowledge. Government bodies, managers of the universities, and heads of university departments should use knowledge management tools on the systemic basis in order to achieve significant organizational results and make progress. Universities should take into consideration the specificity of micro and macro environments. Factors of globalization, new technologies, politics and legislation, economics and finances, society and culture, nature and geography should be examined and included in the information infrastructure of a university. It is clear that macro environment information is already under the consideration of academic governing bodies.*

**Keywords:** knowledge management, knowledge environment, knowledge-intensive organizations, agrarian university, interdisciplinarity*.*

**JEL classification:** A12, I20, Q19*.*

## 1. Introduction

During last two decades, knowledge management (KM) established itself as a reliable instrument that allows the enhance of the effectiveness of knowledge usage on multiple levels. Business organizations as well as non-commercial and government organizations try to implement KM and optimize their knowledge infrastructure. Application of KM in universities can help solve numerous problems associated with sustainable development in the XXI century. Implementation of sustainable development principles is strongly associated with the dominant role of universities in the development processes (Fam, 2017; Ismail, Welch and Xu, 2015).

Literature related to the KM implementation in a university environment is quite broad and diverse. One of the most important areas belongs to the regional development by means of KM in universities (Corsi and Prencipe, 2018; Di Nauta et al., 2018; Hermans and Castiaux, 2017; Rodríguez-Gulías, Rodeiro-Pazos and Fernández-López, 2016). Using a cross-disciplinary cooperation between a university and other stakeholders, a society can achieve considerable improvements resulting in various areas of regional development.

KM covers almost every part of a university's activities. Employability (Frunzaru et al., 2018) and knowledge transfer between a university and industry (Rodríguez-Gómez and Gairín, 2015) still remain one of the most crucial problems connected to KM. Undoubtedly, these spheres are important for the proper functioning of a university. But, within the scope of the article, we focus our attention on the peculiarities of economic knowledge in Ukrainian agrarian universities.

Usage of KM in universities with the aim of economic knowledge optimization will help reveal the full potential of research and development (R&D) and learning. We use statistical analysis of economic knowledge that flows within agrarian universities. We also propose a theoretical model that helps improve economic knowledge and academic activities associated with it.


## 2. Literature review

Scientists and scholars all over the world have a positive attitude towards the implementation of KM in universities. During the last decade, a lot of information about the positive aspects of KM has occurred. Scientists concluded that KM has an exceptional potential in the educational sphere (Mohammad and Jose, 2016). KM can bring a lot of fruitful results connected with innovation creation. Since universities are knowledge-intensive organizations, a lot of knowledge must be organized in an appropriate way (Oliveira et al., 2006). Some scientists also connect the implementation of KM in universities with the processes associated to globalization, emerging technologies and organizational competitiveness (Al-Zoubi, 2014). KM can advance the level of academic excellence, and it also helps to create necessary conditions for knowledge exchange and transfer, which will help to achieve economic goals (Ramanigopal, 2012).

Universities must know their knowledge assets in order to gain maximum profit. Very often, academic knowledge exists in the form of "gray literature", but optimization of knowledge can turn it into real treasure (Dhamdhere, 2015; Downs and Velamuri, 2018). In order to be competitive in a knowledge society, universities should create knowledge not only for their own use (Bureš et al., 2011). KM allows the full use of knowledge, which is in the possession of universities (King, 2009). Universities should build an information infrastructure and thus become an integrated part of a knowledge society (Hoq and Akter, 2012). Scientists expect that KM implementation will help a university become a trigger of innovations and a productive part of a knowledge economy (Ojo, 2016). Universities must consider large amounts of knowledge that can be obtained from outside of a university (Akram et al., 2011), but all the components of KM must be carefully carefully (Ngok-Tan and Gregar, 2018).

Scientists associate KM with an optimization of university information infrastructure and human resource management of academic personnel. KM can also influence the improvement of the learning and teaching processes (Mohavidin et al., 2007). In this respect, it is important to find connections between faculties' development and personal KM (Cçavuşoğlu and Uzunboylu, 2014). KM can have a great influence on the development of creative skill among university staff (Rahimi et al., 2011). In the university environment, KM can be used as an alternative strategy for faculties' support and improvement of work (Mazhar and Akhtar, 2016).

Since knowledge is a complex concept, academics have to deal with large amounts of data, which can be converted into information, if the appropriate context can be understood (Kidwell, Linde and Johnson, 2000). To do this, scientist create step-by-step plans of KM implementation in universities (Agarwal and Marouf, 2014). A lot of advantages can be created, so that managers and academics must consider growing competitiveness and reduction of government spending (Chaston, 2012). Apart from this, modern conditions create situations where technological culture must be supported with informational culture. In general, KM can help with the optimizing of processes that are connected with effective information usage in universities.

We must mention here that a university, as a knowledge-intensive organization, should use both general KM tools and specific KM tools associated with university specific activities. The first group includes problems of knowledge governance and knowledge infrastructure creation (Sohrabi et al., 2015), factors of KM success (Al-Oqaily, Hassan, Rashid and Al-Sulami, 2014), cycles of knowledge and multiple knowledge trajectories (Pantic-Dragisic and Söderlund, 2018; Barley, Treem and Kuhn, 2017). The second group includes questions of interdisciplinary knowledge integration (Mengis, Nicolini and Swan, 2018; Shaw et al., 2018), teamwork building, advance of team creativity, elimination of hidden knowledge (Teodoridis, 2018; Fong et al., 2018) and development of academic personnel (Darvish, Ahmadnia and Oryshyan, 2013; Mannucci and Yong, 2018).

## 3. Aim and methodology

The aim of this paper was to analyze the economic knowledge functioning in Ukrainian agrarian universities. Since agrarian business uses knowledge both from agrarian science and also from economic sciences, it is important to analyze the amount of interdisciplinary courses in a university.

We use statistical analysis in order to investigate the peculiarities of economic knowledge functioning in Ukrainian agrarian universities. Within the article, our attention is focused on two main elements, which we define as follows: quantity of economic educational departments in the universities and quantity of academic disciplines that are related to economic knowledge. Information regarding the percent of specialized, economic and interdisciplinary knowledge will help reveal the structure of economic knowledge functioning in the agrarian universities.

We have selected 13 universities out of 240 Ukrainian universities from Universities Rating "TOP 200 Ukraine" 2018 (Osvita, 2018), that are connected to agrarian science end education. The attention was focused on the actual quantity of economic (or partly economic) departments at the agrarian universities. The next step was to analyze the amount of economic disciplines and interdisciplinary courses at one of the Ukrainian agrarian universities. This information will help reveal the level of integration between economics and agrarian science in Ukraine. With that aim in mind, we have analyzed a list of educational disciplines that are taught at the economic faculties of an agrarian university. In both, cases descriptive statistical analysis was used.

We have also used theoretical modeling to visualize complex processes related to the creation, storage and exchange of knowledge. We have employed the use of theory of the marketing environment as the basis for the offered conceptual model. Thus, modulation of the theory is grounded in the concepts of inner, micro and macro knowledge environments. Every environment (out of the three mentioned environments) has elements and also flows of information between them. The effective implementation of KM in an inner environment is directly linked to the ability of productive communication with external environments.

## 4. Results

The development of the agrarian sector in Ukraine greatly depends on the theoretical work with information that is related to situation in the agrarian sphere. In the 21st century, the development of the agrarian sector is connected to the economic effectiveness of enterprises that form regional markets and the national agrarian infrastructure. At university level, integration between economics and agrarian sciences exist in the form of academic disciplines and R&D of detached departments.

Managers, scientists and academicians should pay serious attention to problems of KM implementation. Modern development of technologies allows the management of huge quantities of data and information. We decided to analyze the functioning of economic knowledge in Ukrainian agrarian universities, in order to study the abilities of interdisciplinary activities' improvement.

We have chosen thirteen Ukrainian agrarian universities from the rating of top Ukrainian universities. They constitute the network where knowledge is necessary for when the agrarian sector is cultivated. Since the agrarian domain is part of the national economic system, then an economic component of education in Ukrainian agrarian universities plays an important role in the education of future agrarian specialists. Each of the thirteen Ukrainian agrarian universities have economic faculties, where economic knowledge is distributed. The faculties are divided into educational departments that concern themselves to specific economic themes and issues.

**Table 1:** Number of economic educational departments in Ukrainian agrarian universities

| Universities | Rating | Faculties | Departments | Econ Departments | % of Econ Departments |
|---|---|---|---|---|---|
| National University of Life and Environmental Sciences of Ukraine | 22 | 16 | 105 | 19 | 18,1 |
| Sumy National Agrarian University | 129 | 8 | 53 | 9 | 17,0 |
| Mykolayiv National Agrarian University | 133-134 | 8 | 27 | 8 | 29,6 |
| Dnipro State Agrarian and Economic University | 142-143 | 7 | 37 | 6 | 16,2 |
| Bila Tserkva National Agrarian University | 147-149 | 6 | 43 | 6 | 14,0 |
| Vinnytsia National Agrarian University | 152-153 | 6 | 32 | 12 | 37,5 |
| Poltava State Agrarian Academy | 154 | 7 | 33 | 8 | 24,2 |
| Tavria State Agrotechnological University | 155 | 6 | 28 | 7 | 25,0 |
| Kharkiv National Agrarian University | 161-162 | 6 | 32 | 8 | 25,0 |
| Zhytomyr National Agrarian and Ecological University | 171 | 8 | 41 | 10 | 24,4 |
| Lviv National Agrarian University | 172-173 | 5 | 35 | 6 | 17,1 |
| Kherson National Agrarian University | 181-183 | 5 | 20 | 6 | 30,0 |
| Odesa National Agrarian University | 216 | 3 | 20 | 3 | 15,0 |
| **Average** | | **6** | **33** | **7** | **22,9** |

Source: Author's elaboration based on Universities Rating "TOP 200 Ukraine" 2018 (Osvita, 2018).

In general, a great part of a university's' educational activity depends on economics-related knowledge and economics-related education. Economic knowledge exists in the form of specialized economic disciplines or interdisciplinary courses (we will discuss them later). It is analyzed that Ukrainian agrarian universities contain from 20 to 105 educational departments. A significant number of departments, from 15 to 38%, are related to economics. The smallest amount of solely economic departments is in the Odesa National Agrarian University (3 departments), and the biggest amount is in the Vinnytsia National Agrarian University (12 departments). Thousands of teachers and scientists work and create economic knowledge within these departments. Generally, they work on the creation and improvement of academic disciplines and working programs. Each department also has a program of specific R&D related to economics, marketing, management etc.

The amount of economic educational departments is quite big and knowledge that is created within them brings serious positive effects to agrarian sphere. Many interdisciplinary courses and solely economic disciplines exist in different variations and reflect specifics of separate university and academic personnel. Economic disciplines, from economic theory, to marketing, accounting and management, create a holistic understanding of economic phenomena and teach students to be aware of economic processes.

Undoubtedly, within the borders of the country, agrarian universities are competitors, but they may also cooperate to advance the quality of knowledge and education as a nationwide phenomenon. The systematization of knowledge that belongs to agrarian sphere requires a lot of time, proper governance and resources. Interdisciplinary knowledge that is associated with economics constitutes an important part of the modern agrarian discourse. We can firmly state that the spreading of information technologies (IT) makes a great input in knowledge optimization. Even universities that are situated in different regions of the country can become subject of and to scientific research, directed towards KM and knowledge quality improvement.

Until the universities preserve big amounts of scientific knowledge only for their own usage, we will not be able to make judgements about competitiveness of knowledge, especially at national levels. Openness and transparence of information systems in the universities are a pledge of different aspects of education and science comparison. Unfortunately, many Ukrainian universities still do not have open access to information regarding quality and quantity of academic disciplines working programs that are taught within educational departments. Openness of knowledge that is related to educational process is a complex global problem as it is related to the systematization and standardization of university knowledge.

In order to explain the circulation of economic discourse in agrarian universities we have conducted the analysis of educational disciplines and courses that are being taught at the educational departments of Vinnytsia National Agrarian University (VNAU). The number of economics-related educational departments in VNAU is the highest among analyzed universities, so we can assume that the university has a profound system of economic knowledge.

Three faculties were chosen for the analysis. The faculties are split into twelve educational departments that specialize in economics, marketing, management and accounting. Each educational department has a diverse number of educational disciplines. The minimal quantity of disciplines is 13 and the maximum is 54. In general, 344 academic disciplines were analyzed, out of which 189 are solely economic disciplines and 102 have interdisciplinary character. The department of economic cybernetics does not have general economic disciplines, but almost half of its disciplines have strong interdisciplinary orientation that is related to the economics. Academic disciplines on other departments can refer only to economic and interdisciplinary knowledge, for example Department of Economics.

**Table 2:** Number of economic and interdisciplinary courses in Vinnytsia National Agrarian University

| Departments | Discip lines | Econ Discip lines | Interdis- ciplinary courses | % of Econ Discip lines | % of Interdis ciplinary courses |
|---|---|---|---|---|---|
| Department of Economic Cybernetics | 29 | 0 | 14 | 0,0 | 48,3 |
| Department of Economics | 43 | 30 | 11 | 69,8 | 25,6 |
| Department of Foreign Economic Activity Management, Hotels and Tourism | 54 | 14 | 24 | 25,9 | 44,4 |
| Department of Modeling and IT in Economics | 32 | 10 | 16 | 31,3 | 50,0 |
| Department of Finance, Banking and Insurance | 34 | 30 | 3 | 88,2 | 8,8 |
| Department of Agrarian Management | 26 | 18 | 7 | 69,2 | 26,9 |
| Department Administrative Management and Alternative Energy Sources | 36 | 21 | 5 | 58,3 | 13,9 |
| Department of Marketing and Agrarian Business | 27 | 12 | 14 | 44,4 | 51,9 |
| Department of analysis and statistics | 14 | 13 | 1 | 92,9 | 7,1 |
| Department of Audit and State Control | 14 | 12 | 2 | 85,7 | 14,3 |
| Department of Accounting | 13 | 10 | 2 | 76,9 | 15,4 |
| Department of Accounting and Taxation in the Branches of Economy | 22 | 19 | 3 | 86,4 | 13,6 |
| **Total** | **344** | **189** | **102** | **54,9** | **29,7** |

Source: Author's elaboration based on based on the Lists of disciplines that are taught at the economic faculties of VNAU (Vinnytsia National Agrarian University, 2019).

Quantity of solely economic disciplines is almost 93%. Although the amount of economic disciplines in overall amount of academic disciplines is pretty high, managers and academics should draw attention to the interdisciplinary courses that combine knowledge from economics and other sciences. For example, the Department of Modeling and Information Technologies in Economics have 50% of interdisciplinary courses. That means the many complex interdisciplinary questions may occur, since in agrarian universities we can find a mix of theories and practical knowledge from computer sciences, economics and agrarian sciences. An observer can find high levels of interdisciplinary complexity within the agrarian universities. Still, some educational departments can have only one interdisciplinary course. The understanding of interdisciplinary connections between academic disciplines is a complex task. On one hand, we have a strong demand for economic disciplines that help to understand economic laws and conduct of agrarian business. On the other hand, students need to know practical and technological aspects of agrarian business (for example, technologies of growing plants and crops). Overall information that exists on the crossroads between economics and agrarian sciences is very big in volume. That is why we need to

consider the complexity of an information system and the complexity of a university as it's part.

For the convenience of the research, we have created the model of knowledge environment of a modern university. We took the model of marketing environment of the organization as the basis. Since universities are knowledge-intensive organizations, then between universities and other stakeholders a lot of information flows exist, flows that provide information exchange between the parties. Facilitation of information reciprocation will help to optimize the information structure of a university and rise the quality of the educational process. A university is also an important part of the knowledge economy and it takes part in the processes, transformation and betterment of the Ukrainian society.

Figure 1 shows the inner, micro and macro environment of a university. Microenvironment includes state organizations, business representatives, civil society, other universities and foreign organizations. All these stakeholders actively cooperate with a university as a knowledge-intensive organization and are involved in the processes of creation, storage and exchange of information. Facilitation and organization of the cooperation between a university and other involved parties will create new information flows and clarify existing data. Such cooperation, first of all, can affect the quality of scientific and educational activities in a university. Stakeholders can take serious part in university's events and coaching support. Establishment of new information flows can show new directions for managers and academics' development that will bring a new understanding of existing problems.
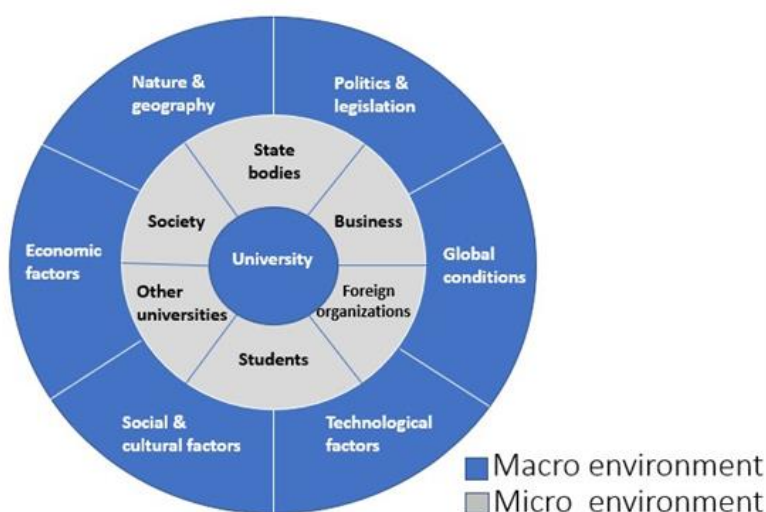


**Figure 1:** Inner, micro and macro knowledge environments of Ukrainian agrarian universities
Source: own elaboration

The macroenvironment influences all analyzed universities. The understanding of the macroenvironment and the adaptation to macroconditions require KM instruments in order to manage information flows and conduct reasonable changes. One of the main problems is improvement of research and teaching quality, which will help to raise competitiveness of national universities. Other important problems are the standardization of knowledge, the search of proper standards or even possibility of standardization. Other macro-factors can influence the development of information infrastructure from the outside of a university. That is why the influence of political, economic, technological and social factors must be measured and controlled.

By considering the agrarian university as an element of the knowledge economy and the most important player in the appropriate region requires intensified attention from government bodies, managers of the universities, business representatives and other bodies involved.

## 5. Discussion of the results

The creation of holistic view about the role and place of a university in the knowledge society and knowledge economy depends on the possibilities of considering all the important factors. With this purpose, we have made some advice for university managers and decision makers. Attention and efforts should be concentrated around implementation of KM principles in a university inner environment. It will help to optimize, arrange and regulate internal flows of information. Improvement of inner knowledge environment depend on optimization of hundreds of academic disciplines and interdisciplinary courses. Attention should also be paid to the reconsideration of R&D programs of some university departments. The applying KM principles to the inner environment of a university can bring a higher quality of creation, storage, distribution and exchange of information. Exceptional attention should be paid to the clarification, openness and accountability of information in a university.

An effective internal knowledge and information management is strongly bounded to the micro and macro knowledge environments, that are situated outside a university, but that have a powerful influence on university life. On a regional level, universities actively cooperate with local government bodies, business representatives and the civil society. Besides this, students take part in international academic programs that are provided by foreign organizations. Exploitation of KM provides efficient instruments for the improvement of information flows between universities and microenvironment. The distribution and exchange of knowledge can be more effective when the importance of KM is realized. KM can be supported with good governance and human resource management tools.

Proper organization of information flows around a university (in our case agrarian university) will improve the national network of university education and science. Thus, agrarian universities form a national network of higher education institutions that specialize on research in agrarian sector and preparation of the professionals this particular sector. From an economic point of view, universities are competitors. But from the public administration point of view, universities are part of a higher education that support the functioning of the agrarian sector of the economy. Therefore, the state is directly interested in the advancement of the national agrarian science and education. This is completely consistent with the strengthening of a university role as being the trigger of innovation in the regions (where universities are situated). In this dimension, problems of systematization and standardization of knowledge, especially economic, deserve special attention. Other crucial problems are optimization, practical character and quality improvement of data, information and knowledge.

By considering an agrarian university as an element of the knowledge economy and the most important player in a region requires an intensified attention from all the involved parties.

## 6. Conclusions

By applying the theoretical model described in the paper can have a sporadic or systemic character. By forming a developed knowledge economy requires active support of regulated information flow from universities. The excellence of academic staff is strongly connected with the quality of educational programs and academic disciplines. Partly, this depends on the optimization of economic knowledge in universities.

We can conclude that economic knowledge exists in the form of solely economic disciplines and disciplines that contain economic knowledge and which have an interdisciplinary character. While economic knowledge constitutes an important part of the education of students, interdisciplinary courses can facilitate practical training and explain connections that exist between economics and agrarian sciences.

KM instruments that are in possession of universities allow universities to fully use the potential of knowledge and improve the quality of information flows. To do this, first and foremost, university managers, faculties members and faculties should use KM literature and organize university activities according to theoretical recommendations and principles of KM.

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# LANGUAGE LEARNERS' BEHAVIOUR AT MULTINATIONAL COMPANIES

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**Abstract:** *In our digitalized world, foreign language skills are becoming vital in the life of multinational companies. In addition to traditional teaching methods, online teaching methods play an important role in language teaching. In this paper we try to compare the perceived effectiveness of online and offline teaching methods. We also aim to understand language learners' behaviour, including their motivation, service provider choice, information sources considered in their choice and their willingness to pay. In this paper, we also examine the extent to which language learners are supported in everyday company teaching by the Eflow by SZABO online software, which can be used in a flexible form of education. A combined (online and paper-based) survey was conducted among language school students who are using Eflow by SZABO. To analyse the data, we have used descriptive statistics and factor analysis. We have found that language schools are considered to be the most effective form of language learning, closely followed by Eflow by SZABO. Individual learning is also seen as being more effective than learning in groups. The findings can be used by scholars and in throughout language teaching business too.*

**Keywords:** online language learning, traditional language learning, consumer behaviour, effectiveness, multinational company, Eflow by SZABO.

**JEL classification:** M31; Z13.

## 1. Introduction

Because of their busy schedules and a dearth of acceptable language-learning opportunities, many learners in Hungary find it difficult to sit down and force themselves to learn a second or third language. The opportunity to learn online may facilitate learning, partially alleviating these stumbling blocks and providing motivation on the part of learners. A great many of the populace are in possession of a smartphone, which provides the chance for learning and discovery, and has a radical impact on people's habits and interactions in a multitude of milieus (Nagy, 2017). I have taught at language courses at different multinational companies for a long time. Consequently, it is very important for me to continuously monitor the special demands of this market and to understand these demands in order to be able to react to any change at the right time.
Now we would like to take a step further by proactively looking for the hidden demands of this market segment.

## 2. Literature review

Before the current IT explosion, the use of this technology was quite restricted. Now, by contrast, we can see a much more flexible application owing to the proliferation of digital tools, mobile technology, and collaborative systems. The horizons of language acquisition are broadening at a furious pace.

Motallebzadeh, K., Ahmadi, F., Hosseinnia, M. (2018) analysed teachers' creativity and their teaching effectiveness, and they found that the more creative someone is the more creative they are when teaching a language. The study points out that there is a significant difference between female and male teachers with regards to the creativity of their teaching in favour of women.

Blended learning can use many different types of forms and methods in foreign language teaching. Online learning contents, surpassing the limits of formal education, contain many visual elements, listening texts and video files. Many people would like to try a blended language course provided at just a fraction of the price of traditional language courses.

With the development of the digital world, more and more tools are available for online teaching and they are increasingly becoming part of our everyday life. The continuous use of these tools aid and assist online teaching opportunities in establishing themselves naturally and almost invisibly in our daily routine, thus making them generally accepted. The methodology of online teaching has become more refined and new elements, e.g. gamification elements have been introduced, which enhance students' motivation due to their playfulness.

According to a survey by Jabeen and Thomas (2015), the majority of the respondents say that some years ago they preferred learning with a teacher in a classroom to learning on their own in a computer-assisted environment, but these preferences have changed to a small extent by now. They investigated the learning trends of students who opt for online language courses and their effectiveness by assessing multiple factors, including the use of the latest available technology and the skills that are taught by these online methods. The online teaching of various language skills was examined separately, skill by skill, and the online methods were compared with the traditional classroom methods. They concluded that students consider lessons with a teacher to be more efficient for language learning than in the online environment. They concluded that it is necessary to have the teacher' assistance and support for the proper conduct of online speaking activities. This was true some years ago, but with the rapid advancement of technology it can be stated with confidence now that today's and especially the near future's technical facilities can easily make up for the teacher's physical presence in such cases. Therefore, our opinion is that with time all the positive elements of face-to-face language teaching that seem to be advantageous in several respects will be possible to be replaced by a corresponding digital method. However, Shishavan and Sadeghi (2009) claim that it is essential to have good and qualified teachers so as to make the educational system operate efficiently and to improve the quality of learning.

According to Ghavifekr and Rosdy (2009) ICT (Information and Communications Technology), technology-based teaching is effective for both teachers and students and one important factor of successful learning is that the teachers are well-equipped and well-prepared in terms of technological tools and facilities. "Paperless" Foreign Language Teaching offers an opportunity for students to acquire the necessary information during foreign language lessons by themselves at skill level. Shishkovskaya, Sokolova and Chernaya (2015) found that one of the main advantages of the „paperless" technique is that it increases the motivation of students in learning a foreign language. "There is more information available to any student with a smartphone than an entire empire would have had access to three thousand years ago" (Shishkovskaya, Sokolova, Chernaya, 2015). The main advantages of this technology are that students take an active role in the educational process, they can interactively communicate with their e-learning environment, computer-assisted teaching is flexible, the rate and pace of learning can be easily adjusted and controlled, the teaching load, the information provision and its updating can be optimized. Through the use of "paperless" technology the teacher can undergo a creative process together with the students and discover new training techniques and technologies. In this

article the authors find that with the progress of technical devices not only the teacher's physical presence but also the paperless methods may have a motivating effect. Quick feedback and assessment, the continuous automatic fine-tuning of customisable contents strengthen the acceptability of online systems.

## 2.1. Advantages of online language teaching

Self-regulated time management is the crucial concept here, as online learning offers flexibility for learners in practising or reviewing the foreign language in the timeframe that is suited to their level and style of learning. This provides learners with the independence they need; they need to adjust their schedule only to themselves, as they can spend as little or as much of their time on a particular assignment as they want to. Requiring internet access as a prerequisite, online tools offer total flexibility in time. This stands in stark contrast to old-style methods, which are tied to brick-and-mortar venues. Nor do old-school methods offer the savings, in terms of both time and money, as digital ones do, as up-to-date methods can be cheaper than traditional ones, and they obviate the need for spending time in one's car, laboriously going to and from the lessons. Instantaneous transmission of language learning materials and other information, so widely taken for granted today means that the significance of current communication technologies must not be underestimated, neither in teaching nor in other fields.

## 2.2. Disadvantages of online language teaching

Interpersonal teacher-student contact clearly remains a requirement for education, as learners need the backing of another individual to stimulate the timely and quantifiable acquisition of the foreign language. Motivation is the key. Even if online teaching offers great flexibility, the lack of motivation can be one of the main obstacles to language acquisition. Online technology itself does not satisfy all the needs of a language learner. Spoken interaction between people is still unsurpassed in the field of language acquisition, and this element is sadly lacking from IT-driven teaching. At the same time technology appears to be able to offer good solutions for replacing language teachers with regard to both motivation and interpersonal communication, even if to a small extent initially but definitely to a larger extent in the near future.

## 3. Eflow by SZABO

Eflow by SZABO, a fully functioning online application, assists those who set out to develop their teaching materials at corporate language courses. Learners who cannot use their English knowledge at their workplace due to a lack of time but who would still want to refresh or deepen their knowledge previously acquired can engage in the process of language learning. Eflow by SZABO, a entirely online application, also assists those who would like to develop their language skills independently at multinational companies.

The online material was developed for five levels: A1, A2, B1, B2 and C1 in line with the *requirements set by the Common European Framework of Reference for Languages.* It was developed on the basis of detailed and well-structured training courses and teaching experiences. Participants can choose the following skills: Vocabulary, Grammar, English Usage, Reading Comprehension, Writing, Listening Comprehension and Speaking. The study material package includes 15-23 topics at different levels. Before starting using Eflow by SZABO a preliminary knowledge test is recommended. One topic per week is suggested for acquisition. A mid-term test and a final test can be found in the package, which are intended to increase the language learner's motivation. The study materials are easy to handle and are well-structured. Different skills are indicated with different symbols.

## 4. Methodological Approach

In order to measure the effectiveness of different language learning forms and understand the language learners' consumer behaviour a combined (online and paper-based) survey with a sample of 58 respondents was conducted in 2019. Exclusively, language learners at multinational companies who are currently using the Eflow by SZABO module were included in the study. All of them were surveyed, but not everybody responded to each question, so the total number of respondents is always indicated if it is less than 58.

At the multinational companies where SZABO Nyelviskola teaches English in classroom form of language teaching, each student gets a credit as an extra service to the Eflow by SZABÓ online program. So, within a closed system, students can use their credit to develop the skill they choose as they like and as they can fit it into their schedule. The completion of the questionnaire was on a voluntary basis. A total of 124 students were given the option to decide on their own if they wanted to complete the questionnaire related to the research topic of this paper. Eventually, there were 58 language learners who completed the questionnaire voluntarily either online or on paper.

In the survey, we used different self-developed constructs to measure different aspects of the language learners' behaviour. The importance of motives, the importance of information sources used in the decision-making process as well as the importance of attributes of the language service provider choice were measured on a five-point importance scale. The perceived effectiveness of the different types of language learning was measured on a five-point effectiveness scale, whereas the development of language skills was measured on a five-point extent scale.

## 5. Analysis and Results

Our results show that respondents consider learning languages as being important. The mean was between important and very important on a five-point scale (4.3). They quite like learning languages. Respondents are quite motivated to learn foreign languages. The primary motive for learning languages is that easier communication with others becomes easier, followed by higher income and obtaining a language certificate. Obtaining a secondary school qualification and working abroad are the weakest motives to learn foreign languages as according to the survey (Figure 1).
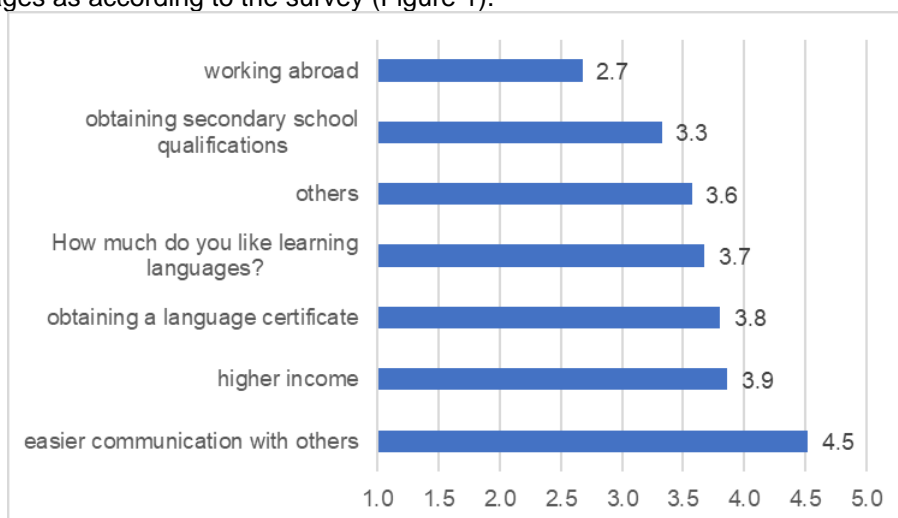


**Figure 1** Motives for learning languages (1= the weakest … 5 = the strongest)

As far as the importance of information sources used in the decision-making process of language learning is concerned, friends and acquaintances are found to be the most significant influencing factor, followed by family members, the social media and online advertisements. Other information sources and flyers are regarded as non-important information sources (Figure 2).
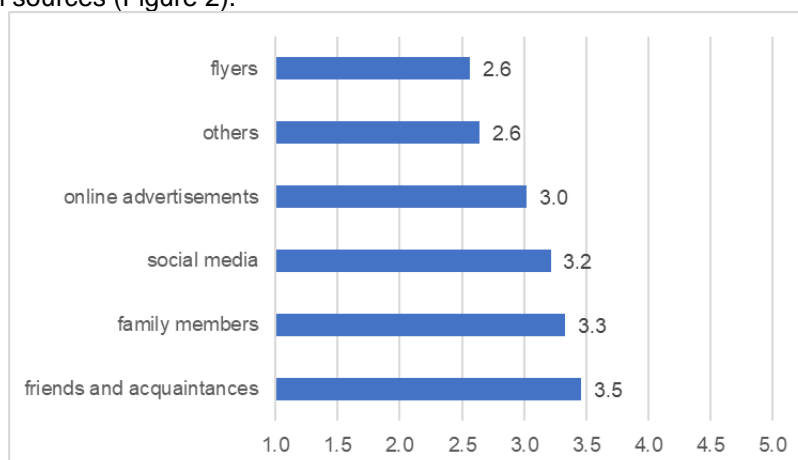


**Figure 2** Importance of information sources (1= the least important … 5= the most important)

Figure 3 shows the importance of the attributes of choosing a language learning service provider. Perceived effectiveness of the service provider, services fee, and group size are the key to success or failure, being the most important attributes when it comes to choosing a service provider (i.e. a language school or other forms of language learning). Flexibility of the administrative procedures related to language learning and service environment as well as the image, reputation & brand name and the ease of use (webpage/app) are equally important attributes. The service provider's accessibility, i.e. the distance from where the potential student resides or works, and parking opportunities are also considered. The design of the language learning website/app is the least important attribute in regards to the decision making process.
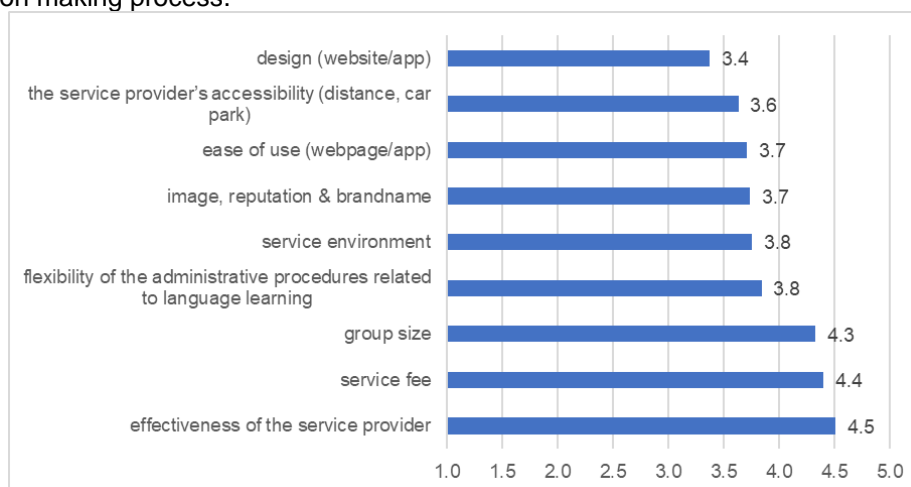


**Figure 3** Importance of the attributes of choosing a language learning service provider
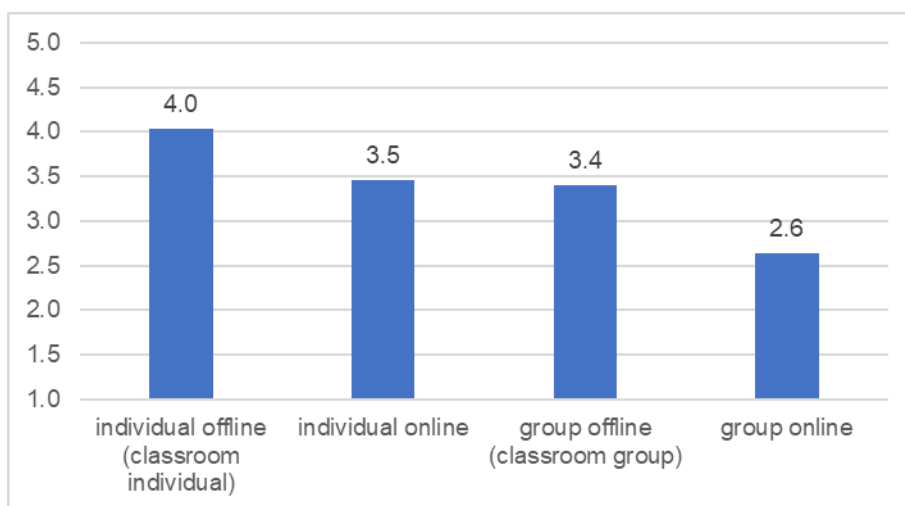
Figure 4 shows the Perceived effectiveness of language learning types. It was found that the respondents consider the effectiveness of learning/teaching at a language school as

being between effective and absolute effective, the mean was 4.5 on a five-point scale, followed by the score given for the effectiveness of Eflow by SZABO, the effectiveness of learning language online, and the effectiveness of language teaching in public education, which is not considered effective at all by the respondents.
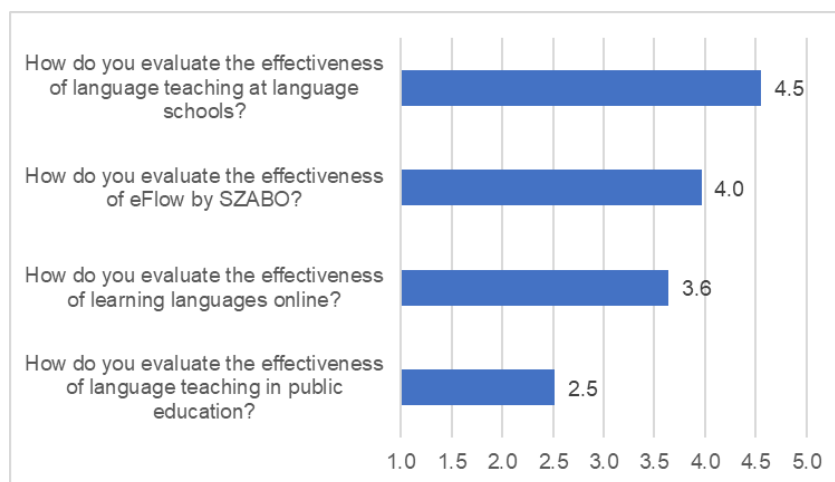


**Figure 4** Perceived effectiveness of language learning types

Figure 5 shows the Perceived effectiveness of language learning forms. With regard to the perceived effectiveness of language learning forms, we have found that the respondents consider the individual learning in classrooms (individual offline) to be the most effective form, the mean was 4.0 on a five-point scale. The second most effective learning form was the individual online, followed by the traditional classroom groups. Language teaching in online groups was seen as the most ineffective form of teaching/learning.
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**Figure 5** Perceived effectiveness of language learning forms

Figure 6 shows the Willingness to pay. We have found that the respondents are willing to pay the highest amount for individual online learning in the first place, and for classroom

individual learning in the second. They intend to pay significantly less for learning in traditional classroom groups, and the least for learning in online groups.
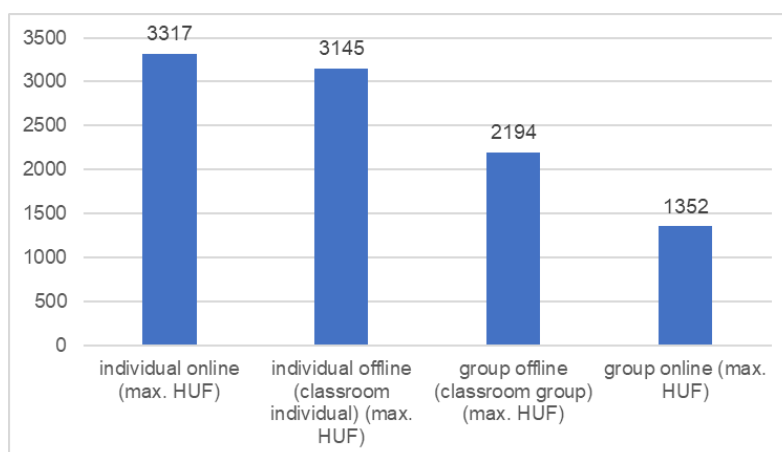


**Figure 6** Willingness to pay

Figure 7 shows the Improvement of skills by Eflow by SZABO. Having investigated the improvement of language skills by Eflow by SZABO, we have found that the respondents are of the opinion that their listening skill was improved the most: the mean was 4.0 on a five-point scale. The software also improved their vocabulary skill, speaking skill, reading skill, and their English usage skill. They have stated that their writing and grammar skills were improved the least by Eflow by SZABO.
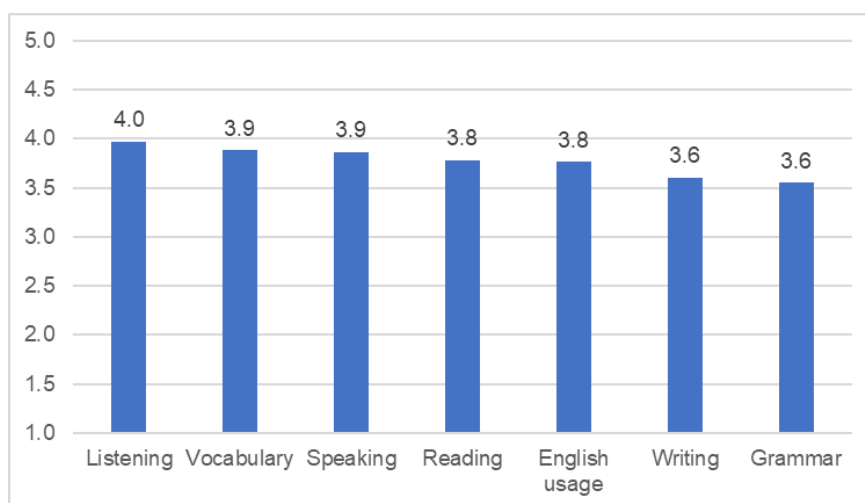


**Figure 7** Improvement of skills by Eflow by SZABO

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO= 0.738) indicates the suitability of the data for further analysis by Kaiser's standard. So does Bartlett's Test of Sphericity (Approx. Chi-Square = 140.265; df=36, Sig.= .000). The Principal Component Analysis initially extracts 16 factors, of which there are only three components whose Eigenvalue is at least 1. They explain 69.92% of the total variance. The Rotated Component Matrix shows the three resulting factors (Table 1).

**Table 1:** Rotated Component Matrix

|  | Component | | |
|---|---|---|---|
|  | 1 | 2 | 3 |
| the service provider's accessibility (distance, car park) | **.838** | -.005 | .136 |
| ease of use (webpage/app) | **.787** | .367 | -.014 |
| flexibility of the administrative procedures related to language learning | **.747** | .065 | .359 |
| service environment | **.725** | .254 | .362 |
| design (website/app) | .430 | **.692** | -.006 |
| effectiveness of the service provider | .211 | **.793** | .020 |
| image, reputation & brand name | -.144 | **.786** | .371 |
| service fee | .334 | -.016 | **.735** |
| group size | .100 | .199 | **.767** |

*Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.*

Factor 1 includes the service provider's accessibility (distance, car park), the ease of use of webpage/app, the flexibility of the administrative procedures related to language learning and the service environment, so it is named a Service Soft factor. The design of the service provider's website/app and the perceived effectiveness of the service provider as well as the image/reputation & brand name of the service are substantially loaded on Factor 2. Therefore, it can be concluded that brand name, image, design and the perceived effectiveness of the language service provider are interrelated in the language learners' mind. Factor 3 is made up of the service fee and the group size. It suggests that language learners' willingness to pay and the group size are also connected.

At the time of writing this paper, no relevant literature was available so we were not in a position to compare the results of the three factors to previous results. Thus, the results of this paper contribute to the literature of this topic.

## 6. Conclusions and Implications

Based on the results of this research, it can be stated that the respondents are quite motivated to learn foreign languages at multinational companies. Having analysed the importance of information sources used in the decision-making process of different forms of language learning, friends and acquaintances are found to be the most significant influencing factor. The effectiveness of the service provider is the most important attribute in choosing a service provider. In comparison to previous times, recognition of the effectiveness of online teaching has become much stronger among language learners. This shows that the tools and methodologies have been improving and digital tools have also been incorporated in language teaching at companies. The other important finding is that companies are open to online teaching insofar as it complements offline teaching to make participants motivated and successful in language learning as much as possible. In other words, the company management supports the development of new technologies and software, which is a long-term condition for staying on the market. It seems from the surveys that methodological preferences are slowly progressing towards realignment, meaning that the respondents consider online learning/teaching almost as effective as face-to-face teaching. In the same time, it is a rather interesting finding that the respondents would be willing to pay more, even if not by much, for online teaching. This confirms that the everyday use of technological tools and the refinement of online solutions are making online language teaching increasingly accepted.

Our view is that the condition for staying on the market in the long run is to start using appropriate online methods in time in (company) language teaching, and efforts should be made to design these methods so that they strengthen the language learning motivation of learners. It should be achieved that by using new technologies and software that the teacher's role (teacher's direct communication with students) could be replaced in language teaching as early as possible. This could be covered by the slightly higher prices that the market would be willing to pay for such a service and at the same time the personnel costs could also be reduced.

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# MARKETING CAPABILITIES IN THE DIGITAL ENVIRONMENT. CONSEQUENCES ON THE PERFORMANCE OF THE COMPANY

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**Abstract:** *The purpose of this paper is to identify the effects of marketing capabilities in the digital environment on the company's performance. To test these effects, the data was obtained through a questionnaire-based survey on a sample of 38 companies that have operations in Romania. For the statistical processing of the data in the empirical research, we used the software program SPSS 23, and regarding the achievement of the objectives associated with the present research, the statistical analysis process of the data included several stages. The first stage is the calculation of the relative frequencies for the questions included in the questionnaire that concern aspects related to the firmographic characteristics linked to the investigated sample: the origin of the firm's capital, the number of employees, the turnover, the weight of the turnover realized on the account of legal and physical persons and the economic sector in which they carry out their activity. In the second stage, the reliability of the measurement scales used to deal with the constructs investigated in the present research was tested using the Cronbach coefficient α. In order to test the research hypotheses considered in this research, in the next stage, we used the confirmatory factorial analysis, with which we tested the factorial load of each item, and subsequently, we aggregated the respective items. The results suggest that the marketing capabilities in the digital environment have a positive effect on the 3 dimensions of performance analysed in this article (performance of customer relations, performance of the marketing of the company, the financial performance of the company) in an emerging economy.*

## 1. Introduction

The embrace on a wide scale of the digital technologies by consumers and companies alike has led to major changes in the practice of marketing. Increasing the level of consumer knowledge due to access to information and digital transformation of business and exchange processes involves the development of new useful marketing capabilities in the digital environment. Marketing capabilities influence both the sustained competitive advantage of an organization and the intensity of innovation, but however, literature on the role of marketing capabilities in the competitive strategy has been limited.

When we talk about marketing capabilities, we can refer to the strategic theory and practices of marketing through organizational innovation, the sustained competitive advantage of the company or to the development, improvement and validation of entrepreneurship measures. The marketing capabilities of a company are reflected in its ability to differentiate competing products and services and build successful brands, "companies with strong brand names can charge premium prices on foreign markets to improve their capacity as well" (Kotabe et al., 2002: 82).

Increased digitization and digitalization can lead to significant challenges for organizations facing complex and ever-changing markets that are out of control. The growing presence of digital marketing also raises important questions for marketing management and research. Once the information has been collected by an organization from their clients, the next important task to undertake is to integrate the information.

Information integration requires the assimilation of customer information from all interactions to develop a detailed picture of each customer relationships in the utopia of a "unique customer vision" (Jayachandran, 2005). Previous CRM (Customer Relationships Management) systems have managed to integrate online data from websites and e-mail interactions. There is no set format for importing social data; rather, its power comes from its qualitative and profound nature.

To counter this problem, the software industry is developing new -tools to make it possible to integrate data from different social media sources into a format that can be quantified and generalized to some extent. For digital marketers, there are three major challenges, namely: (1) the ability to generate and leverage customers' deep knowledge, (2) brand management and reputation in a marketing environment where social media plays an important role and (3) assessing the effectiveness of digital marketing.

The use of the internet continues to explode worldwide, becoming an increasingly important digital source of competitive advantage in B2C (Business to Customer) and B2B (Business to Business) marketing. Much attention has been focused on the extraordinary opportunities of digital marketing and the focus on the real challenges for companies facing digitalization. (Leeflangab et al, 2014).

The widespread adoption of digital technologies by consumers and companies has led to major changes in the marketing practice. Increasing the level of consumer knowledge due to access to information and the digital transformation of business processes and exchange processes require the development of new useful marketing capabilities in the digital environment.

The purpose of this paper is to develop a conceptual model for researching the consequences of marketing capabilities in the digital environment and on the company's performance.

## 2. Literature review

In the last two decades, we have witnessed a real explosion of marketing research regarding the impact of the Internet and related technologies on consumers and how markets work. In the digital environment, there are four key interactions: consumer-firm interactions, firm-consumer interactions, consumer-consumer interactions and firm-firm interactions (Yadav, 2014). The research of consumer-firm interactions focuses on the behavior of consumers in the context of interaction with companies in the digital environment. The research of the company-consumer interactions focuses on the strategies and tactics of the companies that interact with the consumers in the digital environment. The research of consumer-consumer interactions consists of analyzing the behavior of consumers interacting with other consumers in the digital environment. The research of the company-company interactions concerns the strategies and tactics of a company in the context of the interaction with other companies in the digital environment.

Marketing capabilities are defined as a unique package of skills and resources that facilitate business execution, and marketing processes are the ones that ultimately contribute to a lasting competitive advantage and a superior performance (Day, 1994)

Marketing capabilities represent what the organization can do by using its resources in an integrated way. The literature identifies certain specific marketing capabilities used to transform resources into valuable outcomes based on the classic marketing mix (Vorhies

and Morgan, 2003), and to orchestrate marketing capabilities, resource inputs that involve managing market information, as well as those of developing and executing the marketing strategy.

The development of marketing capabilities in the digital environment is carried out in order to increase the competitiveness and the performance of the companies. The capabilities theory identifies as the source of sustaining the competitive position the distinctive and hard-to-copy resources that the company has developed over time.

The marketing capabilities can be considered as complex sets of knowledge and skills accumulated, exercised through organizational processes, which allow organizations to coordinate their activities and can influence a profit growth, capabilities can be complementary when the return to one capability is affected by the presence of another (Milgrom and Roberts, 1990; Moorman and Slotegraaf, 1999)

In terms of customer engagement, as the main marketing capability, organizations are under pressure to deliver superior customer value, which in turn enhances customer loyalty to the organization and its product offerings (Moorman and Rust, 1999).

According to Day (2011, pp.183-185), marketing capabilities are defined as integration processes designed to apply the collective knowledge, skills and resources to the business market needs, allowing the organization to add value to its goods and services and can respond to competitive demands.

Marketing capabilities are developed by orienting the employees of the firm who repeatedly apply their knowledge to solve the marketing problems of the organization (Day, 1994; Grant, 1991, 1996).


## 3. Research methodology

### 3.1. Data collection

We used single informant self-reported data collected from a sample 38 companies from Romania; an invitation was sent by email to the marketing managers of these firms, together with a cover letter that explained the purpose and confidentiality policy of the survey, inviting them to complete the questionnaire online.

First, we asked respondents questions related to the firmographic characteristics concerning the investigated sample: the origin of the firm's capital, the number of employees, the turnover, the weight of the turnover realized on the account of legal and natural persons and the economic sector in which they carry out their activity.

The sample includes firms from various sectors: IT&C (24.95%), trading (30.02%), services (28.55%), industry goods (13.35%) and other domains (3.13%). The small companies with less than 50 employees count for 73.50%, medium sized firms represent 13.25%, and the remaining 13.25% are large companies. Companies with turnover under 500.000 Euros represents 40.96%, companies with turnover between 500.000 and 2 million count for 7.23%, and 6.02% with a turnover over 2millions. The specific item indicators and questions for each survey measure are contained in the Appendix.

### 3.2. Measuring reliability and validity

After testing the reliability of the scales used, the suitability of the factorial analysis was tested in the next stage of the statistical analysis of the data. The adequacy of the factorial analysis was tested using the KMO coefficient and Bartlett's test. This analysis was performed for each construct, resulting in the adequacy to perform the factorial analysis for each construct (the KMO coefficient value was greater than 0.5 for each construct and the significance level p for each the Bartlett's test was less than 0.05).

Given that there is suitability for conducting factorial analysis for each construct, one of the forms of factorial analysis, confirmatory factorial analysis (CFA), has been developed. Through the CFA were eliminated from the measurement scales used to deal with the investigated constructs the items that had lower factor loadings as a value of the minimum admitted limit of 0.5. After this step, the Cronbach coefficient α was recalculated for the constructs for which the items were removed. In the present research, it was only in the case of two constructions that the items were eliminated after the CFA. These constructions are customer satisfaction and commitment.

Also, with the help of the CFA the aggregation of items (observable variables) in dimensions and dimensions in constructions was achieved. This step was necessary to carry out the testing of the research hypotheses that presupposes the existence of links between the investigated constructs.

After the CFA was performed, the validity of the investigated constructs in two forms was tested, convergent and validity. Testing the two forms of validity was performed using the Pearson correlation coefficient and it turned out that all constructs included in the conceptual model are valid.

### 3.3. Hypothesis development

The proposed model represents a development of the model of Morgan, Vorhies and Mason (2009), which are based on the following hypotheses:

a) the orientation towards the market of a company is positively associated with its business performance.

b) the marketing capabilities of a company are positively associated with its business performance.

c) the interaction between the company orientation towards the market and the marketing capacities is positively associated with the activity of the performance company.

The results of the hypotheses formulated by the authors show that in the two subjective performance models, the path coefficients support both hypothesis, 2 and 3, but no support is found for hypothesis 1 because the path coefficient is not significant in either the main effects or the interaction model.

Their study suggests future research paths that may hold particular promise given the value creating potential of marketing capabilities revealed in the study, it is important to know how such capabilities are developed and how they help to build as well as deploy a firm's performance knowledge resource.

On the basis of the previous research, we have formulated the following hypothesis based on which we structured the conceptual model of the research on the company's strategic orientations consequences on the marketing capabilities in the digital environment and on the company's performance.

*H1: The marketing capabilities in the digital environment exert a direct and positive influence on the customer relationships performance.*

*H2: The marketing capabilities in the digital environment exert a direct and positive influence on the marketing performances of the company.*

*H3: The marketing capabilities in the digital environment exert a direct and positive influence on the financial performance of the company*

For an organization, it is important to develop the most critical capabilities to be successful, by applying specific strategies, and this should be reflected in the financial performance.

Customer relationship performance was adapted from scales used by Trainor in 2011. Respondents were asked to answer the following question: "In relation to the objectives set, how do you assess the evolution of your company's performance over the last 3 years? (1- much weaker; 7-much better)": (1) customer satisfaction, and (2) customer loyalty. All Likert

scale items were anchored at 1 (Worse) to 7 (Better). The reliability was found to be α=0.886 for these two customer items.

Marketing performance of the company was adapted from scales used by Morgan, Vorhies, Mason (2009). Respondents were asked to answer the following question: "In relation to the objectives set, how do you assess the evolution of your company's performance over the last 3 years? (1-much weaker; 7-much better)": (1) allocating marketing resources effectively implementation; (2) organizing to deliver marketing programs effectively capabilities; (3) translating marketing strategies into action; (4) executing marketing strategies quickly. All Likert scale items were anchored at 1 (Worse) to 7 (Better). The reliability was found to be α=0.802 for these marketing performance items.

Financial performance of the company was adapted from scales used by Vorhies , Harker (2000). Respondents were asked to answer the following: "In relation to the objectives set, how do you assess the evolution of your company's performance over the last 3 years? (1-much weaker; 7-much better)": (1) business unit profitability; (2) return on investment (ROI); (3) return on sales (ROS).  All Likert scale items were anchored at 1 (Worse) to 7 (Better). The reliability was found to be α=0.724 for these financial performance items.
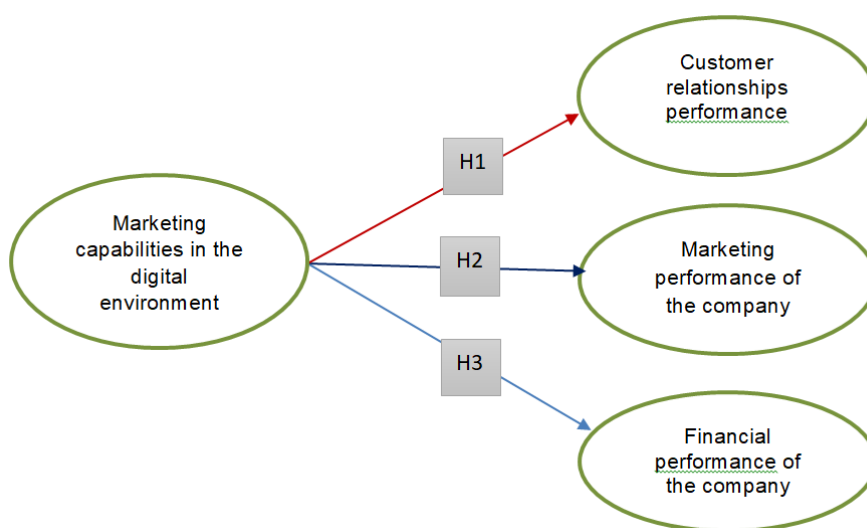


**Figure 1.** Structural model

### 3.4. Results of the hypotheses testing

Determining the influence of marketing capabilities on customer relationships performance, marketing performance of the company and financial performance of the company is a matter of great interest for researchers and managers alike.

Testing the research hypotheses is the main objective of the data analysis process and the entire research. To test these hypotheses, in the earlier stages of the data analysis plan, the variables observed in the sample were aggregated into constructs (latent variables).

The constructs resulting from the aggregation of the observed variables were correlated according to the research hypotheses formulated.

In order to test the research hypotheses considered in this research, we performed the confirmatory factorial analysis, with which we tested the factorial load of each item that was selected to make one of the 4 constructs mentioned in the theory part. Subsequently, we added the respective items, so that we remain with 11 variables, which is the sum of the items of the initial construction.

In the last stage of the statistical analysis process, the hypotheses of the proposed conceptual model were tested using simple linear regression. During this stage we introduced new variables, obtained from the aggregation of items, as exogenous variables or as result variables.

The table below shows the measurement scales used to measure each construct included in the conceptual model.

**Table 1:** The measurement scales

| | |
|---|---|
| Marketing capabilities (Vorhies and Harker, 2000) | Our marketing research abilities help us find more new customers than do our competitors<br>Market research skills help us develop effective marketing programs<br>We use our marketing research information more effectively than our competition uses their own marketing research information<br>Our marketing research expertise helps us develop better marketing programs than our competition |
| Customer relationships performance | Customer satisfaction |
| (Trainor, 2011) | Customer loyalty |
| Marketing performance of the company (Morgan, Vorhies, Mason, 2009) | Allocating marketing resources effectively implementation<br>Organizing to deliver marketing programs effectively capabilities<br>Translating marketing strategies into action<br>Executing marketing strategies quickly |
| Financial performance of the company (Vorhies and Harker, 2000) | Business unit profitability<br>Return on investment (ROI)<br>Return on sales (ROS) |

Through the empirical research conducted in this study, we set out to test the explanatory power of the conceptual model based on the existing models in the specialized literature. For the entry into operation of the constructs included in the conceptual model of the research, we used scales proposed and validated by other researchers in the field of marketing. These scales were adapted to the context of the present research. The measurement scales used to measure the investigated constructs were tested in terms of their reliability. Their reliability was tested using the Cronbach coefficient α. Following the reliability test it was found that for all scales used the Cronbach coefficient α value was higher than 0.700. Therefore, we can say that the scales used in the presented research to measure the investigated constructs are reliable.

In the first stage of analysis of these constructs, the reliability of the constructs was tested, resulting in a Cronbach α value indicating that the scale is reliable.

Testing the research hypotheses is the main objective of the data analysis process and the entire research. To test these hypotheses, in the earlier stages of the data analysis plan, the variables observed in the sample were aggregated into constructs (latent variables).

In the following paragraphs we present the results obtained for the test of the research hypotheses using a simple linear regression.

The results agree with those obtained by other researchers in the field of marketing and are presented in the following. These results were obtained after testing the research hypotheses by using a linear regression.

This chapter highlights the results obtained as a result of testing the reliability of the measurement scales, of the confirmatory factorial analysis and as a result of testing the research hypotheses included in the conceptual model.

Within this subchapter the results obtained as a result of testing the research hypotheses using simple linear regression are presented.

The research hypothesis no.1 aims to analyze the direct effect that customer relationships performance has on marketing capabilities.

The research hypothesis no.2 aims to analyze the direct effect of marketing performances of the company on marketing capabilities.

The research hypothesis no.3 aims to analyze the direct effect that the profitability has on marketing capabilities.

Table 2 presents the results of testing this hypothesis and shows us that hypothesis 1 is confirmed because the two variables are correlated with each other, a fact revealed by the value of the correlation coefficient (R = 0.834), and the connection between them is positive and significant from statistically ($\beta$ = 0.834, p = 0.000).

We can also state that 69.60% (R² = 0.696) of the variation of the variable of customer relationships performance is generated by the variation of the variable marketing capabilities.

Hypothesis 2 is confirmed because the two variables are correlated with each other, a fact revealed by the value of the correlation coefficient (R = 0.632), and the connection between them is statistically significant and positive ($\beta$ = 0.632, p = 0.000).

We can say that 39.90% (R² = 0.399) of the variation of the marketing performance variable of the company is generated by the variation of the marketing capabilities variable.

Also, hypothesis 3 is confirmed because the two variables are correlated with each other, a fact revealed by the value of the correlation coefficient (R = 0.633), and the connection between them is positive and statistically significant ($\beta$ = 0.633, p = 0.000).

Thus, we can say that 40% (R² = 0.400) of the variation of the variable financial performance of the company is generated by the variation of the variable marketing capabilities.

**Table 2:** The results

| Independent variable | The dependent variable | Correlation coefficient (R) | Coefficient of determination ($R^2$) | The standardized coefficient of the regression function ($\beta$) | Significance level (p) | t-score |
|---|---|---|---|---|---|---|
| Marketing capabilities | Customer relationships performance | .834 | .696 | .834 | .000 | 9.084 |
| | Marketing performance of the company | .632 | .399 | .632 | .000 | 4.887 |
| | Financial performance of the company | .633 | .400 | .633 | .000 | 4.903 |

## 4. Conclusions

In this empirical study, we aimed, as a main objective, to test the validity of the links between the different constructs included in the conceptual model of the research. The links between the constructs are presented in this empirical study in the form of research hypotheses. The validity of these research hypotheses was tested by using linear regressions.

All the hypotheses are confirmed; therefore, the variables are correlated with each other, they are relevant in terms of the correlation coefficient (R), and the links between them are positive and statistically significant (β, sig ≤ 0.05).

Our results showed that marketing capabilities have a positive effect on the three dimensions of performance (customer relationships performance, company marketing performance, financial performance of the company). Therefore, managers should focus on customer relationships and customer's loyalty, allocating marketing resources for the effective implementation and collecting of information about marketing research, more effectively than their competition, by using their own marketing research information to record the profitability of the business unit. It's important then that firms respond and adapt to external changes through adaptive mechanisms proposed by prior research and organizational structural factors under which marketing capabilities affect firm performance. If managers lean toward a more analytical understanding of marketing capabilities and enhance the shared understanding of the firm capability set, firms could build relational advantages that allow for greater flexibility and a larger share of customer revenue.

Hence, marketing capability plays an important role in the configuration of customer relationships that together build competitiveness.

Finally, we conclude that our constructs have high reliability and have internal consistency.

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**Bio-note**
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**Appendix 1.** QUESTIONNAIRE

1. What is the main field of activity of your company?
_____

2. Company's capital origin:
   a) Romanian
   b) Foreign
   c) Mixed

3. Number of employees (at the end of 2019):
   a) 0 - 50 persons
   b) 51-100 persons
   c) over 100 persons

4. Turnover of your company (at the end of 2019):
   a) below 500,000 Euro
   b) 500.001 -2.000.000 Euro
   c) over 2 million Euro

5. In which economic sector your business mainly operates?
   a) Industry goods
   b) Trading
   c) Services
   d) IT&C
   e) Other

6. Please specify to what extent you agree with the following statements regarding the capabilities of digital marketing within your company (1- Total disagreement; 7 - Total agree).

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Our marketing research abilities help us find more new customers than do our competitors | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Market research skills help us develop effective marketing programs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| We use our marketing research information more effectively than our competition uses their own marketing research information | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Our marketing research expertise helps us develop better marketing programs than our competition | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

7. In relation to the objectives set, how do you assess the evolution of your company's performance over the last 3 years? (1-much weaker; 7-much better):

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Customer satisfaction | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Customer loyalty | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Efficient allocation of marketing resources | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Organization for efficient delivery of marketing programs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Translation marketing strategies | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Fast execution of marketing strategies | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Business unit profitability | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Return on investment (ROI) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Return on sales (ROS) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. Your position within the company: _____

**Scientific events at the Doctoral School of Economics, University of Oradea**

On 22nd of November 2019, the Doctoral School of Economics organized the 10th edition of the International Conference of Doctoral Students and Young Researchers "Emerging Markets Economics and Business". This scientific event was conducted in partnership with the Faculty of Economics, University of Miskolc, Hungary, and with the supprt of the International Business School from Botevgrad, Bulgaria. During the conference, 100 papers were presented by doctoral and post-doctoral students and other young researchers from Romanian and foreign universities. The papers were grouped in seven sections, addressing topics related to Economics, Business, Entrepreneurship and SMSs, Tourism, Finance and other topics included in the broad field of Economic Sciences. All submitted contributions were double-blind reviewed and 81 of them were accepted for publication in the Proceedings of the 10th International Conference of Doctoral Students and Young Researchers, which is also available online at http://steconomiceuoradea.ro/wp/wp-content/uploads/2014/01/volum_2019_doctoranzi.pdf. Moreover, as in all previous editions, selected authors were invited to submit extended versions of their contributions for publishing in Oradea Journal of Business and Economics. Some of them are published in the current issue, namely issue 5 (1) / 2020, but several papers will be published in the following issues. Congratulations to all the participants in the Conference, especially to those whose contributions were published, and we are happy to welcome you again at the 11th edition of the Conference, on 20th of November 2020!

On 24th of September 2019, at the Doctoral School of Economics of the University of Oradea took place the defense of the Ph.D. thesis in Economics of Mrs. Diana-Cristina Sava - teacher of economic modules at "Partenie Cosma" Economic College from Oradea. She defended her Ph.D. thesis titled "The values of the creative economy in Romania", under the supervision of Prof.Dr.Habil. Alina Badulescu. As mentioned by the referees, Dr. Sava's thesis was elaborated and structured with remarkable coherence and with an adequate logic, and organized into four chapters and also a summary of the conclusions and contributions of the thesis. Her thesis, combining theoretical approaches and synthese with consistent specific analyses and study cases, represents a notable contribution to enriching the knowledge in the field of creative economy. Among such contributions, we mention the following: conceptual and theoretical approaches in the field; specific analyses regarding the factors and catalysts of the creative economy, for the case of Romania; specific and comparative analyses regarding the creative cities in Romania and statistical researches in this regard; formulating policy proposals for ecncouraging the development of creative cities and increasing the role of creativity in valorising the use of material and human resources of Romania etc. The board of referees also acknowledged that Dr Sava published 14 scientific papers during the PhD program. Congratulations to Dr. Diana Sava, the most recent doctor in Economics of the University of Oradea!

Professor Alina Badulescu
Dean of the Faculty of Economic Sciences – University of Oradea
President of International Conference of Doctoral Students and Young Researchers